



Modelling an Intrapreneurship landscape towards Entrepreneurship: Gauteng Province, South Africa

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ABSTRACT

This article examines some selected cognitive factors influencing intrapreneur's decisions to start their own businesses. Limited knowledge exists about the cognitive reasoning used by individuals with intrapreneurial backgrounds in pursuit of entrepreneurship in South Africa. A mixed-method approach, focusing on intrapreneurs 'now turned' entrepreneurs within the finance and business services sector of economy in Gauteng province, was adopted. This consisted of a survey using a total of 31 questionnaires and from which 11 participants were interviewed. The qualitative findings revealed that social networks, heuristics and metacognition were pronounced influencers modelling intrapreneurs into entrepreneurship but varied at different stages of the entrepreneurship process. The quantitative findings using the chi square test show that the p values of the selected transitioned variables were significant, while the relationship between entrepreneurship as represented by vision, independency, need for achievement and other cognitive factors such as social network, heuristics, and metacognition was strong and positive. This was supported by the loading factors of the principal component analysis. Through the proposed conceptual model, this research contributes to a better understanding of the nexus between cognitive factors and entrepreneurship as represented by vision, independence and the need for achievement within the Small Micro and Medium Enterprise (SMMEs) business owners. Finally, this article recommends that entrepreneurs must be challenged, not just to be active but to innovate, with corresponding rewards for motivation.

Key phrases

Cognition; decision-making; entrepreneurship; intrapreneurship; South Africa and transition

1. INTRODUCTION

Entrepreneurship is broadly accepted as a panacea to poverty reduction and job creation (Sutter, Bruton & Chen 2019:1). It is for this reason the need for consistent research to appraise the entrepreneurial ways of thinking in relation to their performance. Entrepreneurial thinking is central to understand both entrepreneurs and entrepreneurship as opined by Mazzarol and Reboud (2020:1). Most scholars, however, have rather researched decision making of entrepreneurs in relation to entrepreneurial thinking within an organisation (Shepherd, Williams & Patzelt 2015). Little is known therefore about the cognitive factors such as social networks, heuristics and metacognition and/ or combinations that drive the cognitive reasoning of individuals with intrapreneurial backgrounds in pursuit of entrepreneurship in South Africa.

Within the context of the South African business environment, entrepreneurs are part of the SMMEs business owners which have become an engine to drive the economy (Mlotshwa & Msimango-Galawe 2020:1). The composition of SMMEs in South Africa however includes business owners with or without entrepreneurial tendencies including street traders, and the government policy in place is so generic that its impact on businesses is grossly unnoticeable (Kalitanyi 2019:4-5). The limited knowledge about the SMMEs business owners with intrapreneurial backgrounds and why and how their decisions impact their various activities poses a critical challenge to the development of entrepreneurship in South Africa. Hence, the need exists to examine the cognitive reasons influencing their decisions to become entrepreneurs. Within the theory of entrepreneurial cognition, cognitive behaviour links how entrepreneurs think with new venture creation (Metallo, Agrifoglio, Briganti, Mercurio & Ferrara 2020:5). While psychology theory emphasises independency and the need for achievement in defining an entrepreneur, scholar's viewpoints vary regarding entrepreneur's characteristics such as visionary, creativity and innovativeness.

Despite a lack of unity within theories of entrepreneurship (Shepherd, Wenneberg, Suddaby & Wiklund 2019:34-35), there are theories that explain the potency of transition to entrepreneurship. This includes sociology and organisation theory which is attributed to have contextual influences (Sakhdari, Burgers, Farsi & Rostamnezhad 2020:1). Furthermore, the reasons for intrapreneurs transition and decision-making represents a substantial stream of research in entrepreneurship (De Winnaar & Scholtz 2019:1). For example, the

entrepreneurial cognition perspective which is relatively new is anchored on entrepreneurship theory and empirical research as well as cognitive psychology (Gustafsson 2006:2-3). It is important to address the independency and need for achievement as explained in psychological theory including vision which is not new to psychology literature. However, it is imperative to understand the entrepreneur as a visionary and independent individual whose intention is to run their own business and become successful. Therefore, entrepreneurial cognition know-how is needed to appreciate the essence of entrepreneurship.

Entrepreneurial cognition research, so far, has theorised about the contextual influences to provide the necessary structures and boundaries to develop this aspect of entrepreneurship. Previous researchers however, based on their areas of interest, have dealt with better understanding entrepreneurial cognition and elements as it affects decision-making. This includes expert scripts (Mitchell, Mitchell & Mitchell 2017:1); overconfidence (Singh 2020:1); cognitive biases, heuristics (Promsiri & Kunte 2019:3:10); and optimism, perception, emotions, entrepreneurial alertness, self-efficacy and social entrepreneurship (Urban 2020; Wadeson 2006). However, despite the rapid progress made by the extant literature, relatively little is known about how cognitive factors such as social networks, heuristics and metacognition or their combinations influence the individual's decision to leave current employment in pursuit of their own venture (Fatma, Mohamed, Dana & Boudabbous 2020; Shepherd *et al.* 2015:15-22). Therefore, investigating the influence of each cognitive factor or their combinations on the decision-making ability of the intrapreneurs 'now turned' entrepreneurs would further strengthen entrepreneurial thinking potency and entrepreneurship theory. Hence, the current research ascertained the extent to which these cognitive factors influenced their decision-making process in transition to entrepreneurship.

This article refers to the work of Shepherd *et al.* (2015) in evaluating decision-making influencers (cognitive factors) in the entrepreneurial process of opportunity evaluation, entry, and utilisation, regarded as the three (3) major stages of the entrepreneurial journey. The units of analysis were entrepreneurs with intrapreneurial background within the finance and business sector of the economy in Gauteng province. The selected entrepreneurs had worked for at least 42 months prior to and after transition in line with the Global Entrepreneurship Monitor (GEM) (2018:14) report. The article findings may assist entrepreneurial stakeholders and policy-makers to devise specific intervention mechanisms that might support these types of entrepreneurs. This article reviews the extant literature relating to cognitive factors relevant to transition into entrepreneurship. The research methodology is presented, the findings are discussed and summarised, and the article

concludes with a discussion of the theoretical and managerial implications and directions for future research.

2. LITERATURE REVIEW

The process of establishing a new business requires decision making and action taking despite the uncertainty encountered and which results in entrepreneurial behaviour (McMullen & Shepherd 2006:133-135). Moreover, the decision-making processes leading to entrepreneurial behaviour are influenced by various cognitive elements such as knowledge, belief systems, and emotions (Shepherd *et al.* 2015:4-7). Some scholars have paid attention to social networking (Mlotshwa & Msimango-Galawe 2020; Pratono 2018), heuristics (Markowska & Wiklund 2020:1-2) and metacognition (Filho & Bruni 2017). However, no confirmed research as yet deals with the influence of social networking, heuristics and metacognition on entrepreneurs with an intrapreneurial background. Neither has research used the combinations of these elements in modelling the transition from intrapreneurship into entrepreneurship. In response, this article examines the influence of these selected cognitive elements on the intrapreneur's transition towards entrepreneurship.

Intrapreneurship and entrepreneurship are different start-up modes. Intrapreneurship is concerned with the discovery of entrepreneurial opportunity within an existing enterprise (Kumar & Kumar 2018:13). It is exhibited through innovativeness and enterprising behaviour (Alam, Kousar, Shabbir & Kaleem 2020:31-32) and is typical of a large enterprise setting (Mazzarol & Reboud 2020:67-68). Parker (2018:18) explains entrepreneurship as a multifaceted phenomenon analysed at both individual and enterprise levels, encompassing personal traits and behaviour and entailing the creation of a new organisation.

However, the emphasis in Parker's definition lies on traits and behaviour which need to be measured, since intrapreneurship and entrepreneurship can only be assessed by using a number of variables such as cognitive factors. According to cognitive continuum theory, an optimal decision can only be made if cognitive processes employed match the requirements of the tasks (Gustafsson 2006:19-20). The entrepreneurial cognitions perspective specifically provides the required insights as to 'how' entrepreneurs think and 'do' what they do.

Thus, the considered variables in this article relate to the role which social networking plays in accessing knowledge leading to new discoveries aiding entrepreneurial entry or access to funding or growth of a client database. All of this entails the concept of 're-thinking' that stimulates the process of solving problems.

2.1 Social networking

The concept of networking has been shaped by different researchers who focus on benefits of grouping and leveraging community relations structures (Scott 1991). Sociologists extend this approach to include the formal and informal social relations contained in social network theory (Liu, Sidhu, Beacom & Valente 2017).

Neira, Calvo and Fernandez (2017:1) argue that the more people network socially, the greater their entrepreneurial intention. This positively affects new venture success, as it reduces the cost of managing information asymmetries towards new firm start-ups. Networks are thus crucial to accessing novel knowledge from outside sources, an essential platform to achieve entrepreneurial outcomes (Song, Min, Lee & Seo 2017:2), which includes entrepreneurial entry.

Further to this discussion, Freeman (1979) advocated the three (3) network concepts of centrality, cohesion, and structural equivalence. Centrality emphasises interactions between different networks. For example, the higher the degree of centrality, the more social ties exist, which implies greater opportunities for information exchange. The ability to effectively access one's network makes individuals with high centrality influential, while network cohesion regulates the influence of inter-personal interactions. According to Franco (2018), networks are the means of providing a diversity of knowledge, while accessing resources and complementary assets for business.

This article, however, placed a premium on the theory of weak ties, universally defined as social relations requiring little investment which comprise loosely connected members. Weak ties are more likely to channel new information than strong ties (Liu *et al.* 2017:1). Through this, entrepreneurs leverage on their social ties to start their own business. This article therefore examines the influences of social networks on intrapreneurs' transition to entrepreneurship. Related studies focused on the impact of social networking on SMMEs (Mlotshwa & Msimango-Galawe 2020; Pratono 2018).

The article thus addresses the extent to which social networking positively or negatively impacts on entrepreneurship of intrapreneurs 'now turned' entrepreneurs. In this article, entrepreneurship is duly represented by the combination of vision, independence and need for achievement as dependable variables.

H₁: Vision, independence and need for achievement are related to social networking

2.2 Heuristics

Maitland and Sammartino (2014:3:4:17) posited that heuristics, especially those based on experiential learning, may act as powerful cognitive tools enabling, rather than limiting decision-making in uncertain environments. Heuristics are associated with the cognitive psychology theory and are frugal “rule of thumb” decision-making toolsets used frequently for speedy decision making while addressing emerging opportunities (Hoppe 2018:13:26). Heuristics evolution encourages quick decision-making, while also learning from experiences (Maitland & Sammartino 2014:753-754). Heuristics are derived fast and seamlessly from previous experiences, limiting bias while supporting decision-making processes in business idea evaluation (Sinyard, Dionne & Loch 2020:1). While heuristics differ from the concept of routines they speed-up experiential thinking in simplifying the assessment of alternative tasks hence leading to timely business changes. Simply put, entrepreneurs understand this ‘concept’ as the ability to make new discoveries and plough these back into addressing similar activities for better results. Shepherd *et al.* (2015:29-31) viewed heuristics as playing a role in influencing entrepreneur’s decision-making, but heuristics were not pronounced as consensus cognitive elements, especially on entrepreneurial entry. Hence, the need exists to affirm heuristics relevance to entrepreneurs with intrapreneurial background who desire to start their own enterprises.

Markowska and Wiklund (2020:1-2) supported the relationship between heuristics and entrepreneurship as represented in this research by vision, independence and the need for achievement due to entrepreneurial learning on the job or when embarking on a special task.

H₂: Vision, independence and need for achievement are related to heuristic.

2.3 Metacognition

Metacognition is defined as thinking about your own thinking, a concept of cognition, which serves to organise knowledge, tasks and situations while it encompasses the processes of planning, tracking, and assessing personal performance and regulates specific actions for new idea creation in given dynamic circumstances (Kim & Lee 2018:1; Flavell 1979). It consists of two elements including: knowledge of cognition and regulation of cognition. Three types of metacognition’s knowledge exist: person knowledge - understanding one’s capabilities; task knowledge - what do I know and the extent to which I communicate; and strategy knowledge - one’s learning strategy to be informed. However, this research focused on person knowledge.

While cognition is the knowledge structure used in assessing and take decisions for venture creation, metacognition consists of awareness and control over the knowledge structure

(Haynie, Shepherd & Patzelt 2012:1-2). Hence, metacognition knowledge becomes a resource formed from what the entrepreneurs understand about the people, task and strategy and is applicable to achieve set goals including entrepreneurial entry. Based on these arguments, entrepreneurs with strong metacognitive ability are better positioned to successfully carry out their business tasks. Nevertheless, the existing literature does not show how entrepreneurial metacognition affects both entrepreneurial tasks and performance. These relationships are yet to be examined empirically and statistically.

Gazorkhani, Mashhadi and Yousefi (2014:97-98) state that metacognition is a tool that optimises personal skills, attitudes and behaviours. Employed as a strategy, it turns knowledge into professional conduct via thinking processes which maximise problem solving abilities and it becomes an indispensable characteristic for an entrepreneur (Filho *et al.* 2017:1-2). The relationship between metacognition ability and such a task as entrepreneurial entry is related and significant (Cho & Jung 2014:75; Haynie *et al.* 2012:255), qualitative-wise (Schaefer 2019:183-184). Thus, metacognition can help explain the conversion of new information into novel knowledge and extend the understanding of the cognitive factors influencing entrepreneurial decision-making.

H₃: Vision, independence and need for achievement are related to metacognition.

In conclusion, examining social networks, heuristics and metacognition in tandem can lead to synergies when the combined influences on entrepreneur's decision making are used to model the steps leading from intrapreneurship into entrepreneurship. The question to ask, therefore, is "how do these variables influence the transition of the intrapreneurs into entrepreneurship?"

In furtherance of the decision-making discourse, the mental power as reflected in entrepreneur's thinking process is dependent on the effects of the various cognitive elements on the intrapreneur's decision-making, not just in transition, but also in a start-up venture until it grows to become an established business.

According to Kerr, Kerr and Xu (2018:1-2), trait theory has proved to be inadequate and research results have been inconclusive. Research into the entrepreneurial mindset therefore needs to be embraced to explore the cognitive behaviour of the entrepreneurs in the pursuit of their vision. The entrepreneurial cognitive model which originates within the concept of the wider cognitive science domain and particularly within meta-cognitive theory should be adopted. Belousova, Hattenberg and Gailly (2020) emphasised the necessity to infiltrate one's cognitive thinking despite the uncertainty. In other words, the linkages between entrepreneurship cognition, thinking and decision-making cannot be ignored when

dealing with either intrapreneurs in a corporate environment or entrepreneurs in their own businesses. Hence, the need to tackle the elements that constitute entrepreneurial cognition to ascertain their impacts on entrepreneur's decision-making processes.

However, in line with the discussion of this article, the research study of Shepherd *et al.* (2015) is helpful in addressing the decision-making process of the employees in relation to the activities of entrepreneurship such as: opportunity evaluation; entrepreneurial entry; and opportunity utilisation. For example, their research supported the impacts of other cognitive factors, such as knowledge and experience, emotional reactions, cognitive scripts, aspirations and attitudes, belief systems among others. All of these factors explain the variance in the assessments of the attractiveness of potential opportunities in each stage of the entrepreneurial journey. However, Shepherd and other researchers were less explicit on how social networking, heuristics and metacognition or their combinations could influence the transition of intrapreneurs into entrepreneurship. In South Africa, however, most peoples' personality traits and mental orientations are reflected in the low level of entrepreneurial activities among small businesses (Preisendörfer, Bitz & Bezuidenhout 2012:11). Hence there is a need to re-consider individuals' mental orientation in their conviction as it relates to their vision, independence and need for achievement which suggests the need for assistance to the entrepreneurs in tackling their own enterprise financially, socially or environmentally.

3. RESEARCH DESIGN AND METHOD

The phenomenon investigated was the influences of cognitive factors on decision-making of the intrapreneurs 'now turned' entrepreneurs in Gauteng province in South Africa. To investigate this, the researcher adopted a mixed method research design. Firstly, the qualitative research was based on an interpretive epistemology which involved an in-depth description of the situations as observed and which viewed the researcher and the subject as inextricably connected (Bernard 2017:3-4). This generic design was considered most suitable because the researcher had a body of previous knowledge pertaining to the phenomenon under investigation (Percy, Kostere & Kostere 2015:78). Thus, relying on previously studied literature the research questions were developed. Secondly, the quantitative part of the research design adopted a positivist paradigm. This paradigm used a deductive approach where theories are tested, and hypotheses were generated. This researcher adopted a mixed method research design. and allowed the collection of in-depth information which was analysed using thematic analysis (Polit & Beck 2012:516).

3.1 Study population and sampling strategy

The units of observation were comprised of intrapreneurs 'now turned' entrepreneurs in the Gauteng province. Participants were identified through the researchers' networks with a focus on the formal finance and business services sector including finance, marketing logistics, and travel and tours agencies. Johannesburg and its environs in Gauteng was the focus area because of its metropolitan nature for different kinds of businesses. Participants had at least 42 months in their employment experience and in their currently owned businesses. Interviews and questionnaires lasted about 45 minutes and were conducted over a space of three months. While 100 questionnaires were dispatched to further strengthen the quantitative outcome, 42 were received but only 31 were well administered which was the sample size for this research. Out of this, 11 participants were interviewed until no new patterns of information were identified (Merriam & Tisdell 2015:101). Selected entrepreneurial cognitive factors were outlined around which the questions were developed.

3.2 Data analysis

The semi-structured face-to-face interviews enabled the collection of in-depth facts from participants (Rowley 2012:260-161). Minimal research exists in South Africa regarding the cognitive reasons which influence intrapreneurs transition into entrepreneurship. The interviews therefore promoted the desirable information required and reduced the inconclusiveness when a quantitative approach alone is adopted (Creswell 2014:218). A pilot test was conducted with two (2) participants that met target population criteria for both research instruments (Turner 2010:757). The pilot test elicited the information this research was targeting and a debriefing was initiated.

Whilst meeting the ethical requirements of the research institution, the interview guide also had the capacity to generate in-depth responses that were unbiased (Creswell 2014:226). Furthermore data, with verbatim quotes, had adequate contexts which were interpretable (Patton 2015:4).

Interviews were audio recorded and were transcribed shortly after each session. The data were collated and underwent a process through which the interview recordings and the transcriptions were re-analysed to ensure a holistic understanding. They were then coded and analysed to understand participant's responses to each predetermined theme and to synthesise and interpret the volumes of data meaningfully (Lapadat 2010:926). Atlas.ti was used to explore the connections between themes within participant's data as well as the ideas/situations, results and key observations. This became the next step in the data reduction so no specific tables directly from the software were included in this analysis.

The instrument was based on scales from similar studies, as using existing scales reduces the risk of low external validity (Cooper & Schindler 2014). A five-point Likert scale was used, with scores ranging from 1 to 5 where 1 denoted strongly disagree and 5 denoted strongly agree.

While the independent variables were social networking, heuristics and metacognition, the dependent variables remained entrepreneurship as represented by vision, independency and need for achievement. The questions were asked as to what extent these cognitive elements impacted on transition towards entrepreneurship.

A total of 72 items were used to operationalise the constructs and to measure the participant's entrepreneurial journey. Data used for this study were collected via a structured questionnaire from the intrapreneurs 'now turned' entrepreneurs. The data were captured, cleaned and imported into the Statistical Package for the Social Sciences (SPSS). Frequency tables and descriptive statistics were produced to summarise the data and analyse their properties (Bernard 2017). The Chi Square Test and Principal Component Analysis (PCA) were used to examine the relationships between the variables (social networking, heuristic and metacognition) and corresponding p values while ascertaining the loading factor for some of the items which formed a construct (Cooper & Schindler 2014). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity were applied. The KMO is a measure of how suited data are for Factor Analysis and shows the proportion of variance in the variables that might be caused by underlying factors. The KMO values between 0.8 and 1 are generally taken to confirm that a factor analysis may be useful with the data. In this research, the KMO was 0.849 indicating that factor analysis was useful in this research.

The key elements that had an effect on the decision-making process were extracted. The evaluation process of the research, subsequently, revealed the variations in the way the various elements of cognition influenced entrepreneurs at a different stage of business growth.

4. QUANTITATIVE FINDINGS AND RESULTS

Demographic data were collected and included location, age and level of qualification, type of industry and areas of expertise. A total of 45% of the participants were based in Johannesburg, the economic hub of South Africa with the lowest 3.23% located in Soweto, a poverty dominant area in the Gauteng province. A total of 39% of the participants were within the age range of 41-45, while the youngest group was aged between 25-30. In total 55% of the participants had post graduate qualifications, while 45% were degree and

diploma holders. Most participants (77%) were from the business services industry consisting of merchandising, logistics, travel and tourism, while 23% were from financial services. None of the businesses were less than 42 months in operation while all the business owners had more than 42 months in their former employment.

4.1 Validity and reliability testing

The reliability statistics for Cronbach's Alpha was 0.894, above the minimum benchmark of 0.7 which showed satisfactory internal consistency with the sample size of 31 participants.

Table 1: Descriptive statistics (frequency) of dependent variables (vision, independency and need for achievement)

Dependent variable (represented entrepreneurship)	% Disagree	% Neutral	% Agree
Vision	3.2	6.5	90.3
Independence	6.5	9.7	83.8
Need for achievement	3.2	6.5	90.3

Source: SPSS report

Table 1 shows that the intrapreneurs agreed that the ultimate expectation in becoming an entrepreneurship is driven by their vision (90.3%), desire for independence (83.8% and the need for achievement (90.3%). Hence, in this article, entrepreneurship is represented by their vision, independence and the need for achievement.

4.2 Descriptive statistics (frequency) of selected cognitive factors

The descriptive statistics in Table 2 below shows the frequencies of each cognitive factor (social network, heuristics and metacognition) in each of the entrepreneurship process such as Opportunity evaluation (OE), Entrepreneur entry (EE), and Opportunity utilisation (OU). This include Decision-maker characteristic (DCM)

Table 2: Descriptive statistics (frequency) of independent variables

Cognitive Factors	OE	EE	OU	DMC
Social network	58.1	51.6	64.6	67.7
Heuristics	32.3	32.3	71.0	71.0
Metacognition	35.5	32.3	61.3	48.4

Source: SPSS report

In Table 2 as shown above, social network was prominent as the leading element of influence among the three (3) chosen elements in the stage of opportunity evaluation and entrepreneurial entry. However, other elements passed the average level in opportunity

utilisation with heuristics at 71%. Under decision maker characteristics, heuristics recorded 71% and metacognition 48.4% which was below average.

4.2.1 Chi Square Tests for valid cases

To determine the existence or absence of relationships, Chi-Square Tests were conducted at 5% level of significance considering two variables at a time. The following hypotheses were tested:

H₀: Vision, independence and need for achievement are not related to social networking.

H₁: Vision, independence and need for achievement are related to social networking.

The same hypotheses were considered for heuristics and metacognition, and the null hypothesis was rejected when the *p*-value was less than 0.05 (or 5%) in favour of the alternative hypothesis.

The Table 3 below provides the summarised Chi-Square Test results of the relationship between entrepreneurship (as represented by vision, achievement and need of achievement) and each cognitive factor (social network, heuristics and metacognition) in each stage of the entrepreneurial journey (depicted by opportunity evaluation (OE), entrepreneurial entry (EE), opportunity utilisation (OU) and decision maker characteristics (DCM)).

Table 3: Results of the Chi-Square Tests of the relationships between vision, independence and need for achievement and each selected cognitive factor in the different stages of the entrepreneurial journey

Cognitive Factors (OE)	P value	Significance level
Vision versus metacognition	0.030	This implies that vision is related to metacognition. The $p < 0.05$ value shows that the relationship is statistically significant.
Independence versus social network	0.038	This implies that independence is related to social network. The $p < 0.05$ value shows that the relationship is statistically significant.
Achievement versus social network	0.034	This implies that achievement is related to social network. The $p < 0.05$ value shows that the relationship is statistically significant.
Independence versus Heuristic	0.000	This implies that independence is related to heuristics. The $p < 0.05$ value shows that the relationship is statistically significant.
Achievement versus social network	0.011	This implies that achievement is related to social networking. The $p < 0.05$ value shows that the relationship is statistically significant.

Source: SPSS report

Based on Table 3, the p values of vision, independence and need for achievement and each selected cognitive factor (social network, heuristics and metacognitive) are related in each stage of the entrepreneurial journey as depicted by opportunity evaluation, entrepreneurial entry, opportunity utilisation and decision maker characteristics. For example, entrepreneurs' drive into entrepreneurial activities is influenced by social network with a p value of 0.038. This implies that the higher the level of networking, the higher the performance of the SMMEs business owners (Mlotshwa and Msimango-Galawe 2020; Pratono 2018; Panda 2014). In essence, from Table 3, vision, independence and need for achievement versus heuristics and metacognition were related.

4.2.2 Principal Component Analysis (Factor analysis)

Principal Component Analysis (PCA) is a technique used to highlight variation and bring out strong patterns in a dataset. It is used to make data easy to explore and visualise. While PCA defined the total variance factor analysis outlined the correlations between the variables. Table 4: KMO and Bartlett's Test below showed the KMO value indicating that factor analysis may be useful in this research.

Table 4: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.849
Bartlett's Test of Sphericity	Approx. Chi-Square	298.713
	Df	153
	Sig.	.000

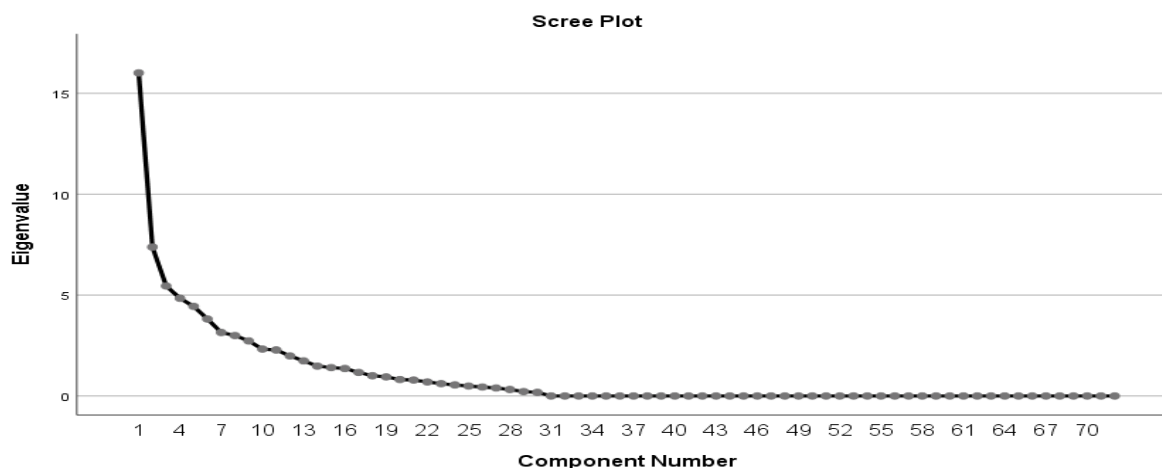
Source: SPSS report

Table 4 shows the Kaiser-Meyer-Olkin (KMO) measure of Sampling Adequacy and the Bartlett's Test of Sphericity. The KMO is a measure of how suited data are for Factor Analysis and it shows the proportion of variance in the variables that might be caused by underlying factors. The KMO values between 0.8 and 1 are generally taken to confirm that a factor analysis may be useful with the data. It means that the sampling for this research is adequate. In this research, the KMO was 0.849 indicating that factor analysis may be useful.

In addition, Bartlett's Test of Sphericity evaluates whether the correlation matrix is an identity matrix, and if the variables are unrelated and therefore not suitable for factor analysis. In this research, the Bartlett's Test of Sphericity had a p -value of 0.000 which is less than 0.05. This shows that the correlation matrix is not an identity matrix meaning that a factor analysis was

useful in this research. Because of these results a factor analysis was conducted as it was useful to reduce the variables considered in this research (Field 2013).

Figure 1: Scree plot



Source: SPSS report

Figure 1 above is a scree plot which shows that in total 18 out of 72 factors were extracted using the PCA method. These factors met the cut-off criterion for the extraction method which required extracting factors that had eigenvalue greater than one (1).

In Table 5 below the three (3) selected cognitive factors examined in this article emerged from the PCA, with valid and reliable scales. The three (3) factors were first and second, the social network and heuristics nexus which represents questions about the influence of the social network and heuristics nexus on the intrapreneurs ‘now turned’ entrepreneurs decision-making ability. Thirdly, metacognition which represent questions about the influence of metacognition on the intrapreneurs ‘now turned’ entrepreneurs decision-making ability.

Table 5: Rotated Component Matrix^a

Construct	Items	1	2
Social network and Heuristics nexus	Social network in Oppo. Evaluation	.733	
	Social networks in Entrep Entry	.738	
	Self-perception in Opp. Utilisation	.598	
	Social network in Opp. Utilisation	.814	
	Heuristic in Opp. Utilisation	.773	
	Self-perception in a Decision Maker	.490	
	Social network in a Decision Maker	.753	
	Heuristic in a Decision Maker	.808	

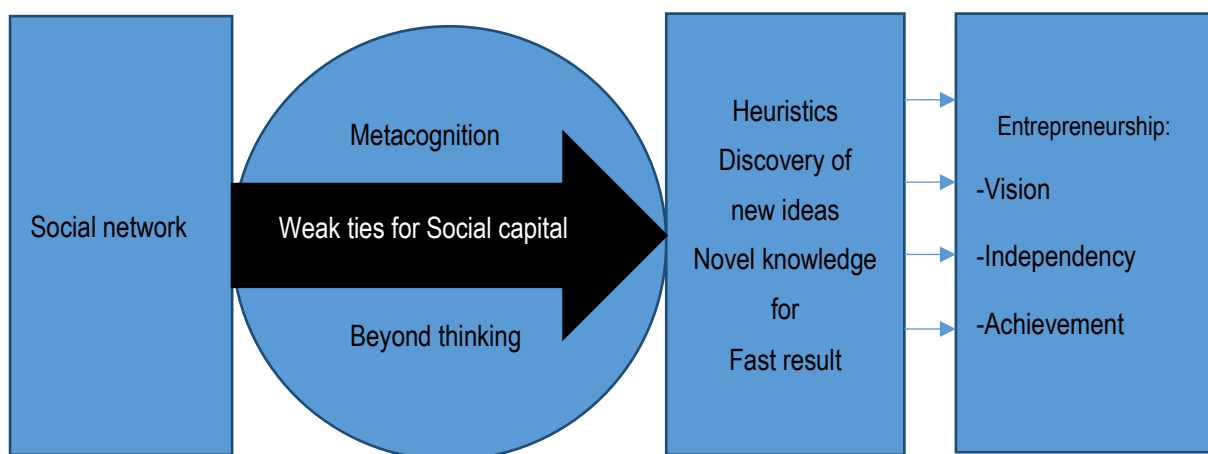
Construct	Items	1	2
Metacognition	Metacognition in Opp. Evaluation		.811
	Metacognition in Entrep Entry		.811
	Metacognition in Opp. Utilisation		.779
	Metacognition in Decision Maker		.748

Source: SPSS report

Previous literature on social network theory (Aladejebi 2020; Chimucheka, Chinyamurindi & Dodd 2019), heuristics (Sahai & Frese 2019; Smolka 2019) and metacognition (Kim & Lee 2018) aligned with this article. There is however, a new term for two (2) factors out of the three (3), while the number of items converging to produce each of these factors is not the same, as shown in Table 5 above. In other words, even though three (3) constructs emerged, the items that constitute each factor are not the same.

The validity and reliability of each of the factors were supported with statistics, where the social network and heuristics nexus had 8 items; metacognition had four (4) items. These were excellent results, as the Cronbach's Alphas were all greater than 0.7 and had more than three (3) items each (Field 2013). All the analysis after the PCA and the reliability tests focused on the three (3) constructs of social network, heuristics and metacognition. In summary, participants interpreted some of these items as measures of 'social network and heuristic nexus', 'metacognition'. Figure 2 below is the proposed conceptual model that synchronises these three (3) cognitive elements.

Figure 2: Proposed conceptual model linking social network, heuristics and metacognition



Source: Author adaptation

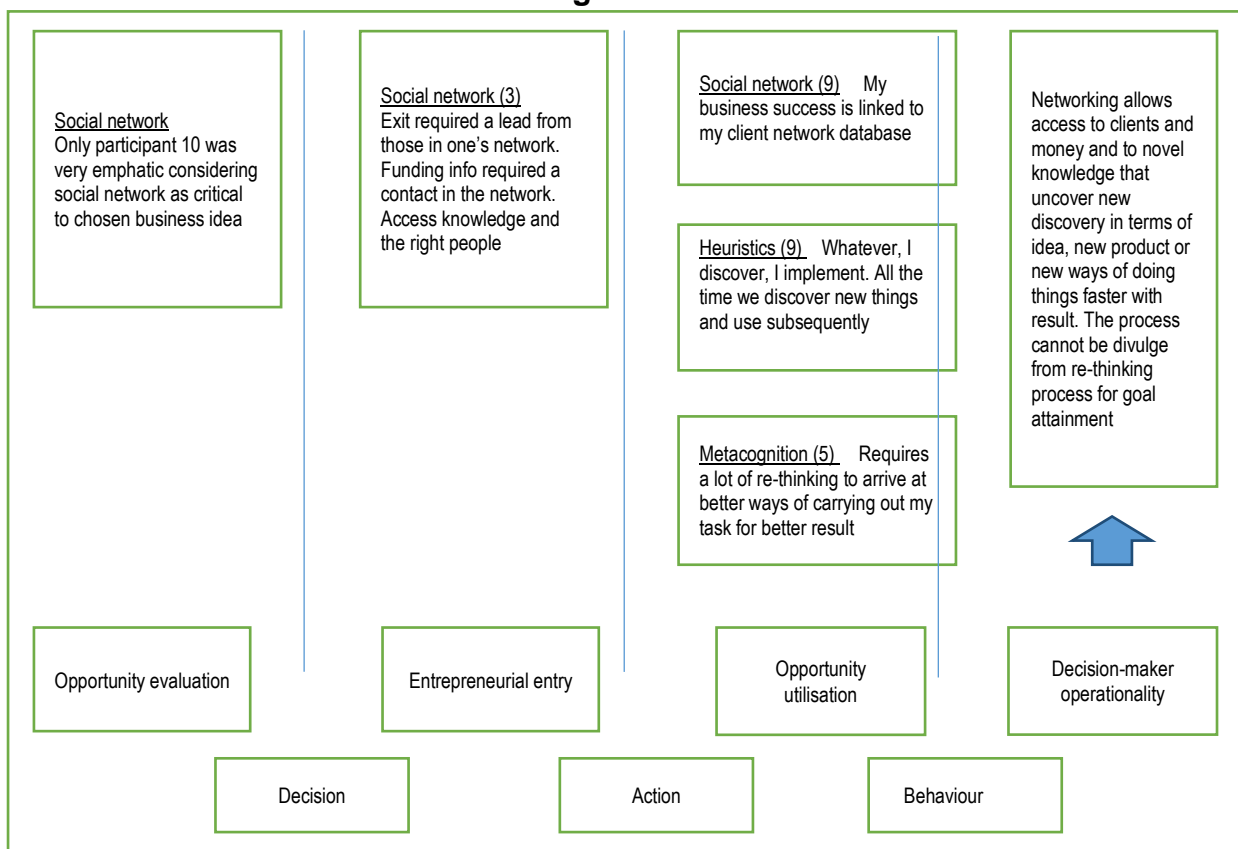
Figure 2 above explains the synergy that exists between social network, heuristic and metacognition for the benefit of entrepreneurial stakeholders. In a network, entrepreneurs

expectation is to tap others mental abilities to seek for new ideas/knowledge that could be leveraged upon to strengthen one’s own business. If the networks are too strong, information will only be confined within that same membership. However with weak social ties, useful information could be accessed easily to promote one’s own business. Hence, through metacognition, ways to discover new ideas and who to approach become such entrepreneurs’ priority, all with a view to tackling business performance and growth related matters. This synergy further strengthens the entrepreneur’s vision, independency and the pursuit of achievement which is the whole essence of transition into entrepreneurship.

5. QUALITATIVE FINDINGS AND RESULTS

This section starts with the summary of the cross case analysis of the participants. It reveals the social network, heuristics and metacognition influences on the decision towards entrepreneurship as shown in Figure 3 below. Thereafter, the outlined themes and corresponding responses are discussed in further detail, which is bolstered with descriptive quotations and linkages to the literature.

Figure 3: Summary of responses to the influences of social network, heuristics and metacognition



Source: Own adaptation

Figure 3 above simply confirmed the relevance of the three selected cognitive factors (social network, heuristics and metacognition) in modelling intrapreneurship towards entrepreneurship.

5.1 Cross case analysis

Although, the participants interviewed have many common perceptions of the outlined cognitive factors, there are crucial differences as well. As a result, the researcher developed a pattern or framework that explains how their decisions are being influenced by each element. This exercise scrutinised the participant's day to day activities in their entrepreneurial journey to date.

5.1.1 Opportunity evaluation: Cognitive factor -Social network (1)

Only Participant 10 was very emphatic in considering social network as critical to their chosen business idea *"So your social network plays a very big role. People that first of all, be your client will be people that know you, personally and professionally that do not need to see you in an elaborate office to engage. They engaging you because they know you and that you have the experience based on what you have done and that was my storyline."*(27.11). Other participants did not mention social network at this stage.

5.1.2 Entrepreneurial entry: Cognitive factor -Social network (3)

Participants 3, 5, 6 agreed to social network having played a significant role in disengaging, *"in my case, social network or networking played a major role. Where to get funds and where to start and how to start the business requires a lead from those in your network"* (18.39). However participant 6 considered 'social network' at this stage as the most important *"for me social network is the most important. You can have the knowledge but if you don't have the network, network gives you opportunity to have access to people. So nowadays they call it relationship capital. If you don't have it you cannot succeed so that is the reason I think the most important element is social network"* (22.15).

5.1.3 Opportunity utilisation: Cognitive factors - Social network (9); Heuristics (9); and Metacognition (5)

Social network (9)

Nine participants consented to the important influence of social network on entrepreneur's decision when dealing with crucial issues that impact their business performance and sustenance. *"for me social network is the most important. You can have the knowledge but if you don't have the network, network gives you opportunity to have access to people. So*

nowadays they call it relationship capital. If you don't have it you can be able to succeed so that is why I think the most important thing is social network" (22.15)

"I have a very strong network base and I have been developing this over years because I know that the key to my business success is linked to my client network database, just like any other elements you could think of. Social network is extremely important when you are working with people or dealing with people on a daily basis except your business is about computer alone."(28.33)

Heuristics (9)

With the exception of participants 3 and 8 whose businesses already had standard processes or procedures, others devised an efficient way of doing business which invariably added value to their product or services, clients, employees and the organization as a whole in terms of cost reduction and time wastage *"whatever I discover, I tried to implement to add value and achieve better result" (20.50). "So it is important to have innovation element of heuristic because once you are innovative, then you create value for your business. So you can assure about your business, business is about getting more customers. So the more you able you able to scale your business and be innovative, then you can then succeed" (22.49).) "all the time we discover new things, ...There are some things you do not envisage; then you find out how to do in a much better ways"(28.37)..*

Metacognition (5)

Participant 8 indicated his inclusion of the re-thinking process in reviewing his business activities from time to time *"...having got 3 year experienceyou don't only think right but you monitor your thinking process to produce the right decision at any given assignment and time' (24.62), however participant 9 underscored the importance of re-thinking whenever she gets a brief from her client before embarking on the required task "So what I do in this process is to assess each business activity to know what and how to address these different challenges facing the businesses. This definitely requires a lot of thinking and re-thinking before you could arrive at better ways of carrying out such task for a better result" (26.56), Participant 10 says "And your metacognition, you must constantly be aware of your thought and of what you are capable of doing and the environment also, you must constantly be aware because a business does not exist in isolation. if you are disconnected from your environment, it is dangerous for a business..... So you must re-think to respond to your environment."(27.48).*

5.2 Difference in findings among intrapreneurs 'now turned' entrepreneurs

The data analysis revealed incremental differences, where 10 participants did not consider social network and none considered heuristic and metacognition in the opportunity evaluation and entrepreneurial entry stage but this was mostly considered at the opportunity utilisation stage. However, it was noted that some entrepreneurs were not aware of the concept of heuristics and metacognition but realised it was in use in their day to day business decision-making process. Nevertheless, nine (9) out of eleven entrepreneurs consented to the influence of social network and heuristics in their day to day activities, hence the understanding that social network and heuristics are not exclusive to certain intrapreneurs 'now turned' entrepreneurs in Gauteng province in South Africa. Metacognition was unconsciously in place in their entrepreneurial thinking but they did not take cognisance of it.

6. DISCUSSION

The objective of this study was to investigate the influence of cognitive factors including social network, heuristics and metacognition on decision towards transiting into entrepreneurship. A direct and significant relationship was shown to exist between social network, heuristics and metacognition through the use of bivariate correlation and chi square testing. The social network and heuristics nexus emerged as a single construct using PCA. This renamed construct better explained the greater impacts of these factors in modelling intrapreneurship towards entrepreneurship and how the combined elements, inherent in the intrapreneurs 'now turned; entrepreneurs, can empower their mindset in South Africa. Qualitative results revealed that the entrepreneurs consented to the influence of social network, heuristics and metacognition on their decision making ability but at different degree at each stage of their entrepreneurial journey.

6.1 The key findings

Results for both quantitative and qualitative approaches agreed that social network, heuristics and metacognition influenced the entrepreneurs as it strengthened their vision, independency and the need for achievement. However, the reality of social network being a transition influencer on entrepreneurs was not confirmed in the article reviewed by Shepherd *et al.* (2015). Nevertheless, networking has an influence on SMEs (Mlotshwa & Msimango-Galawe 2020; Protana 2018) as the *p* value was positively significant, which invariably related to the behaviour of the active element of the entrepreneurship. In relation to social ties, entrepreneurs with a social capital instinct are bound to access new information which leads to new discoveries or new ways of doing things. The findings in this study were

supported by the research by Bruch and Feinberg (2017) which showed that social network impacts entrepreneur's decision-making process. In the submission of Mlotshwa and Msimango-Galawe (2020), entrepreneurs are low on maintaining business relationships on the networks, yet they deem social ties as an important component of their business activities. In this study, however, the degree of social ties varied from entrepreneur to entrepreneur but was significant in each decision stage.

From the qualitative findings, while some entrepreneurs networking acumen play a major role in the opportunity utilisation stage few entrepreneurs felt that without their strong networking they would not have ventured into their own businesses. For example, two (2) entrepreneurs pursuing similar businesses differed on the significance they placed on social networking as one depended on referrals while the other embraced networking to gain clients. The qualitative findings revealed that the social ties of the entrepreneurs paved the way for knowledge that placed them ahead of their contemporaries in terms of new discoveries that promoted quick results. This revealed the degree of individual social capital which is instrumental for decision-making. Quantitative data revealed that entrepreneurship was not only represented by vision, independence and need for achievement but related to social network and heuristic. Furthermore, the PCA showed a similar outcome wherein a cluster of items formed a new construct named 'social network and heuristics nexus'.

According to Haynie *et al.* (2012), metacognition assists in better understanding the cognitive factors that influence entrepreneurs' decision-making. In essence, metacognitive ability is a tool that could reduce the supposed "knowledge deficit" and facilitate effective entrepreneurial decision-making. In this study, the descriptive statistics suggest that metacognition becomes relevant at the opportunity utilisation stage. Qualitative data revealed that metacognition is new to most of the entrepreneurs, but the concept is unconsciously adopted in the day to day thinking process of all engaged activities for a well informed decision. In other words, the process of re-thinking (metacognition) affects the entrepreneur's vision, independence and need for achievement. Furthermore, the PCA showed a similar outcome wherein a cluster of items formed a new construct named metacognition. The findings of this article, therefore are consistent with social network in Mlotshwa and Msimango-Galawe (2020) and Pratono (2018); with heuristics in O'Brien, Folta and Johnson (2003) and Blumenthal-Barby (2016); and with metacognition in Akther, Masroor and Misbauddin (2020), Cho and Linderman (2019), Schaefer (2019) and Cho and Jung (2014).

6.2 Strengths and limitations

In addressing the limitations of the current and similar research, it is concluded that most literature that deals with the outlined cognitive factors focuses on one and not a combination of factors as was addressed in this study while most are analysed using descriptive statistics. Focusing on this approach causes variations in the conceptualisation of each cognitive factor which makes the respondents interpret each cognitive factor as one type. However, the qualitative approach searched for more detailed information that spoke to the understanding of the subject matter. By further investigating each cognitive factor (Zhang, Fan, Zhang & Zhang 2019) demonstrated that factors are vital living organisms and are subject to further development.

This study considered demographics but did not ascertain their influences on the transition to entrepreneurship. This should be considered in future research. Similarly, other cognitive factors not included in this study could as well be researched using the same unit of analysis. This would assist to better appreciate intrapreneurs transition into entrepreneurship on the basis of their vision and independency and the need for self-achievement as represented in entrepreneurship. It would further assist to better understand entrepreneurs and provide unique support that could ameliorate their unique challenges and promote the creation of more wealth and job opportunities.

6.3 Implications and recommendations

This study has practical implications for the big organisations in the finance and business sector and by extension all other sectors within the SMMEs businesses. This includes entrepreneurs, policy regulators, government, interested stakeholders, business associations and suppliers, who desire to promote entrepreneurship via social networking, heuristics and metacognition in Gauteng province and South Africa through entrepreneurial business development activities. Furthermore, the outcomes of this research support the use of periodic awards for entrepreneur's motivation.

Tendai (2013) posited that social ties help business owners to negotiate large discounts with their suppliers through bulk purchasing which enhances access to trade credit by business owners. Heuristics and metacognition are fundamental in problem solving (Akther *et al.* 2020), influence learning processes (Riemer & Schrader 2020) and help individuals to explore their own thinking strategies, having their independency and responsibility to build their own knowledge (Filho *et al.* 2017). Networking enabled access to people with different and unique business ideas which could facilitate new and better ways (heuristics) of doing

business via re-thinking process (metacognition) which strengthened individual perceptions about self and businesses.

Previous literature and the findings of this study show that the selected cognitive factors can contribute to the entrepreneur's success (Wooldridge & Cowden 2020; Anwar & Shah 2018; Filho *et al.* 2017). Owners of businesses should thus engage in the principle of social ties to enhance their businesses. Adopting the proposed conceptual model above, these factors should become a valuable tool for entrepreneurs to create unique businesses in the face of emerging and global competitiveness. Based on the findings of this study, some recommendations are meaningful, which may ensure the impact of social ties, heuristics and metacognition on intrapreneurs 'now turned' entrepreneurs to become successful business owners.

While this research has made a significant contribution in understanding the effect of cognitive variables in the decision to transition into entrepreneurship, there are some limitations which lay the foundation for future research. The data for this study were only collected from the Gauteng province, the economic hub of South Africa; therefore, future research should broaden the scope to include all provinces of the country to ascertain whether the findings could apply to a larger population of SMMEs owners. Furthermore, future research should investigate other types of cognitive elements and develop scales that will explicitly differentiate them and ascertain their impacts in modelling intrapreneurship towards entrepreneurship.

7. CONCLUSION

The purpose of this article was to investigate the influence of different factors from the cognitive domain which impact transition into entrepreneurship. The findings here revealed a significant relationship between entrepreneurship as represented by vision, independency and need for achievement as dependent variables and the outlined cognitive factors in each stage of the entrepreneurial journey. Accordingly, all these factors open up trends that are beneficial to entrepreneurs and the success of their businesses. The business world is dynamic for competitiveness, as disruptive mechanisms become the mindset of new business entrants. Hence, conscious engagement with other stakeholders is needful for a novel knowledge that could birth new business concepts with accrued gains for business sustainability. These findings support the argument that relationships with direct stakeholders increase accesses that are beneficial to the business objectives (Moller 2013).

Future studies can consider other cognitive factors and possibly widen the scope by investigating other sectors of the Gauteng economy to allow for deeper insights into the relationships between cognitive factors as they modelled intrapreneurs into successful entrepreneurship. The vision and independent nature of every entrepreneur to be a boss of their own (Aina & Solikin 2020) needs to be supported through cognitive factors based workshops.

Furthermore, the study revealed that the action and performances of entrepreneurs at each stage could be explained by the likely changes in the cognitive factors adopted.

The findings of this study suggested that the more the entrepreneur thinks entrepreneurially, the better it affects individual entrepreneur's way of doing things, and reflects positively in their business performances. Hence, the need exists to further investigate what could bridge the unforeseen gap between the entrepreneurs in the way they think or behave and the associated business performances. These findings contribute to the current literature that has so far produced inconclusive observations by showing that more emphasis on the awareness, understanding and application of the various cognitive factors is needed for further research to be conducted so that reliable scales are used and valid data are subsequently collected for further use.

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