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Researching entrepreneurship from a cognitive perspective: A focus on necessity entrepreneurs in the Johannesburg area

Boris Urban

Wits Business School, University of the Witwatersrand, 2 St. David's Place, Parktown, Johannesburg, 2193,
P. O. Box 98, Wits, 2050, South Africa. E-mail: boris.urban@wits.ac.za. Tel: +2711 717 3762.

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Based on the prevalence of necessity-motivated entrepreneurial activity in Africa, this study investigates attitudes towards enterprising and cognitive styles of this category of entrepreneurs. Although, most studies on necessity entrepreneurship tend to focus on structural obstacles to explain the systematic failure of entrepreneurs, this paper argued that enterprising determinants might be more agency-orientated. Research about attitudes and cognition requires researchers to pay strict attention to the tenants of human agency. After contextualising the study, more than 400 necessity entrepreneurs operating as informal traders in the Johannesburg area were surveyed. Statistical analyses were performed using correlation and regression analysis to understand the relationship between the cognitive styles and attitudes towards enterprising. The empirical evidence ensuing from this study finds a positive and strong relationship between the knowing, planning and creating cognitive styles and a favourable attitude towards enterprising. Based on the results it seems that policy makers that wish to encourage enterprising among necessity entrepreneurs should not only focus on external support factors but also aim to enhance cognitive styles commensurate with favourable attitudes towards enterprising.

Key words: Necessity entrepreneurs, cognitive styles, attitudes.

INTRODUCTION

Economist, Amartya Sen's criticism of the reliance, in welfare economics, on incomes and wealth as the only indicators of human development suggests that although incomes, wealth and even utility should not be entirely discounted, they cannot fully reflect human development. Human development, according to Sen, is about the expansion of people's positive freedoms (Sen, 2000). These freedoms are also described as capabilities and are expressed as the need for a conversion factor to increase capabilities in poor countries and in turn to increase entrepreneurial activity. Put another way, capabilities are what people are free to do and achieved functioning is 'what they do' (GriesandNaudé, 2010). Entrepreneurship can be considered functioning because it relates to how people work, and it can be valued.

Although entrepreneurship can be a function, it should not be assumed that this is always the case. In this instance, Sen (2000) provides a perspective that is often

overlooked: That human development is inconsistent with a situation where people do not value entrepreneurship. When they are forced to be entrepreneurial, they lose their 'agency'. In this case, being entrepreneurial is not a choice, and may not be fully valued. Such a situation may exist where people have no choice but to start their own business because no other labour market option is available. According to the series of Global Entrepreneurship Monitor (GEM) reports, this situation is prevalent in South Africa as well as the rest of Africa where entrepreneurial activity is heavily skewed toward low-expectation, necessity entrepreneurial activity (Autio, 2007; Naude et al., 2008). The relative prevalence of necessity-motivated entrepreneurial activity (that is, entrepreneurs who say they are involved in an entrepreneurial effort to take advantage of opportunity or because they have no better choices for work), provides useful insights into understanding the economic

contribution of these entrepreneurs – who are alternatively termed survivalists. Their contribution is negligible and expected returns are low and intermittent, moreover they display low expectations of growth and job creation, and their motivation is all about personal survival (Morris and Pitt, 1995; Ngiba et al., 2009). Understanding necessity entrepreneurs in the informal sector, as an entrepreneurial space, is subject to some debate. Conventionally, the ‘marginalists’ understand people entering the informal sector as having little other option. This perspective is prevalent in the GEM reports cited earlier. On the other hand, the ‘structuralists’ contend that people participating in the informal sector exhibit strong entrepreneurial tendencies, and more importantly, do so by choice (Yaw, 2007; Numazaki, 2001; Williams, 2007). While this perspective is arguably more contentious, it does underscore the notion that necessity entrepreneurs or informal traders might be seen as innovative, opportunity-driven individuals (ILO, 2002), and indeed, that the informal sector gives rise to a ‘hidden’ enterprise culture which ultimately needs to be harnessed and drawn into the formal economy (Coban and Gules, 2011; Peberdy, 2000; Williams, 2007).

Notwithstanding this shift in conceiving of the informal sector as a fertile space for entrepreneurial activity, very little scientific attention has been paid neither to the entrepreneurial mind-set nor the attitudes towards enterprising among necessity entrepreneurs. Indeed, it is difficult to imagine why survivalists would be immune to market conditions of supply and demand, and fails to appreciate the role of risk and innovation in their businesses especially where resources are scarce and subject to even greater competition under these circumstances (Chisala, 2008). Street traders are linked to financial markets primarily through demand conditions and, as a result of the recent financial crises, experience slower growth and over-trading which translates into lower profits (Cohen, 2010; Olawale and Garwe, 2010).

Although the majority of necessity entrepreneurs would probably like to see their businesses grow, the number of these survivalists who may be considered entrepreneurial and who would like to expand their business toward formalisation is rather small (Ngiba et al., 2009). While micro enterprises or survivalists might have entrepreneurial characteristics, their ability to grow and create employment is restricted by the scarcity of skills, business knowledge and resources (Von Broembsen et al., 2005). In line with the major premise of this paper, when people are forced to be entrepreneurial out of necessity, they lose their agency since entrepreneurship is not fully valued, and under these circumstances the understanding of attitudes towards enterprising is vital. This investigation is relevant not only in South Africa, but in Africa as a whole, where empowerment is not only widely advocated, but also where there is a need to empower individuals to have the potential to be entrepreneurs (Awogbenie and Iwuamadi, 2010).

Effective empowerment would entail fostering enterprising attitudes among individuals, especially for sectors of the population such as women and previously disadvantaged groups who could be perceived as lacking entrepreneurial traditions.

Rationale and aims of study

While there are a plethora of studies focusing on entrepreneurship and small, medium, and micro enterprises (SMMEs) policy, hardly any scientific attention has been paid to attitudes and cognitions among necessity entrepreneurs. Although most studies on SMMEs tend to focus on structural obstacles to explain the systematic failure of entrepreneurs, it is argued in this paper that enterprising determinants may be more agency-orientated. Research about cognition and cognitive processes and styles requires researchers to pay strict attention to the tenants of human agency (Mitchellet al., 2007). By understanding the role of individuals in venture creation (Jiao and Robinson, 2011), which is often cited as the rationale for linking entrepreneurship with cognitive theory (Baron, 2004; Krueger, 2007), it seems logical to assume that entrepreneurship involves human agency, where to be an agent is to intentionally make things happen by one’s own actions (Bandura, 2001). The entire entrepreneurial process unfolds because individual entrepreneurs act and are motivated to pursue opportunities (Gaglio and Katz, 2001; Gartner, 1990; Shane and Venkataraman, 2000).

Researching entrepreneurship based on a cognitive perspective is relevant in developing economies, as cognition is a crucial asset for small business owners struggling to survive in competitive markets (Aldrich and Zimmer, 1986). Moreover, the examination of entrepreneurial cognitive styles and attitudes in a developing market context aids an understanding of entrepreneurial behaviour, as little evidence exists that cognitive patterns and behaviours are salient to entrepreneurs from non-Western cultures (Vecchio, 2003).

The primary aim of this study is to apply a cognitive perspective thus providing a useful lens with which to examine entrepreneur related phenomena. The overall research question of this study is centred on what we can learn about attitudes towards enterprising among necessity entrepreneurs in terms of their predominant cognitive style. More specifically the following research questions are raised:

1. What is the profile of a necessity entrepreneur and what do their businesses look like?
2. What are the attitudes towards enterprising among these necessity entrepreneurs?
3. What is the nature of the different cognitive styles as displayed by necessity entrepreneurs?
4. What is the relationship between the different cognitive

styles and attitudes towards enterprising?

5. To what extent do cognitive styles effect attitudes towards enterprising?

6. What individual and business characteristics influence attitudes towards enterprising?

Consequently, the study is organized to address the research questions by executing the following steps:

1. The contextualisation of the study in the current South African socio-economic milieu provides a detailed setting and a description of the respondents' characteristics and their businesses.

2. By employing a multidisciplinary theoretical framework, relevant literature and theory is reviewed with respect to attitudes toward venturing in terms of leadership, creativity, achievement and personal control. Cognitions and cognitive styles are interrogated and various conceptualizations are investigated.

3. Based on theoretical discussions constructs are operationalized and the research approach together with sampling and instruments are discussed.

4. The data is analysed and interpreted in relation to the research questions.

5. Results and recommendations follow and the study's limitations are addressed.

LITERATURE REVIEW

Contextualizing the study

The informal economy provides an important but poorly understood means by which many South Africans earn a living (Ngiba et al., 2009; Olawale et al., 2010). Research aimed at developing a better understanding of the attitudes of necessity entrepreneurs is important in South Africa, as informal micro-enterprises provide on average half of all economic activity in developing countries. However when compared to formal enterprises these enterprises are unproductive and serve mainly as a social security net keeping millions of people alive, but disappearing over time (La Porta and Schleifer, 2008). Although these small businesses serve a vital social function and help make the poor a little less poor; they do not provide much dynamism (ILO, 1998; La Porta and Schleifer, 2008).

A small, large-scale sector and a large, small-scale sector characterize most African economies. In between is the medium-scale sector, which has been called the 'missing middle' in African economies. Only two per cent of all African businesses have 10 or more employees. The majority are micro and small-scale enterprises that consist of one to three employees, mostly in the informal sector (McDade and Spring, 2005). In South Africa, the informal sector is said to constitute 25% of total employment, and between five and six percent of total

GDP (GPG, 2008; Ligthelm, 2006). According to statistics SA's Labour Force Surveys, a total of 2.5 million SMME's are recorded, reflecting an annual increase rate of six and a half per cent between 1994 and 2006 (SEDA, 2007). The majority of these are black-owned and women-owned businesses currently not able to capitalise on opportunities in the broader economy; these SMMEs tend to exist on the fringe of what has been labelled the first economy (SAIRR, 2007). However, difficulties abound in estimating the size and extent of this sector. Conservatively, the informal sector accounts for some 25% of total employment (GPG, 2008: 51); however, size estimations are confounded by a variety of issues. Moreover, in South Africa there is no conclusive definition on the informal, unregistered, unregulated businesses, which typically include service enterprises, production activities and vendoring. Recent findings show the informal-formal distinction as being useful in disentangling the landscape, but that movement between informal sector categories is not substantial because of the entry requirements of education, capital, business networks, etc (Spring, 2009).

In South Africa, as in many parts of the world, the schism between the poor and the rich is widening and entrenched inequalities act as a major determinant to growth, development, and employment creation (Lopez-Claros et al., 2006). Additionally South Africa has a dual logic economy, where on the one side there is a highly developed economic sector and on the other side one struggling for survival (Maas and Herrington, 2007). These schisms in many ways parallel the necessity-driven and opportunity-driven divide, which are often construed as the motivational 'push-pull' dichotomy, where in developing countries one would expect greater push factors to be prevalent among entrepreneurs. South Africa's early-stage entrepreneurial activity (TEA) index, the primary measure used to compare the rate of new business start-ups among countries was relatively low (5.9%) for 2009 (Bosma and Levie, 2009). The profile of people who are categorized as necessity versus opportunity-driven entrepreneurs in the latest GEM report indicates that in South Africa, approximately 41% of the TEA is necessity-driven and 46% is opportunity-driven (Bosma and Levie, 2009). This ratio of opportunity-driven over necessity-driven entrepreneurship is substantially higher than the average ratio of 2.5 across all GEM countries (Herrington et al., 2008). However, the higher proportion of opportunity-driven entrepreneurship is not borne out by an increase in the TEA index. Moreover, South Africa has staggeringly high levels of unemployment (2007 = 23%) relative to the rest of GEM sample (Herrington et al., 2008). One would expect, therefore, that necessity would serve as a strong stimulus for an increased TEA rate for South Africa. Despite these anomalies the necessity versus opportunity-driven rates are significant indicators of job-growth expectation, innovation and international orientation, when read in

conjunction with high-growth expectation, early-stage entrepreneurs (HEA). South Africa was one of the countries with the lowest HEA rates over the 2004 to 2009 periods. Additionally if one compares opportunity-driven rates and necessity-driven rates of other developing countries, excluding necessity-driven entrepreneurship, South Africa's entrepreneurial activity is still the lowest of those developing countries (Von Broembsen et al., 2006).

Chisala (2008) sites informal SMMEs as one of the solutions to boosting Africa's deprived economies, where entrepreneurship development is often viewed as an intervention mechanism to create self-employment (Awogbenle and Iwuamadi, 2010; Ladzani and Netswera, 2009). Conventionally, the informal sector is seen to encompass those enterprises which are not registered with government authorities and which are essentially survivalist in nature (Dasgupta, 2003; Dongala, 1993; Hart, 1972; Rogerson, 2000). Despite this however, the informal sector is increasingly being conceived of in terms of its entrepreneurial potential (Dasgupta, 2003). De Soto's (1989) seminal work, for instance, provides impetus for this by suggesting that the informal sector provides a rich and fertile space for the emergence of capitalists.

Attitudes towards enterprising (ATE)

The concept of 'attitude' is more dynamic than that of 'trait' as attitudes are responsive to external objects, and are capable of change. An attitude is also a much richer concept by being manifest in three ways: Cognitive (beliefs), affective (emotions), and behavioural (actions) (Athayde, 2009).

The EAO scale (Robinson et al., 1991) was developed to measure attitudes toward four dimensions associated with entrepreneurship: Achievement in business; self-esteem in business; personal control of business outcomes; and innovation in business. More recently, Athayde (2009) develops an ATE test designed to measure young people's attitudes toward a similar collection of dimensions associated with entrepreneurship. Following Athayde (2009) a refined measure for ATE was used which included dimensions of achievement, personal control, creativity and leadership. These dimensions resonate with entrepreneurial research where there is some agreement on the big five personality dimensions, (that is, need for achievement, need for autonomy, locus of control, risk taking, and self-efficacy (Shane et al., 2003; Vecchio, 2003). These ATE dimensions are briefly discussed:

1. The link between entrepreneurs and achievement motivation has been found by several studies (Rauch and Frese, 2000; Vecchio, 2003). Entrepreneurial behaviour has been linked extensively to the need for achievement, based on McClelland's (1961) theory of learned needs.

Entrepreneurs seek independence and are constantly challenging themselves.

2. Personal control can be viewed as a prerequisite for action, and Shapero (1982) as well as Krueger et al. (2000) propose that a "propensity to act" is an essential disposition for new venture creation. Locus of control refers to a generalised belief about the amount of control people have over their own lives (McShane and Von Glinow, 2003). As mentioned earlier, McClelland (1961) proposes that individuals who have a high need for achievement prefer situations in which they feel that they have direct control over outcomes or in which they feel that they can directly see how their effort affects outcomes of a given event.

3. Entrepreneurs seek promising ideas and forge them into profitable ventures. This is accomplished through creative thinking and innovation. Opportunity is created when innovation is creatively applied to business ideas. Entrepreneurs must remain adaptable, open-minded, restless with the status quo, able to learn quickly, highly adaptable, creative, skilled at conceptualizing, and attentive to details (Christensen and Peterson, 1990).

4. In a review of studies on entrepreneurial characteristics Vecchio (2003) argues that entrepreneurship can be viewed as a type of leadership, which occurs in a specific setting (that is, a small business). This argument makes leadership a key dimension in the process of entrepreneurship.

Entrepreneurial cognitions and cognitive styles

Previous research has identified entrepreneurial cognitions to be useful in differentiating between entrepreneurs and non-entrepreneurs (Baron, 2004), while others (Mitchell et al., 2002) find that entrepreneurs, regardless of culture or geographical location, share common experiences in the conceptualization, start-up, and growth of ventures. More recent research reports that entrepreneurs share a similar knowledge structure or script regarding new venture formation that novices, business managers or even non-entrepreneurs would not share (Mitchell et al., 2000; 2007).

Essentially the entrepreneurial cognitions perspective allows researchers to help understand how entrepreneurs think and why they do some of the things they do (Mitchell et al., 2002). The central premise of the cognitive perspective is that entrepreneurial behaviour emerges as a result of the entrepreneurs underlying cognitions. Individuals in decision-making situations typically draw upon scripts or knowledge structures to make decisions to act. Some of these scripts are well developed (expert scripts) while others (novice scripts) are not as fully developed, resulting in information

processing-based thinking errors. Broadly stated, entrepreneurial decisions are the result of motivation and cognitions, the latter including intellect, ability and skills (Baron, 2004; Busenitz and Lau, 1996; Krueger, 2007).

Focusing on individual cognitions brings into the entrepreneurship literature two streams of organisation studies; person-organisation fit and cognitive styles (Mitchell et al., 2007). Cognitive style refers to an individual's preferred and habitual approach to organizing, representing, and processing information (Streufert and Nogami, 1989). Cognitive style is a pervasive dimension that can be assessed using psychometric techniques and describes different rather than better thinking processes (Kickul et al., 2009).

Cognitive styles are also an excellent indicator of entrepreneurial attitudes (Allinson et al., 2000; Sadler-Smith et al., 2000). As individuals approach the possibility of becoming entrepreneurs and think about the different skills required to create a new venture, their cognitive styles may indeed foster some self-perceptions and inhibit others, enhancing different types of self-efficacy (Kickul et al., 2009; Urban, 2010).

An individual's cognitive style may influence the preference for different types of learning, knowledge gathering, information processing, and decision making, many of the critical behaviours with which an entrepreneur is confronted on a daily basis. Kickul et al. (2009) find that individuals with different cognitive styles do not see themselves as possessing equal self-efficacy in all the tasks required for new venture creation, and thus may not only have different motivations to undertake a new venture, but may also be more effective in different phases/activities of the venture process.

Researchers have identified various cognitive style models and also developed their own instruments for assessment, providing unique labels to the cognitive styles under investigation (Shipman and Shipman, 1985). Two qualitatively different cognitive styles are evident among many studies (Nickerson et al., 1985). The first cognitive style is commonly described by the terms analytical, deductive, rigorous, constrained, convergent, formal and critical. The second cognitive style is commonly described as synthetic, inductive, expansive, unconstrained, divergent, informal, diffused and creative. Allinson and Hayes (2000) called this the analysis-intuition dimension. Similar conceptualizations refer to the same dimension, such as analytic-nonanalytic (Kemler-Nelson, 1984), analytic-holistic (Beyler and Schmeck, 1992), and logical-nonlogical (Barnard, 1938).

This distinction between cognitive narrowness and broadness, or rational and intuitive thinking, continues to dominate research on cognitive differences (Hodgkinson and Sadler-Smith, 2003).

Cools and Van den Broeck (2007) identify a three-dimension model and label the styles as knowing style, planning style and creating style. People with a knowing style look for facts and data. They want to know exactly

the way things are and tend to retain many facts and details. They like complex problems if they can find a clear and rational solution. People with a planning style are characterized by a need for structure. Planners like to organize and control and prefer a well-structured work environment. They attach importance to preparation and planning to reach their objectives. People with a creating style tend to be creative and like experimentation. They see problems as opportunities and challenges, and they like uncertainty and freedom. These three cognitive styles are adopted for the purposes of this study and applied to the entrepreneurial domain.

METHODOLOGY

The design for this exploratory study was cross-sectional and survey based, which addresses the research questions in terms of building respondent profiles and examining the relationship between the study variables. Responses were solicited in a manner that allowed for quantitative analysis and items were measured with interval scales. Apart from the respondent's biographical details, the questionnaire surveyed a number of variables measuring their business activity.

Data collection

The sampling frame consisted of informal traders who were attending the 'Grow Your Business' programme, a partnership venture between the University of the Witwatersrand, Johannesburg, and the City of Johannesburg. These respondents operate as informal traders in the Johannesburg area and reside in one of the townships in the greater Johannesburg area, such as Soweto, Alexandria, or Thembisa. Informal activity is pervasive in townships (Bradford, 2007), and most of this activity constitutes single-person operations (Morris and Pitt, 1995).

Some 450 surveys were distributed by individual facilitators during their respective classes, and collected once completed. Of the surveys distributed, 227 were returned of which 126 were usable, serving as the final sample, thus indicating a response rate of 55%. Table 1 presents sample characteristics. The common method of defining SMMEs according to a pre-determined set of thresholds by their number of employees was used, where survivalists typically have no employees (South Africa Survey, 2006/2007). Although no distinct profile emerges, this sample is characterised typically as a 38-year old female, operating a survivalist business from either home or the street, which has been in existence for more than 42 months.

Instruments

Based on an exploratory factor analysis (EFA) previous research has found that the underlying structures of ATE form around four factors: Achievement, leadership, creativity, and personal control (Athayde, 2009). These factors were adopted and measured as multi-item scales for the purposes of this study.

Questions were measured on a 1-5 Likert scale where 1 indicates respondents 'strongly agree' and 5 represented respondents that 'strongly disagree'. Although, these scales are susceptible to the error of central tendency, there is no conclusive support for choosing a scale with less or more points (Cooper and Schindler, 2001).

Based on Cools and Van den Broeck (2007) three-dimensional

Table 1. Sample characteristics.

Variable	Frequency	%
Gender		
Female	79	62.7
Male	47	37.3
Age		
Mean	126	(38 years)
Business classification		
Cooperative	15	12.2
Survivalist	93	73.9
Very small	7	5.7
Small	6	4.9
Medium	5	4.1
Business age		
3 months or less	12	9.5
4-42 months	34	27.0
More than 42 months	80	63.5
Place of operation		
Home	48	36.1
Street	31	23.3
Taxi rank	17	12.8
Other	30	23.8
Registered		
Trading license	57	45.2
VAT	33	26.7
RSC	32	23.7
PAYE	4	3.0
Transaction records		
Cash receipts	64	50.7
Sales per month	27	25.6
Bank deposits, etc.	19	15.7
Creditors	8	6.3
Debtors	8	6.3
Business sector		
Catering and bed/break	41	31.8
Wholesale trade	25	19.4
Community services	18	14.0
Retail services	17	13.2
Transport	15	11.9
Other	10	7.9

model, the three cognitive styles used were the knowing style, planning style, and creating style. The convergent, discriminant and criterion-related validity analyses in their research shows the relevance and usefulness of identifying three cognitive styles,

where they developed a psychometrically sound and convenient instrument, the CoSI, to measure the cognitive style model. The CoSI has a clear factor structure, as examined in a 2-stage factor analytic procedure. EFA suggested a 3-factor solution (knowing, planning, and creating styles), and confirmatory factor analysis (CFA) indicated adequate fit for this 3-factor model. Consequently, this 3-factor structure was used and questions were measured on a 1-5 Likert scale from 1 indicating that respondents 'strongly agree' to 5 where respondents would 'strongly disagree'.

Based on prior evidence of instrument validity for both the ATE and CoSI only reliability was re-tested for this sample. Item statistics were calculated for each dimension and the following CronbachAlpha's were obtained and deemed satisfactory (Cronbach, 1951): ATE (0.72), knowing style (0.83), planning style (0.90), and creating style (0.87).

Statistical analysis

Once the reliability of the instruments was confirmed, various statistical procedures were used to address the research questions. Descriptive statistics were initially calculated and correlational and regression analyses were then performed to examine the influence of the three cognitive styles on ATE.

RESULTS

Diagnostics were carried out to test for normality of data. Results indicate that data was normally distributed since the means, modes and medians for each question were almost equal. The Q-Q plots also supported the normality of the data and the stem-and-leaf plots showed a bell shape with all the significant values for the items less than 0.05.

Table 1 displays sample characteristics and the firm operating context. It is interesting to note that although most of the ventures are survivalist (74%), the majority (64%) have been in operation for more than 42 months, across different business sectors, indicating a certain level of sustainability. These ventures are mostly (42%) registered in terms of trading licences, and some have registered for VAT (33%) and RSC (32%) tax and levies. Additionally they maintain transaction records in the area of cash receipts (64%), sales and deposit records, but keep few transaction records on creditors and debtors. This empirical evidence suggests that these necessity entrepreneurs do display some degree of sustainability and formality in their businesses.

In terms of items measuring the ATE scales, the measures of central tendencies and dispersion (Table 2) reveal that apart from a few items measuring ATE, most item mean scores are closer to the '1 = strongly agree' end of the scale suggesting relatively high levels of ATE among this sample of respondents.

For the CoSI scale, for items measuring each of the different cognitive styles, relatively high mean scores emerge across all three of the cognitive styles. Results indicate that the knowing style, followed by the planning and creating style respectively seem to be the predominant cognitive styles utilized by this sample of

Table 2. Descriptive statistics for attitude towards enterprising and cognitive styles items.

Dev ness	Mean	Std	Skew
I enjoy talking the class around to my point of view	1.70	0.90	1.44
I think I can easily carry my classmates with me when I have an idea.	1.85	0.98	1.42
I enjoy taking responsibility for things in the classroom.	1.84	0.95	1.20
I like taking the lead when working in my group on an exercise.	1.83	0.95	1.38
I enjoy lessons where the teacher tries out different ways of teaching.	1.56	0.95	1.95
Being creative is an advantage in lessons.	1.70	0.93	1.66
I like lessons that really stretch my imagination.	1.72	1.00	1.46
I have a lot more energy than most people at school.	2.24	1.13	0.76
I usually follow the lead of other group members when we work in group.	3.67	1.22	-0.57
I like to get on with things in class rather than be taken through step-by-step	2.47	1.21	0.49
I prefer to figure things out on my own.	2.51	1.30	0.46
Attitude towards enterprise scale score	2.18	0.50	1.28
I want to have a full understanding of all problems.	1.63	1.00	1.96
I like to analyze problems.	1.65	0.84	1.68
I study each problem until I understand the underlying logic.	1.77	0.90	1.76
Knowing style scale score	1.69	0.79	1.72
Developing a clear plan is very important to me.	1.58	0.86	2.11
I always want to know what should be done when.	1.64	0.92	1.82
I like detailed action plans.	1.66	0.76	1.54
I prefer clear structures to do my job.	1.82	1.00	1.60
I prefer well-prepared meetings with a clear agenda and strict time management	1.77	0.96	1.54
I make definite engagements, and I follow up thoroughly.	2.00	0.92	1.02
A good task is a well-prepared task.	1.67	0.92	1.70
Planning style scale score	1.73	0.72	1.92
I like to contribute to innovative solutions.	1.78	0.83	1.63
I prefer to look for creative solutions.	1.73	0.78	1.36
I am motivated by ongoing innovation.	1.76	0.85	1.37
I like much variety in my life.	1.84	0.95	1.37
New ideas attract me more than existing solutions.	1.90	1.01	1.25
I try to avoid routine.	2.31	1.11	0.66
I like to push boundaries.	2.09	1.09	1.09
Creating style scale score	1.91	0.70	1.29

Table 3. Correlation matrix for attitude towards enterprising and cognitive styles.

	1	2	3	4
Attitude towards enterprising scale score	1	0.6204**	0.6918**	0.6838**
Knowing style scale score	0.6204**	1	0.8275**	0.5884**
Planning style scale score	0.6918**	0.8275**	1	0.7123**
Creating style scale score	0.6838**	0.5884**	0.7123**	1

** Correlation is significant at the 0.01 level (2-tailed).

respondents. The aggregate scores for all three styles are all within the '1 = strongly agree' end of the scale.

To explore the relationship between ATE and cognitive styles, correlations were calculated on the aggregate

scores for the different factors. For the correlation matrix (n = 126), in Table 3, the Pearson correlation coefficients are reported with levels of significance denoted.

According to Cohen and Holliday (1998), a multiple

Table 4. Regression summary for dependent variable attitudes towards enterprising scale score $R = 0.743$ $R^2 = 0.552$ Adjusted $R^2 = 0.545$ $F(2, 123) = 75.980$.

	b*	Standard error - of b*	b	Standard error - of b	t(123)	p-value
Intercept			1.153227	0.089613	12.869	0
Planning Style scale score	0.415456	0.085927	0.287623	0.059488	4.835	0.000004
Creating Style scale score	0.387899	0.085927	0.275724	0.061078	4.51431	0.000015

Table 5. Summary of stepwise regression; DV: Attitudes towards enterprising scale score.

	Step - +in/-out	Multiple - R	Multiple - R-square	R-square - change	F - to - entr/rem	p-value
Planning style scale score	1	0.691	0.478	0.478	113.796	0
Creating style scale score	2	0.743	0.552	0.074	20.379	0.000

Table 6. Regression summary for dependent variable: Attitudes towards enterprising scale score $R = 0.266$ $R^2 = 0.071$ Adjusted $R^2 = 0.053$ $F(2, 105) = 4.0206$.

	b*	Standard error - of b*	b	Standard error - of b	t(105)	p-value
Intercept			2.162961	0.086831	24.90993	0
Trading license registered	-0.22268	0.094636	-0.22263	0.094614	-2.35304	0.020483
Years in business >42 months	0.173489	0.094636	0.181044	0.098758	1.83322	0.069603

correlation coefficient of 0.7 or above is considered high enough to be statistically significant at the 0.05 and 0.01 levels. Table 3 indicates that all the coefficients are relatively high, positive and statistically significant. This means that there are significant associations between ATE and the knowing, planning and creating cognitive styles. However, on the other hand the results reveal that the variables seem to be vulnerable to multi-collinearity that is, when some or all the independent variables are highly correlated at 0.80 or more (Cooper and Emory, 1995), as is the case for this sample of respondents. This issue is further addressed in the next area when the regression analysis is interpreted.

The use of multiple regressions allows for the partitioning of variance with correlated predictors, thereby reducing the likelihood of making a Type 1 error. The regression procedure entailed using stepwise regression, where initially the variables that contribute the most to explaining the dependant variable were entered, with subsequent variables included based on their incremental contribution over the first variable and based on the criterion that they were statistically significant. Backwards stepwise regression was used to eliminate variables with insignificant regression coefficients. This procedure resulted in the planning and creating style being regressed on the ATE as the dependant variable. Table 4 provides the regression summary with an $R^2 = 0.552$ interpreted as the two predictors explaining 55.2% of

variance in the dependant variable (ATE). In the ANOVA section an F Value $(2, 123) = 75.980$ is statistically significant ($p < 0.017$). In terms of standardised coefficients the beta weights (b) provide significant t-values at the 0.001 level ($p < 0.001$).

The effect of the entry and removal, step-in and step-out, of each of the predictors is illustrated in Table 5, where planning cognitive style is entered in step 1 and creating cognitive style in step 2.

To try to determine if the predictive power of the regression could be improved, two other significant variables were entered which were the control variables 'trading license registrations' and 'years in business >42 months'. Table 6 provides the regression summary with an $R^2 = 0.071$ interpreted as the two predictors explaining 7.1% of variance in the dependant variable (ATE). In the ANOVA section an F Value $(2, 105) = 4.020$ is statistically significant ($p < 0.023$). In terms of standardised coefficients the beta weights (b) provide a significant t-value only for the 'trading license' variable at the 0.05 level ($p < 0.05$). The effect of the removal, step-out, of the insignificant predictor is illustrated in Table 7, where a small but significant R^2 change is detected (0.041) ($p < 0.05$).

A further examination of the collinearity diagnostics reveals relatively average variance proportions for all the cognitive styles. These diagnostics when read in conjunction with collinearity statistics, not shown due to space limitations, indicate variable inflation factor (VIF)

Table 7. Summary of stepwise regression; DV: Attitudes towards enterprising scale.

	Step - +in/-out	Multiple - R	Multiple - R- square	R-square - change	F - to - entr/rem	p- value
Trading license registered	1	0.203	0.041	0.041	4.578	0.034

values between 0.764 and 0.658. These figures are well below critical values and deemed as acceptable, indicating no incidence of multicollinearity. When the values are 10.0 or more the regression coefficients can fluctuate widely from sample to sample, making it risky to interpret the coefficients as indicators of the predictors (Cooper and Emory, 1995).

Conclusions

The overall research question of this study was to understand attitudes toward enterprising in terms of different cognitive styles. The basic premise was that enterprising among necessity entrepreneurs may be more agency-orientated. Based on the results it seems that policy makers that wish to encourage enterprising among necessity entrepreneurs should not only focus on external support factors and financial support but also aim to enhance cognitive styles commensurate with favourable of attitudes towards enterprising.

The empirical evidence ensuing from this study finds that there are relatively favourable attitudes towards enterprising among this sample of necessity entrepreneurs. Moreover, there was evidence of a positive and strong relationship between the knowing, planning and creating cognitive styles with attitude towards enterprising. In other words all three of the cognitive styles are favourably associated with attitudes towards enterprising as encapsulated through the entrepreneurial dimensions of achievement, personal control, creativity, and leadership.

In practical terms this means that these necessity entrepreneurs look for facts and data in a rational manner (knowing style); they like to organize and control, attaching importance to preparation and planning to reach their objectives (planning style); and they also tend to be creative and experimental, perceiving problems as opportunities and challenges (creative style).

In addressing the extent to which cognitive styles affect attitudes towards enterprising, the regression results reveal that only two of the cognitive styles play a significant role in predicting attitudes towards enterprising, namely the planning style and the creative style. The knowing style has little effect on the attitudes towards enterprising and is not a significant predictor of ATE in this sample of respondents. Individuals with a knowing style tend to operate within the rational, analytic cognitive system, which is in contrast with the uncertainty and challenges that many necessity entrepreneurs face in an

informal trading environment. Research finds that individuals with a knowing style tend to stay within the existing structure when solving problems and seldom make errors. Additionally individuals with a financial job scored significantly higher on the knowing style than did people with sales or marketing job, which typically has more entrepreneurial tasks (Cools and Van den Broeck, 2007).

Reflecting on the results in a broader context it is plausible that circumstances in a country or region inhibit human entrepreneurial agency, not only by excluding the options for wage employment but also by inhibiting agency. This inhibition comes through the effects of the environment on people's self-efficacy (Urban, 2006), and through the effects of deprivation on the inclination, motivation and time people spend looking for opportunities. Banerjee and Duflo (2007) are perplexed by the apparent lack of the poor to perceive opportunities, stating 'one senses a reluctance of poor people to commit themselves psychologically to a project of making more money'. Under such circumstances, it is important to foster enterprising attitudes among necessity entrepreneurs who could be perceived as lacking in entrepreneurial traditions in an informal market context. For entrepreneurship, policies to be consistent with human development will require these policies to increase the value attached to entrepreneurship as functioning (GriesandNaudé, 2010). This study has demonstrated, contrary to popular belief, that necessity entrepreneurs display cognitive styles matching enterprising attitudes. Such research is particularly relevant in South Africa since the number of informal businesses is considerable but their performance is difficult to monitor and their contribution to employment and GDP remains questionable (DTI, 2006).

South Africa's informal sector is dynamic, vibrant and incredibly heterogeneous in nature, incorporating a wide range of enterprises (Van Rooyen and Antonites, 2007), where a transient space has been identified (Devey et al., 2006). This transition represents a moving target where SMMEs move from basic survivalist businesses to more formal entities (Finscope, 2006). Consequently the informal sector gives rise to an enterprising culture which needs appropriate mechanisms and interventions to be converted into the formal economy. Efforts through providing start-up finance, training and skilling will not yield the desired results as long as it does not incorporate the conversion factor necessary to convert existing individual abilities into activities and achievements, thus, increasing individual functioning capabilities (Sen, 2000).

Recommendations to convert necessity entrepreneurs into more formal enterprises include education and practical experience. Education can improve not only an individual's ability to perform a task but also to understand and draw connections between different phenomena (Neisser, 1967). Practical experience with problem solving and interaction with successful innovators can build up competency in the appropriate form of cognitive style.

This study's results should not be interpreted without considering its limitations. Due to the early stage of theoretical development in entrepreneurial cognitive styles, the measuring instruments may have to be adapted to a specific country and cultural context. Additionally this study relied on self-reported survey data and was therefore prone to cognitive and motivational bias, such as the self-serving bias. Future research could focus on the relation between cognitive style and other individual difference constructs and measures that may influence enterprising behaviour.

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