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Entrepreneurial Cognitions and Decision-Making: A Study of Community Participants in the La-Nkwantanang Municipality, Ghana

Marijke A. Adobea Okyireh (PhD)
Faculty of Management Studies, University of Professional Studies, Accra
Email: marijke.okyere@upsamail.edu.gh

Rexford Owusu Okyireh
School of Business – Marketing, Procurement and Supply Chain Department, University of Education, Winneba.
Email: okyirehjoe@yahoo.co.uk

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Abstract

Over the last decade, Entrepreneurial cognitions is gradually receiving attention globally in the entrepreneurship discourse. This is because decisions people make concerning the development of entrepreneurial businesses are key in the performance of the business. The present study examined the relationship between cognitive styles (intuitive and analytical thinking) and entrepreneurial decision-making approaches (causation and effectuation) amongst community participants. Two hundred and seventy-two (272) participants were conveniently sampled from the La-Nkwantanang Municipality in Accra were given questionnaires to assess whether a relationship exist between entrepreneurial cognitions and decision-making approaches. It was observed that both cognitive styles (analytical and intuitive) significantly predicted entrepreneurial decision-making approaches. Demographic factors; gender, education and business experience also influenced the choice of entrepreneurial decision-making approaches (causation and effectuation). Limitations of the study and their implications for future research and practice are discussed.

Keywords: Entrepreneurial Cognitions, Analytical and Intuitive Thinking, Entrepreneurial Decision-making, Entrepreneurship in Ghana.

Introduction

Entrepreneurial discourse is of concern to researchers because it is seen as the engine that propels economic growth and a means of reducing rates of unemployment (Karabey, 2012). Across the globe, studies have found that entrepreneurial activities come with benefits such

as an avenue for young minds to explore creative opportunities and sustaining families (Okyireh, 2018).

The Global Entrepreneurship Monitor (GEM, 2017) show that 7.7% of people venture into new businesses annually however this decision to start entrepreneurial businesses is based on the approach to decision-making for the business. The choice of these decision-making approaches are influenced by factors such as intuitiveness or rational which tend to affect the outcome of the business (Salder-Smith & Shefy, 2004). Hence the need to investigate the determinants of venture creation intentions, issues of job creation and productivity (Busenitz et al, 2003; Dawson & Henley, 2015; Sarasvasthy, 2008).

Entrepreneurial Cognitions and Decision-making

Currently, there are annihilations as to the reasons why individuals venture into entrepreneurial activities. Nevertheless, scholars have advanced that the answer to this question stems from two perspectives: that is either the individual does not possess the information needed to identify the opportunity or the cognitive structures needed to advance it (Businetz & Barney, 2000; Shane & Venkataraman, 2000). From a social psychological perspective, the theory of reason action and planned behavior states that for a behavior (the act of decision-making) to occur, three aspects are involved: attitudes toward the behaviour, subjective norms and the degree of perceived behaviour control (Azjen, 2011). The aspect of attitudes towards the behaviour includes an appraisal of the behavior and its outcomes. This aspect of appraisal implies that the actor should have the appropriate cognitive structures to undertake the activity. Hence the role of cognitions cannot be undermined in the entrepreneurship discourse.

The impact of cognitions in entrepreneurship was initially investigated by scholars as Smith, Mitchell and Mitchell (2009) and Schumpeter (1961). Their main aim was to understand how people discover entrepreneurial opportunities from a cognitive perspective. The end results of these studies over the period led to the term “entrepreneurial cognitions” (Mitchell et al, 2002). Entrepreneurial cognition is the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth. Thus, creating a refreshing change in the entrepreneurial discourse and this serves as an effective tool in probing and explaining how decisions in entrepreneurial business are done (e.g. Mitchell et al., 2002; Okyireh, 2018).

Sanchez-Garcia (2014) posits that the use of entrepreneurial cognitions methods i.e. cognitive styles, causal maps, mental scripts and schemes have shown that processing information about a particular behaviour happens in an interrelated manner and is largely influenced by an individual’s beliefs and ideologies. The present study focuses on cognitive styles, one of the dimensions of entrepreneurial cognitions and this is because it has been widely researched on intrapreneurs in organizations and this has led to varied definitions of the concept. For example, Groves et al. (2011) refer to cognitive styles “as one’s preferred pattern for using mental abilities in addressing daily demands and activities, including perceiving and solving” whilst Ijdens (2015) sees it as the mental structures needed in making decisions on opportunities available to the individual.

Cognitive styles have been reported not to work in a vacuum but with factors such as personality characteristics (alertness, risk preference, self-efficacy) of an individual and environment where he is likely to start the entrepreneurial activity (Ijdens, 2015; Karabey, 2012).

Cognitive styles are broadly categorized into two types: intuitive thinking and analytic thinking (Karabey, 2012). Intuitive thinkers are described as people who acquire knowledge automatically and are more creative but less conformist. Analytical thinkers on the other side prefer an open-ended approach in the process of problem solving (Ijdens, 2015).

Comparing the two, Corbett (2002) argues that successful entrepreneurs possess intuitive thinking patterns though managers of business view analytic thinking as the standard way of making decisions. Similar to these two dimensions, Groves et al. (2011) considers professionals with linear thinking patterns as analytic thinkers, whilst non-linear thinkers are viewed as intuitive thinkers. Amongst the aforementioned dimensions of cognitive styles, it has been reported that entrepreneurs who are successful in their businesses demonstrate more of intuitive than analytical thinking in decision-making compared to hired managers in the same field (e.g. Allison et al., 2000; Blume & Covin, 2005).

According to Allison et al. (2010), cognitive styles are arranged in a continuum as one's thinking can move from one level to another. In some instances, an individual may adopt a middle level approach called adaptive thinking and this is as a result of quasi-intuitiveness; or shifting from analytic thinking to quasi-analytic thinking. Hence, the continuous nature of cognitive styles has been said to play a key role in decision-making for entrepreneurial activities (Sanchez-Garcia, 2014; Groves et al., 2011). Sarasvathy (2008) defines entrepreneurial decision-making as the series of activities and decisions an entrepreneur goes through, leading from one idea or opportunity to a successful venture. The researcher further posits that the approach to decision-making is categorized into two; effectuation and causation. Effectuation involves planning entrepreneurial processes without making a detailed plan whilst causation is the process of developing a detailed plan for entrepreneurial activities (Sarasvathy, 2008). The entrepreneurial decision-making process differs from person to person as this is dependent on factors such as an entrepreneur's life style, preferences, thinking styles, competencies and culture (Paprika, 2010)

Idjens (2015) concluded that cognitive styles adopted by entrepreneurs significantly influence the categories of decision-making mentioned above. This is because individuals with intuitive thinking styles are capable of identifying opportunities but are less capable of planning entrepreneurial activities, and that makes them oriented towards causation. On the contrary, analytical thinkers are less capable of searching for opportunities but are more capable of planning and evaluating activities, thus analytical thinkers are effectuators. Report from studies (e.g. Ijdens, 2015; paprika, 2010) implies that the dynamics of entrepreneurial cognitions are multifaceted and it embraces a complex set of issues such as styles of thinking, culture and business planning strategies and further research will help develop a model for assessing an individual's preparedness for an entrepreneurial career and hence reduce the rates of unemployment in Ghana.

Demographic Variables and Entrepreneurial Decision-making

The decision to engage in an entrepreneurship career is dependent on an individual's age, gender, level of education and business experience (Neneh, 2014). However other studies have shown that demographic factors are also influenced by culture (Shinnar et al., 2012; Bosma & Levie, 2009). For instance, Bosma and Levie (2009) conclude that the rate at which women are venturing into entrepreneurship is twice the number of men. Contrary to this view, other scholars perceive entrepreneurship as a male dominated activity and so men own more businesses than women (Ahl, 2006; Marlow, 2002). Additionally, there exist the perception that young educated people have entrepreneurial intentions compared to old

people (Denanyoh et al., 2015; Ijdens, 2015). Similarly, some studies found that young adult possess high risk capabilities for entrepreneurial activity compared to older people who are mostly risk averse (Kebaili, Al-Subyae & Al-Qahtani, 2017). Wang and Wong (2004) also posit that business experience acquired from family, gender and education were the determinants of entrepreneurial decisions. Although some studies have shown a significant relationship between demographic characteristics (age, education, gender and business experience) and entrepreneurial decisions, there are still controversies. For instance, it has been observed the ability to make causal or effectual decisions is not dependent on age (e.g. Fink, 2015). These controversies suggest that the effects of demographic factors on entrepreneurial decision-making are not stable but dynamic and this warrants further studies.

Literature Review (Theoretical framework)

Bandura (1991) Social Cognition Theory

Bandura's Social cognition theory defines the actions of people as the outcome of three factors behaviour, cognitive and situational factors. According to him, these factors interact operatively and tend to influence each other in a reciprocal manner. For example, a behaviour witnessed can change a person's cognitions. In the same way, people interact with others and gain support from them, which can also influence their way of thinking. In line with this assertion, it has been established that situational factors such as dimensions of cultural orientations: power distance, uncertainty avoidance etc. play a pivotal role in the developing of cognitive structures for decisions on business opportunities (Asitik, 2015). However, Forkuoh et al. (2012) are of the view that demographic characteristics can moderate the reciprocal relationship between behaviour, cognitive and situational factors in terms of idea development. Whilst the debate on the influence of the trio factors (behaviour, cognition and situation) are ongoing, Denanyoh et al. (2015) opine that knowledge structures has the least impact on making decisions for entrepreneurial activities compared to individual's behaviour and environment.

The social cognition theory forms the framework for examining personality characteristics, cognitive structures and other contextual factors on attitudes exhibited in organizations and venture creation activities. Using the social cognition theory as a frame work, the present study conceptualizes a person's cognitive style as a cognitive factor which will influence behavior that is the act of decision-making for entrepreneurial business whilst and the level of education and business experience are conceptualized as situational factors which can influence both cognitions and decision-making in a reciprocal manner.

Review of Related Studies

A number of scholars have examined some antecedents of entrepreneurial behaviour. Some of these studies have focused on entrepreneurial cognitions, intentions and decision-making for entrepreneurial activities (e.g. Asamani & Opoku-Mensah, 2013) whilst others have focused on the effects of demographic factors on decision-making for enterprises.

For instance, Kickul et al. (2009) investigated how the cognitive styles of people influence entrepreneurial self-efficacy and the decision to create new ventures. Kickul et al. (2009) identified two cognitive styles that is, the preference for analytic and intuitive styles and then assessed how it influenced the confidence levels of people in decision-making activities for the establishment of businesses. The results showed that cognitive styles moderated the relationship between entrepreneurial self-efficacy and decision-making. Also, Ijdens (2015) examined the relationship between cognitive characteristics, demographic variables and

preference of decision-making approaches for entrepreneurial activities. Using a sample of 759 students from a university in the Netherlands, the results of the study showed that the students had preference for effectuation strategies in decision-making rather than the causation. Also, it was observed that an individual's level of education moderated the relationship between cognitive characteristics and preference for decision-making processes. Okyireh & Okyireh (2017) explored the experiences of eight student participants offering business related courses and their choice of strategies for decision-making in establishing businesses. The results of the study showed a direct relationship between cognitive structures and entrepreneurial decision-making. This was because they believed cognitive styles (arrangement, ability and willingness) were needed for entrepreneurial decisions and the success of the business.

Groves et al. (2011) examined the relationship between cognitive styles; nonlinear (intuitive) and linear (Analytical) and balanced (both intuitive and analytical) cognitive styles and decision-making strategies for enterprises amongst 180 professionals. It was observed that entrepreneurs and senior managers exhibited a balanced cognitive style in making entrepreneurial decisions to enhance performance. Harms & Schiele (2012) investigated antecedents and consequences of causation and effectuation decision-making in the development of international new venture creation. The study focused on the psychic distance of an entrepreneur, international experience and the decision to choose causation or effectuation strategies of decision-making. The results showed that psychic distance was positively related to causation decisions, also international experience negatively influenced causation decisions but positively influenced effectuation decision-making processes.

Vershinina et al. (2017) assessed the logics that entrepreneurs used when they faced critical incident threat in their businesses. Both expert and novice entrepreneurs were sampled for the study. The study reported that entrepreneurs who are experts opt for causal logic decisions when their assessment of risk is high. The expert entrepreneurs also sought advice from people they trust in their network to make decisions. Intuitive styles were also used concurrently depending on the situational factors available.

Waardenburg (2016) investigated the relationship between cognition, casual and effectual decision-making and entrepreneurial success amongst a sample of 137 novice entrepreneurs. The study reported that cognitions (Analytical and intuitive styles) significantly correlated with causal decision-making but not with intuition and effectuation. There was no relationship between intuition and cognition. Additionally, causation and age were negatively correlated with entrepreneurial success.

Smolka et al. (2016) also assessed the relationship between an entrepreneur's usage of causal or effectual reasoning and venture performance. The authors further examined the interaction effect of two dimensions of entrepreneurial decision-making (causation and effectuation) on venture performance. Responses were obtained from sample of people in 489 universities. The study showed that causal decision-making was a strong predictor of venture performance while aspects of effectuation such as flexibility and pre commitment positively predicted venture performance. There was an interaction effect between both dimensions (causation and effectuation) on venture performance. However, one of the constructs of effectuation: affordable loss negatively predicted venture performance.

Furthermore, Asamani and Opoku-Mensah (2013) examined psychological factors such as personality characteristics and study programs that influence student's entrepreneurial inclination. The study randomly sampled 20 students from three departments (Psychology, Biology and Management) at the University of Cape Coast. Their study showed that

personality characteristics like risk taking, leadership attributes, task performance and achievement attitudes correlated with entrepreneurial inclination.

Yeboah Asuamah et al. (2013) investigated the motivating factors and obstacles to entrepreneurial intentions. Using a sample of 136 participants (students), variables which influenced decision-making were ranked. The results showed that the top most ranked social support for students who were interested in entrepreneurial careers came from academicians/lecturers, business people, career advisors, entrepreneurs before family members and friends.

Adomako et al. (2018) as they examined the role of entrepreneurial alertness and networking on new venture performance. The study assessed how an individual within specified networks use their cognitive capacity to process knowledge and experiences towards making a new venture successful. Two hundred and three newly created firms were used for the study. The study reported that a positive relationship exists between people's ability to discover and process ideas about new ventures (alertness) and success in the ventures performance.

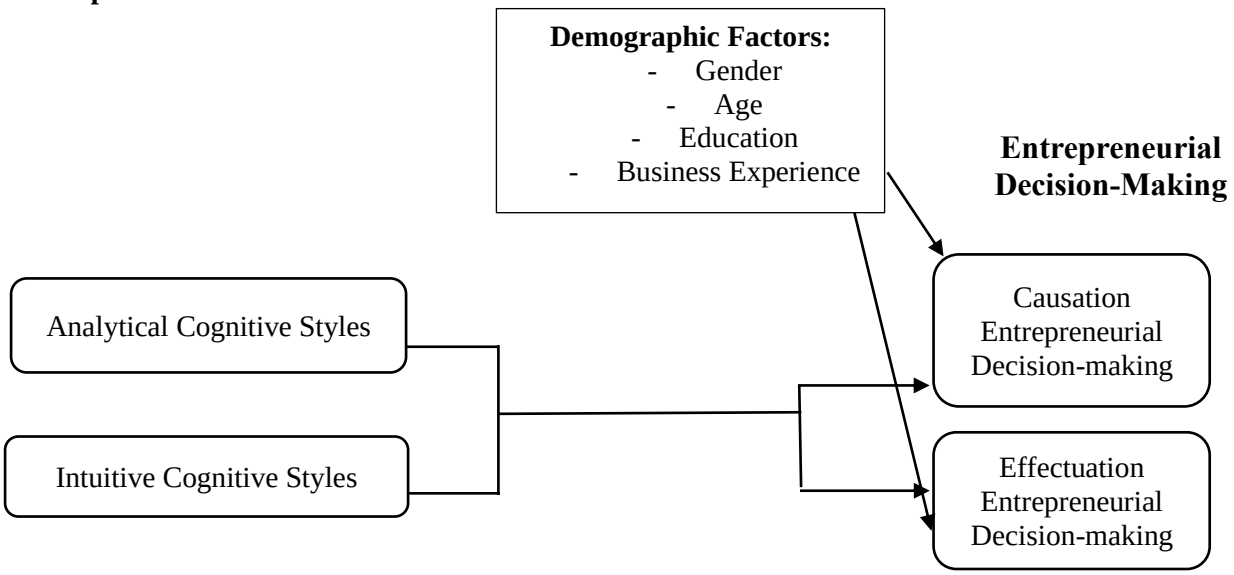
Francioni et al. (2015) also found that factors such as decision-maker characteristics and the type of cognitive styles adopted by entrepreneurs who owned small and medium scale enterprises (SMEs) were related. Using a sample of 165, the study revealed that there is a positive relationship between a person's need for achievement and political behavior and decision-making. In the study a person's political behavior was described as a decision-maker's willingness to be sustained by both internal and external factors with which the firm interacts. Therefore, when an individual (an entrepreneur) is goal oriented, he or she tends to rely on the support of both internal and external factors in the line of decision-making for their business. The study further indicated that awareness of risk in business informs the decision-maker to make rational decisions that will inure to the benefit of the business. In addition, demographic characteristics show that educational level is positively related to analytical thinking and hence the more educated one is the better his ability in taking rational decisions.

Ssendi (2013) examined the psychosocial-cultural factors that influence entrepreneurial activities amongst rural women in three villages: Kongowe, Ruvu Darajani and Patandi located in Tanzania. The study explored the perceptions of the women on cultural factors, managerial competence and barriers to entrepreneurship. The study showed that cultural beliefs such as discouraging the formal education of females negatively impact entrepreneurial skills. Additionally, religious beliefs and traditional norms also influence the performance of rural female entrepreneurs to the extent that reasons for practicing entrepreneurship is solely for survival purposes. Engel et al. (2017) investigated the role of past career management practices on approaches to entrepreneurial decision-making. Specifically, an individual's prior experience in a career environment influence his or her preference for causal or effectual decision-making. The study sampled twenty-eight firm founders in the Netherlands. The study reported that serial entrepreneurs that is people who had moved from one business to another opted for effectual decision-making compared to novice entrepreneurs. Also, entrepreneurs who had had long entrepreneurial careers also opted for effectual decision-making.

Neneh (2014) assessed factors that motivated university students in Cameroon to make decisions towards building an entrepreneurial career after completing their education. Additionally, the study sought to investigate whether demographic factors such as gender, experience from family and entrepreneurship education would influence career choice. Six hundred students were purposively sampled for the study. The study showed that males

compared to females had intentions to start their own business and entrepreneurship education enhanced entrepreneurship intentions. The students were also motivated to venture into entrepreneurship for reason such as poverty, unemployment and job insecurity whilst they found financial challenges, strong competitors and business skills as key barriers in entrepreneurship business.

Proposed Research Model



The model (Fig.1) above is a proposed diagrammatic representation of a summary of the research hypothesis of the present research.

Two dimensions of cognitive styles (analytical and intuitive) is predicted to relate to entrepreneurial decision-making approaches-effectuation and causation. Additionally, it is hypothesized that demographic variables (age, education, business experience & gender) will influence the choice of the two dimensions of entrepreneurial decision-making**.**

Research Hypothesis

H_1: Demographic factors will predict the choice of causation entrepreneurial decision-making

H_2: Demographic factors will predict the choice of effectuation entrepreneurial decision-making

H_3: There will be a positive relationship between both analytical and intuitive styles and effectuation decision-making.

H_4: There will be a positive relationship between both analytical and intuitive styles and causation decision-making.

Methods

The present study was conducted amongst people of the La-Nkwantanang Madina Municipal Assembly (LaNMMA) in the Greater Region of Ghana. The towns located within this municipality are Madina, Lybia Quarters, New Road, Redco, Oyarifa and Madina Estate. The area is densely populated with people from different religious sects (Christian, Islam and traditional believers) and educational backgrounds. The population of LaNMMA according to the 2010 Population and Housing Census was 111,926 representing 2.8 percent of the region's total population. Females constitute 51.5 percent and males represent 48.5 percent. About

84.0% of the population in the Municipality reside in urban localities. The municipality has a sex ratio of 94.1%. The population of the Municipality is youthful (38.7%) depicting a broad base population pyramid which tapers off with a small number of elderly persons (5.0%).
The predominant activities in the municipality are commercial activities managed by owners of small and medium scale businesses and private organizations. The profession of the inhabitants were service and trade related with a few others being entrepreneurs and non-entrepreneurs, students, workers in small and medium enterprises and private institution and unemployed persons. Additionally, the area is landmarked with private and public basic and tertiary institutions such as Mary Queen of Peace Basic Schools, Presec Basic Schools, Preset Secondary Schools, Presby Boys Secondary School, University of Professional Studies and the Wisconsin International University College. This municipality was selected for the present study because of the social background of the inhabitants and their exposure to the commercial and educational activities in that location. The researchers anticipated that the exposure to the entrepreneurial activities in the research area will influence inhabitants' opinion about cognitive styles and demographic factors on decisions to start entrepreneurial businesses.

Participants

A total number of 272 questionnaires were administered to participants from the La-Nkwantanang Municipality. These participants were conveniently sampled from Madina, Libya Quarters, New Road, Redco Flats and Madina Estate. These places were chosen because of their nearness to the market which serves as the main commercial center in the vicinity.

The table 1
shows the Demographic characteristics of the respondents in Study One
Demographic Characteristics

Variable	Categories	Frequency	Percent
Gender	Male	138	50.7
	Female	134	49.3
Educational level	Basic	13	4.8
	Secondary	55	20.2
	Tertiary	99	36.4
	Other	105	38.6
Marital Status	Single	159	58.5
	Married	39	14.3
	In a relationship	52	19.1
	Divorced	22	8.1
Religion	Traditional	24	8.8
	Christianity Orthodox	110	40.4
	Christianity Charismatic	102	37.5
	Islamic	22	8.1
	Other	14	5.1
Business Experience	Yes	201	73.9
	No	71	26.1

Source of Experience	Personal full time	20	7.4
	Personal part time business	57	21.0
	Family members' business	45	16.5
	Other	99	36.4

Table 1: presents the demographic statistics of the sample used for the study. The youth aged between 19 and 35 years were in the majority of the participants. In terms of gender: males constitute 51 percent while female samples constitute 49 percent. The sample is fairly literate with everybody having completed some form of formal education. While majority (38.6%) completed other educational levels than basic, secondary and tertiary educational level, a little over 36 percent completed tertiary education. 20 and 5 percent of the sample completed secondary and basic education respectively. Majority of the sample (59%) are single while 19 percent are not married but in relationships and 14 percent of the sample were married. Majority (78%) of the sample are Christians and a similar proportion of (74%) were also reported to having some business experience as at the time of the survey while 26 percent had no business experience.

Research Instruments

A total of two scales were used to test the hypotheses. These were cognitive index scale and the entrepreneurial decision-making scale.

Cognitive Style Index (CSI)

The cognitive style index (CSI) was developed by Allison et al. (2010). The CSI is a 38-item self-support inventory with two broad categories i.e. intuitive and analytical styles. Each of the two dimensions had sub dimensions with an additional dimension being midstream. The scale measures the thinking styles in a continuum. In all sub dimensions of cognitive styles namely: intuitive, quasi intuitive, adaptive, quasi analytic and analytic styles were measured. The items on the scale were scored in parts one being positive (true = two) and the other being negative (true = zero)

The main dimensions of the index: Analytical and intuitive styles showed a reliability coefficient of 0.79 and 0.82 respectively. The CSI had a total of 38 items on the scale. An example of an item on the scale is “I avoid taking a course of action if the odds are against its success”. It uses a trichotomos scale with the response options: True, Uncertain and False. It had a score range of 0 to 76. The score range for intuitive thinking styles was 0-28, quasi-intuitive styles was 29-38, adaptive thinking was 39-45 whilst quasi –analytic and analytic thinking styles was 46-52 and 53-76 respectively. The present study also tested for the reliability of the scales and the results showed that the Cronbach alpha of the two main dimensions of cognitive styles was; analytical styles 0.80 and intuitive styles 0.82. Additionally, a visual inspection of the items on the exploratory factor analysis output showed that the items correlated above .30 which meant that all the items loaded unto the cognitive style index.

Factor Loadings for CSI

The result showed that KMO measure of sampling adequacy was .714. The Bartlett’s test of sphericity, which examines the degree of inter-correlations among the variables, was

significant [χ^2 (300) = 7322.102, p < .001). Two factors had eigenvalues above1 and an inspection of the scree plot showed it levelled out after the second factor. The two factors were therefore extracted. The first factor explained 35.023% the variance then the second factor also explained 27.608% respectively accounting for a total variance of 62.631%. A visual inspection revealed that all items correlated above .30. The loadings in the current study were consistent with the original scale, which had two factors. The results are summarized in table 2

Table 2
Factor loadings based on exploratory factor analysis with varimax rotation for 30 items from two components of cognitive style index (N= 272)

Items	Component	
	Analytical	**Intuitive**
In my experience, rational thought is the only realistic basis for making decisions	**.626**	-.190
To solve a problem, I have to study each part of it in detail	**.407**	-.137
I avoid taking a course of action if the odds are against its success.	**.499**	.199
I am inclined to scan through reports rather than read them in detail.	.062	**.567**
My understanding of a problem tends to come more from thorough analysis than flashes of insight	**.538**	.162
I try to keep to a regular routine in my duties	.035	**.471**
The kind of business activity I like best is that which requires a logical, step-by-step approach	**.524**	.003
I rarely make 'off the top of the head' decisions.	**.491**	.265
Given enough time, I would consider every situation from all angles.	**.632**	.043
To be successful in my line of duty.	**.745**	.064
The best way for me to understand a problem is to break it down into its constituent parts.	**.570**	.243
I find that to adopt a careful, analytical approach to making decisions takes too long.	**.638**	.003
I make most progress when I take calculated risks.	**.583**	.265
I find that it is possible to be too organized when performing certain kinds of task.	.243	**.697**
I always pay attention to detail before I reach a conclusion.	**.567**	.095
I make many of my decisions on the basis of intuition.		**.618**
My philosophy is that it is better to be safe than risk being sorry.	**.440**	.003
When making a decision, I take my time and thoroughly consider all relevant factors	**.487**	.265
I would rather that my life was unpredictable than that it followed a regular pattern	.241	.518
Most people regard me as a logical thinker	**.637**	
To fully understand the facts I need a good theory.	.095	**.424**
I work best with people who are spontaneous	.186	**.759**
I find detailed, methodical work satisfying	**.564**	
My approach to solving a problem is to focus on one part at a time	.077	**.486**
I am constantly on the lookout for new experiences.	.182	**.518**

In meetings, I have more to say than most.	.054	**.546**
My 'gut feeling' is just as good a basis for decision-making as careful analysis	.167	**.639**
I am the kind of person who casts caution to the wind	.077	**.563**
I make decisions and get on with things rather than analyze every last detail	.077	**.450**
I am more at home with ideas rather than facts and figures	.182	**.512**

Entrepreneurial Decision-making Scale (EDM)

This scale was developed by Brettel, Mauer, Engelen and Küpper (2012). The scale measures 2 dimensions: Effectuation and causation in decision-making. It has a reliability coefficient of 0.781 with 25 items. The original scale begins with a vignette on a specific business case after which samples are asked to answer items on the scale using the vignette stated. An example of an item on the scale is "The decisions I make when starting my new venture will be based on the resources, I have available". It is a 7-point Likert scale with the response options ranging from very strongly disagree to very strongly agree. Answer option 1 was very strongly disagree,2 was strongly disagree,3 was disagree,4 was neutral, 5 was agree, 6 was strongly agree and 7 was very strongly agree. The highest score for the response is 175 and the lowest is 25. The Cronbach alpha of the two dimensions; causation and effectuation were 0.84 and 0.88 respectively in the present study. Furthermore, when the exploratory factor analysis (EFA) was done, all the items on the scales had a figure above 0.30 which showed that all the items loaded unto the EDM scale.

Factor loadings for EDM

The result showed that KMO measure of sampling adequacy was .766. The Bartlett's test of sphericity, which examines the degree of inter-correlations among the variables was significant [$\chi^2 = 4635$, $p < .001$). Two factors had eigenvalues above1 and an inspection of the scree plot showed it leveled out after the second factor. Two factors were therefore extracted. The first factor explained 48.964% the variance whilst the second factor explained 15.984% respectively accounting for a total variance of 64.948%. A visual inspection revealed that all items correlated above .30. The loadings in the current study were consistent with the original scale, which had two factors. The results are summarized in Table 3.

Table 3

Factor loadings based on a exploratory factor analysis with varimax rotation for 17 items from two components of the Entrepreneurial decision-making scale (N= 272)

	Component	
Items	**Effectuation**	**Causation**
I will ask customers and suppliers to pre-commit to my new venture in order to reduce risks	**.893**	.012
I will try to control the future based on predictions of my previously obtained knowledge	**.892**	.020
I will only spend resources I have available and I am willing to lose	**.882**	.236
I take a clearly pre-defined target as a starting point of the new venture	**.875**	.059

I will talk to people I know to enlist their support in making opportunities a reality	**.845**	.007
Decisions will be made together with stakeholders based on our competences	**.839**	.004
Decisions will be primarily based on minimization of risks and cost	**.801**	.063
I will try to identify risks by a thorough competitor analysis	**.595**	.178
I will try to be optimistic about the future	**.521**	.272
I will allow changes in my planning if needed, even during the implementation process of my new venture	-.063	**.911**
Before starting my new venture, I will first acquire all resources needed to achieve my target.	-.041	**.903**
I will try to identify markets by a thorough market analysis.	.019	**.893**
I will always pay attention that my initially defined target will be met.	-.345	**.882**
Beforehand, I will calculate how many resources I need to achieve the expected returns.	.192	**.759**
I expect to change my original target when confronted with new findings.	.167	**.518**
The decisions I make when starting my new venture will be based on the resource I have available.	.206	**.476**
The uncertainty of a market will not block me since I rely on my own experience to imagine opportunities.	.101	**.408**

Research Procedure

After ascertaining the suitability of the scales, the researchers administered the questionnaires to participants at times convenient to them with the help of a research assistant. Each participant was briefed on the aims of the study and also asked to sign the consent forms A time allocated to the filling of the form was one (1) hour after which the responses were analyzed using multiple regression analysis.

Results

Predictors of Causation Entrepreneurial Decision-Making

Hypothesis one proposed that demographic variables (gender, age, education and business experience will predict causation entrepreneurial decision-making approaches and hypothesis four also proposed that cognitive styles will cognitive styles of an individual will significantly predict causation entrepreneurial decision-making approaches.

The model below tests the predictors of causation entrepreneurial decision-making. The effect demographic factors are tested at stage 1 and the effect of entrepreneurial cognition styles was tested at stage 2. The results are provided on Table 2.

Table 4
Predictors of Causation Entrepreneurial Decision-Making

	Model	B	SE	β	t
1	(Constant)	37.402	6.308		15.929***
	Age	-.042	.040	-.030	-1.054
	Males	1.587	.497	.074	3.191**
	Has Business Experience	-8.419	.902	-.337	-9.331***
	Tertiary Education	-2.976	.720	-.132	-4.135***
2	Analytic Cognitive Style	1.299	.126	.766	10.307***
	Intuitive Cognitive Style	.280	.130	.148	2.147*

****=p<.001,** =p <. 01, * = p <. 05, (2-tailed: cognitive styles and demographic variables on causation EDM)*

The overall model was found to be significant (F = 124.776, p < .001) and accounted for approximately 64.6% (R^2 = .646) variance in causation entrepreneurial decision-making. In step 1, the demographic factors significantly predicted causation entrepreneurial decision-making (F = 3.601, p < .01), accounting for 5.2% variance (R^2 = .052). As shown on Table 2, gender, education and having business experience had significant effects on causation entrepreneurial decision-making. Males had .074 standard deviations higher causation entrepreneurial decision-making more than females (β = .074, t = 3.191, p < .01). Those who reported of having business experience reported .337 standard deviations lower causation entrepreneurial decision-making than those without business experience (β = -.337, t = -9.331, p < .001). Also, those with tertiary education reported .132 standard deviations lower causation entrepreneurial decision-making (β = -.132, t = -4.135, p < .001).
In step 2, entrepreneurial cognition styles: analytical and intuitive significantly predicted causation entrepreneurial decision-making (ΔF= 24.548, β=.766 p < .001) and (ΔF=24.548, β=.148, p<.50), accounting for additional 44.2% variance (ΔR^2 = .442). As shown on Table 2, causation entrepreneurial decision-making was predicted by both analytical cognitive style (t = 10.307, β=.766, p < .001) and intuitive cognitive style (t = 2.147, β=.148, p < .05). However, analytical cognitive style accounted for higher variance, with a 1 standard deviation increase in analytical style causing a .766 standard deviation increase in causation entrepreneurial decision-making (β = .776,p<.001), while a 1 standard deviation increase in intuitive style causes a .148 standard deviation increase in causation entrepreneurial decision-making (β = .148,p<.05).

Predictors of Effectuation Entrepreneurial Decision-Making
Hypothesis two proposed that demographic variables (gender, age, education and business experience will predict effectuation entrepreneurial decision-making. Hypothesis three also proposed that cognitive styles of an individual will significantly predict effectuation entrepreneurial decision-making.
The model below tests the predictors of effectuation entrepreneurial decision-making. The effects of demographic factors are tested at stage 1. The effect of entrepreneurial cognition styles, on effectuation entrepreneurial decision is tested at step 2. The results are provided on Table 3.

Table 5
Predictors of Effectuation Entrepreneurial Decision-Making

	Model	B	SE	β	T
1	(Constant)	-60.676	5.698		-10.648***
	Age	-.061	.036	-.039	-1.687
	Males	-.484	.449	-.020	-1.078
	Has Business Experience	-14.065	.815	-.499	-17.255***
	Tertiary Education	-5.404	.650	-.212	-8.313***
2	Analytic Cognitive Style	1.305	.114	.681	11.465***
	Intuitive Cognitive Style	.771	.118	.361	6.545***

****=p<.001,** =p <. 01, * = p <. 05, (2-tailed: cognitive styles and demographic variables on effectuation EDM)*

The overall model was significant (F = 199.157, p < .001), explaining 66.1% (R^2 = .661) variance in effectuation entrepreneurial decision-making.
In step 1, the demographic factors had significant impact on effectuation entrepreneurial decision-making (F = 14.122, p < .001), explaining 17.7% variance (R^2 = .177). As shown on Table 9, only education and business experience had significant effects. Those with business experience reported .499 standard deviations lower effectuation entrepreneurial decision-making than those without business experience (β = -.499, t = -17.255, p < .001). Then, those with tertiary education reported .212 standard deviations lower effectuation entrepreneurial decision-making (β = -. 212, t = -8.313, p < .001).
In step 2, entrepreneurial cognition styles; analytical and Intuitive styles significantly predicted effectuation entrepreneurial decision-making (ΔF= 34.483, p < .001), explaining additional 35.4% variance (ΔR^2 = .354). As shown on Table 3, effectuation entrepreneurial decision-making was predicted by both analytical cognitive style (t = 11.465, p < .001) and intuitive cognitive style (t = 6.545, p < .05). A 1 standard deviation increase in analytical style causing a .681 standard deviation increase in effectuation entrepreneurial decision-making (β = .681, p<.001) and a 1 standard deviation increase in intuitive style causes a .361 standard deviation increase in effectuation entrepreneurial decision-making (β = .361, p< .001).

Discussion of Findings

Relationship between Demographic Factors and Entrepreneurial Decision-Making

The first and second hypothesis examined the effect of demographic factors on the choice of both entrepreneurial decision-making dimensions (causation and effectuation) respectively. Firstly, the results showed that males compared to females will choose causation decision-making over effectuation decision-making. This means that males prefer making decisions in entrepreneurial businesses based on a predetermined plan and are able to map up strategies for an expected return (causation) and not on the basis of experimentation as seen in effectuation decision-making. Hence males are more rigid in decision-making than women. They prefer to follow laid down procedures in running businesses than adopt flexible forms. This finding is consistent with studies that have reported that gender plays a significant role in the choice of strategies for decision-making in entrepreneurial businesses (e.g. Asamani & Opoku Mensah, 2013; Yeboah Assuamah et al., 2013). Neneh (2014); Khefacha & Belkacem

(2015) also reported that males exhibited higher intentions towards entrepreneurial activities compared to females.

On the contrary, the relationship between males and the choice of causal decision strategies are inconsistent with studies that found that gender significantly influences the choice of effectuation decision-making in enterprises (e.g. Smolka et al., 2017). Similarly, the finding was inconsistent with studies that report that age and education but not gender are the determinants of choosing effectuation entrepreneurial decision-making over causation entrepreneurial decision-making. This is explained by the fact that, being a male or female does not matter the type of business to engage in. In fact, the findings make pronounced argument that individuals try to make decisions that will help them to achieve ends meet regardless of the type of business. (Francioni, et al., 2015; Groves et al., 2011; Ijdens, 2015; Minola et al., 2015). Women, compared to men preferred predefined means (causation) in making decisions on entrepreneurial businesses relative to experimentation means (effectuation) (Mordi et al., 2010).

Secondly, it was found that attaining tertiary education reduces an individual's ability to choose a rigid approach or a flexible approach in decision-making in managing enterprises. This implies that as an individual advance in education, he or she will choose other options of decision-making other than the approaches examined in this study. The finding is inconsistent with Idjens (2015) who reported that people with tertiary education are likely to choose effectual decision-making strategies. Similarly, Ssendi (2013) also reported that discouraging formal education amongst women negatively impacts entrepreneurial behavior.

Thirdly, the study reported that people with business experience had a lower preference for both dimensions of entrepreneurial decision-making (causation and effectuation).

The observed relationship between business experience and entrepreneurial decision-making was inconsistent with Engel et al. (2017) who found that past career management practices positively influenced approaches to entrepreneurial decision-making. Vershinina et al. (2017) also found that experienced entrepreneurs compared to novice entrepreneurs, preferred rigid (causation) decision-making when planning their businesses activities.

Experience from a business is important to the survival of an enterprise in that, it helps the individual to map up strategies to steer the affairs of the business in the right direction. Experiences come about out of continuous practice over a given period of time that culminates to having a successful venture. The findings of the study imply that the sample chosen for the study might have not been aware that of the existence of the rigid and flexible way of making decisions in enterprises i.e. causation and effectuation. However, the experience gathered by these entrepreneurs has influenced the use of other approaches to decision-making which is not captured in the present study.

Relationship between Cognitive Styles and Entrepreneurial Decision-Making

The second hypothesis sought to examine whether the cognitive styles (analytical and intuitive) will significantly predict the choice of entrepreneurial decision-making. The outcome of the results showed that cognitive styles significantly influenced entrepreneurial decision-making approaches. Specifically, both analytical and intuitive cognitive styles were each found to enhance both causation and effectuation entrepreneurial decision-making with analytical styles enhancing causal and effectual decision-making approaches more than intuitive styles.

This finding implies that analytical thinkers who have the intention to start a business have a higher tendency to use either rigid or flexible ways of making decisions in their businesses. From the sample, the individuals with organized way of operating the business showed much understanding of the industry in which they operated in. In addition, their business setups had support staff well-dressed and showed much of professionalism and that was quite impressive. This assertion is consistent with Kickul et al (2009) who discovered that both analytical and intuitive thinkers can opt for both dimensions of entrepreneurial decision-making approaches based on a personal assessment of their capability to perform a business task.

Okyireh and Okyireh (2017) also observed that a direct relationship exists between both cognitive structures and entrepreneurial decision-making to the extent that people with analytical or intuitive thinking patterns can adjust from making rigid decisions to flexible decisions depending on the conditions for establishing the business. This also implies from the sample that, the individuals set up businesses with an aim or a goal and more often, entrepreneurs who show orderliness or suddenness in thinking have the flexibility to make decisions either through maximizing on returns or perhaps be competitive. It is paramount to note that, individuals who engage in entrepreneurial activities do so for survival and therefore, any decision that can inure to the benefits of the business is taken seriously. This explanation accounts for the reason why decisions are taken depending on the environment, social and cultural changes that occur in the operating of the business.

Furthermore, Adomako et al. (2018) found that a positive relationship exists between people's ability to discover and process business ideas using decision-making strategies. Hence such strategies enhance the success of newly created ventures.

The use of both causation and effectuation decision-making by the two groups of thinkers (analytical and intuitive) also implies that the two decision-making approaches mutually reinforce each other in performing businesses successfully. This is consistent with Smolka et al. (2016) who reported that a combination of causal and effectual decision-making strategies was a strong predictor of venture performance. However, this finding was inconsistent with Harms and Schiele (2012) who reported that it is the psychic distance of an entrepreneur and not cognitive structures that determine the choice of causation or effectuation strategies. Waardenburg (2016) also investigated the relationship between cognition styles, casual and effectual decision-making and entrepreneurial success. The findings indicated that analytical cognitions significantly correlated with causal (rigid) decision-making but not with intuition and effectuation. This is contrary to the finding that each of the cognitive styles (analytic and intuitive) can predict the choice of decision-making strategies. This suggests that those who processes information in an organized manner is likely to choose goal driven strategies in decision-making. The reason that accounts for the findings from this study is that the analytical thinkers might have received prior information on the type of business to engage in and Groves et al. (2011) reports that a balance between the two cognitive styles determines an individual's approach to entrepreneurial decision-making.

Contribution to Knowledge

The study brings to bare the critical assumption of how individual's knowledge acquisition can be attributed to social and environmental interactions. Social cognition theory manifests itself in observed learning over a period of time and this tends to shape the orientation of individuals in a given society. One of the key highlights of the theory is how behaviour can be

influenced through multiple channels in making a decision. The current study endorses the theory by affirming the conditions present in ensuring that, business thrive as a result of social associations with relevant stakeholders.

Entrepreneurial studies have been widely researched on the African continent however, little is known from electronic databases on the cognitions of individuals in managing a business. In addition, studies found have paid little attention to the psyche of entrepreneurs and how their business have survived. This present a huge gap in the area of entrepreneurial studies and psychology in understanding the mental state of entrepreneurs.

Implications of the Findings

The entrepreneurial discourse is a continuous approach in dealing with issues of unemployment as well as solving societal problems in varied ways. The study discusses salient issues like cognitive styles (analytical and intuitiveness) which has implication for businesses and recruiters as well. First and foremost, gender seems to be at the heart of the success of an enterprise and stakeholders has to watch this very carefully. Men usually have a predetermined way of running a business through laid down procedure and often follow it to the latter. In addition, men hardly alter business operations even in the wake changing environmental factors, however, this is not the case for females. More importantly, recruiters are advised to consider the objective of the company before hiring due to the varied characteristics gender has on the success of a business. Having outlined this point, there are some tribes in Ghana that believe that, entrepreneurship is their birth right and hence their businesses will succeed regardless. This notion is enhanced in the study that having education is primary in boosting the choice of other strategies which are neither flexible nor rigid in business start-ups. Education combines cognition, affective and psychomotor in developing an individual to solving life's problems and hence, having no education will largely put a business in the elementary category.

The study again makes interesting revelations for business owners who want to recruit as well as startups that analytical thinkers will succeed regardless of challenges. The use of both flexible and rigid way of running a business is employed by analytical thinkers and are able to adapt well to business environment. Furthermore, individuals will make a business succeed on the basis of survival and the need to be independent. Stakeholders are encouraged to consider individuals with passion and experiences in managing a business enterprise very well and these are the road signs ought to be considered for a successful venture.

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