Developing and validating opportunity creation as a construct: a preliminary study

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Abstract: In this research, we develop and validate the construct, opportunity creation. We outline the theoretical foundations of opportunity creation. A review of research on opportunity creation gave rise to 21 manifest variables and three potential dimensions: 1) action and reaction; 2) individual differences; 3) socially created. These variables were subjected to various validity tests using entrepreneurs from Nigeria. Initial data from 231 entrepreneurs from Nigeria was used to conduct exploratory factor analysis and identify the dimensions of opportunity creation and their items. In order to validate the construct and its dimensions, data was collected from 360 entrepreneurs from Nigeria and was subjected to confirmatory factor analysis. Based on the findings, we argue that opportunity creation is a reflective construct with three dimensions and 13 variables.

Keywords: opportunity creation; opportunity recognition; measurement validity; reflective construct.

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1 Introduction

Entrepreneurship is about the creation of organisations. In the process of creating new businesses, entrepreneurs create jobs and contribute to improvement in various key goals of a country such as economic development, standard of living, skills development and community development. Entrepreneurship is the study of "how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited" [Shane and Venkataraman, (2000), p.218]. Is an opportunity recognised, discovered, or created? General theories of opportunity focus on the ontological origins of opportunities themselves by focusing on when and how opportunities come into existence (Alvarez et al., 2010; Vaghely and Julien, 2010). Sarasvathy et al. (2003) have provided three distinct views of entrepreneurial opportunity: market as an allocative process, market as a discovery process, and market as a creative process. Based on these views, they have developed a typology of entrepreneurial opportunities: opportunity recognition (allocative process), opportunity discovery (discovery process), and opportunity creation (creative process). The authors have argued that the three views are context-dependent and are influenced by different circumstances, problem spaces, and decision parameters. There are possibilities of relationships and interactions between the three views and they are essential to understand the landscape of entrepreneurship. Therefore, it is conceivable that an entrepreneurial venture can be an outcome of all the three processes and Starbucks is a case in point (Sarasvathy et al., 2003).

Many researchers have addressed, used, and validated opportunity recognition and discovery as an important construct in research related to entrepreneurship (Ardichvili et al., 2003; Baron, 2007; Eckhardt and Shane, 2003; Sambasivan et al., 2009). The concept of opportunity creation in entrepreneurship literature is "yet to be articulated as a single coherent theory in the literature" [Alvarez and Barney, (2007), p.15]. To answer the concerns raised by the researchers, Alvarez and Barney (2007) developed the creation theory to explain the process of opportunity creation. Opportunity creation theory implies that "entrepreneurs creating opportunities might engage in an iterative learning process that ultimately could lead to the formation of an opportunity. Entrepreneurs may find that

business plans can only be written after an opportunity has been created, and that rigorous planning too early in this process can be, at best, a waste of resources, and at worst, fundamentally misleading – to both entrepreneurs and those that invest in them" [Alvarez and Barney, (2007), p.125]. According to Alvarez and Barney (2007), opportunity creation is a subjective phenomenon and "created endogenously by the action, reaction and enactment of entrepreneurs" (p.15). So far over the years, numerous scholars (Weick, 1979; Aldrich and Kenworthy, 1999; Sarasvathy, 2001; Baker and Nelson, 2005; McMullen and Shepherd, 2006; Van de Ven et al., 2007; Dimov, 2007; Klein, 2008) have provided useful theoretical insight into opportunity creation construct, but there is no measurement for opportunity creation. The next logical development after theory is measurement. Unfortunately, there is no scale that can measure opportunity creation. Our study attempts to address this gap by developing a scale to measure opportunity creation. The new scale will allow researchers to study opportunity creation with larger sample sizes that will allow statistical validation.

Entrepreneurs from Nigeria have been used as the main samples of this study. The Nigerian economy is no stranger to the concept of entrepreneurship. Early studies (Schatz and Edopkayi, 1962) conducted found that inadequate capital is a problems for Nigerian entrepreneurs. It is worthy to note that over the years Nigerian Government has established organisations such as Bank of Industry and National Directorate of Employment to provide financial assistance to entrepreneurs. At this point, it is useful to understand the theoretical foundations of opportunity creation processes.

2 Theoretical foundation – opportunity creation

According to Berglund (2007), opportunity creation is an extension of the Austrian notion of subjectivism and can be traced to authors in radical subjectivist tradition such as Shackle (1979) and Lachmann (1976). This perspective explicitly includes imagination and creative expectations about the future. Berglund's (2007) argument is in consonant with Alvarez and Barney's (2007) postulation that opportunity creation is endogenously formed. Imagination and creative expectations are subjective and endogenous act. According to Buchanan and Vanberg (1991), the creation theory is contrary to both neoclassical and Austrian framework which assumes that true knowledge of the future is seen to exist, in different forms (dispersed, personal, and tacit). Berglund (2007) argues that such knowledge cannot exist because the future is yet to be created. Opportunities arise out of the subjective interpretations and creative actions of individuals. More than accurate perception, it is the individuals with the creative abilities and resources to influence their environment and facilitate the exploitation of the those resources create better opportunities (Gregoire et al., 2009). Some authors see opportunity as a means to introduce innovative goods, services, or processes (Gaglio, 2004) while others view it as a product of a creative process which synthesises ideas over time to create new ventures (Baron, 2008; Dimov, 2007).

Many researchers have attempted to develop creation theory as an alternative to discovery theory (Alvarez and Barney, 2007; Venkataraman, 2003). Unfortunately, there is no single theory to explain the creation process unlike discovery process. In an effort to assimilate the various studies related to opportunities, Venkataraman et al. (2012) have argued the position of entrepreneurship as a science of the artificial by bringing forth three important points: "(1) seeing opportunities as made (creation) as well as found

(recognition and discovery), (2) moving beyond new combinations to include transformations as a central concept, and (3) focusing empirical work on the actions and interactions of entrepreneurs and their stakeholders as an important unit of analysis" (p.25). We believe that if entrepreneurship is fully developed as the science of the artificial, then the process of discovery and creation can be subsumed and explained by an overarching theory. Based on recent developments in the field of entrepreneurship, we need to look at opportunities as created and/or discovered. Even though discovery and creation are considered as alternative approaches, researchers need to reconcile to the fact that both can co-exist in the new venture development process. Alvarez and Barney (2007) argue that acknowledging the significance of discovery and creation theories of opportunities can pave the way for the development of a general theory of entrepreneurship. We now focus our attention on opportunity creation.

Opportunity creation, unlike opportunity recognition and discovery, assumes that opportunities are created by entrepreneurs endogenously by the process of actions, reactions, and enactment to produce new products or services. Opportunities do not exist independent of the perceptions of entrepreneurs. Actions by entrepreneurs are very fundamental to opportunity creation and without them opportunities cannot be formed (Alvarez and Barney, 2007; Sarasvathy, 2001). In the process of interacting with the market, the entrepreneurs validate their hypothesis (perception) about the opportunity. Depending upon the feedback from the market, the entrepreneurs react to adjust their perceptions about the opportunities. Enactment – is the process that entrepreneurs "construct, rearrange, single out, and demolish many 'objective' features of their surroundings" [Weick, (1979), p.164]. The enactment of actions and reactions is an iterative process and it leads to unfolding of opportunities. It is obvious that the process of opportunity creation is a path-dependent process (Alvarez and Barney, 2007); initial choices made, information and knowledge gathered, reactions to the information and knowledge gathered, and the process enacted. These can have a significant effect on the creation of opportunities.

According to the creation theory, among two individuals with indistinguishable attributes one may become a successful entrepreneur while another may not depending upon small differences in the enactment process and luck (Arthur, 1989; Barney, 1986). A characteristic that is inherent in opportunity creation is uncertainty unlike opportunity recognition and discovery. This is because the information needed to form opportunities and estimate success probability does not exist until the opportunity is created.

Alvarez and Barney (2007) have attempted to link the process of opportunity creation to the following theories: evolutionary theory of entrepreneurship (Nelson and Winter, 1982), resource-based theory (Barney, 1986) and theory of the firm (Williamson, 1985). Evolutionary theory is about selection logic. Selection logic drives what evolutionary theorist do (Murmann et al., 2003). According to Aldrich (1999), evolution theory hinges on four generic processes: variation, selection, retention and struggle. According to Klein (2016), the research literatures on entrepreneurship and the theory of the firm developed independently. He has highlighted the fact that literatures have struggled to connect and has suggested that the entrepreneurial act be considered as the "acquisition, combination, and recombination of heterogeneous resources under conditions of uncertainty" (p.323). What is common to all these theories is the focus on the idiosyncratic nature of individuals (entrepreneurs), which is contingent on the peculiar context of each individual. Among the various theories, Barney and Arikan (2001) claim that resource-based theory has received substantial support from many empirical studies. In

our research, we use resource-based theory to explain the link with opportunity creation. The enactment process is central to opportunity creation. The effects of differences between the initial stages of opportunity formation and later stages can be significantly pronounced, especially under conditions of uncertainty (a characteristic of opportunity creation). The enactment process can lead to accumulation of resources and capabilities by the entrepreneur and the firm that are markedly different from others. These resources and capabilities are valuable, rare, and expensive to imitate by others and can be utilised to develop strategies that can provide the entrepreneurial firm with a distinct competitive advantage (Alvarez and Barney, 2007). For example, the enactment process (selling fresh roasted bean, brewing fresh coffee, and allowing customers to taste fresh coffee) of original founders and Howard Schultz led to the creation of Starbucks that had resources and capabilities that were valuable, rare, and difficult to imitate. With these resources and capabilities, Howard Shultz was able to develop strategies such as expansion and internationalisation that made Starbucks an international company. Opportunity creation like opportunity recognition and discovery is fundamental to research on entrepreneurship. Opportunity recognition/discovery and opportunity creation need not be mutually exclusive. An entrepreneurial venture can be a result of both discovery and creation. Since the opportunity recognition and discovery construct has been developed and used by many studies, we fill the gap in the research on opportunity by developing a construct to measure opportunity creation. Based on the literature, we classify the themes that explain opportunity creation as: action and reaction, individual differences, and socially constructed. We now explain each of these themes.

- *Action and reaction*: according to Aldrich and Kenworthy (1999), opportunity creation is all about action, creativity, experimentation, and playfulness. It can be argued that opportunity emanates from the "contingent interactions between the actions and perceptions and aspirations of entrepreneurs and partners within a given set of means" (Sarasvathy, 2001). Baker and Nelson (2005) have claimed that entrepreneurs iteratively (action and reaction) attempt to create opportunities. Alvarez and Barney (2007) have been more specific in claiming that entrepreneurs act and observe how markets respond to their actions, iteratively. They further suggest that entrepreneurs creating opportunities might engage in an iterative learning process that ultimately could lead to the formation of an opportunity. Therefore, action and reaction forms an important dimension of opportunity creation.
- *Individual differences*: opportunity creation have been indicated to emerge as follows by many researchers: idiosyncratic (Baker and Nelson, 2005), subjective judgement (Klein, 2008), refusing the constraint of existing rationalities (Shah and Tripsas, 2007), situation of complete ignorance (McMullen and Shepherd, 2006; Sarasvathy, 2001), and unconscious starting points (Aldrich, and Kenworthy, 1999). Shane and Venkataraman (2000) have suggested that entrepreneurs will not exploit opportunities with the 'same expected values' (p.223). Evans and Leighton (1991) have showed that the exploitation of opportunities is more common when people have greater financial capital. Similarly, Aldrich and Zimmer's (1986) findings show that stronger social ties to resource providers assist the procurement of resources and boost the probability of opportunity exploitation. Furthermore, Cooper et al. (1988) have found that people are more likely to exploit opportunities if they have useful information for entrepreneurship from their former employment, seemingly because such information lessens the cost of opportunity exploitation. These examples are

representative of the same phenomenon: These attributes are a reflection of individual differences and hence become an important dimension of opportunity creation.

- *Socially constructed/created*: the term has been used by Weick (1979) to describe opportunity creation. The generation of opportunities depends on the contextual and social influences in addition to the insights of a single individual (Dimov, 2007). It is suggested that opportunities arise via co-evolution among the entrepreneur and social systems (Sarason et al., 2006). Opportunities can also emerge from intense interactions between involved actors which facilitate distribution of knowledge among different people (Baker and Nelson, 2005). Van de Ven et al. (2007) have argued that entrepreneurs who consider both collective and self-interests are more likely to recognise and discover and/or create opportunities. From the above arguments it can be clinched that opportunity creation is a socially created function. According to Dimov (2007), "the socially embedded aspect pertains to the fact that potential entrepreneurs, rather than thinking and acting alone, are actively engaged in information and value exchange with a surrounding community" (p.714). Therefore, we claim that social influences play a crucial role in creation of opportunities and become an important dimension of opportunity creation.

3 Method

Many steps were taken to extract the items that could measure opportunity creation. First, a comprehensive literature review (using keywords such as 'opportunity creation', 'effectuation', 'entrepreneur', 'measurement', and 'theory') was conducted to understand how different researchers described the opportunity creation process. Based on the literature various statements that described the creation construct and its dimensions were developed. Second, to address the face and content validity of the scale items 20 entrepreneurs dealing in building materials were used as focus group. These entrepreneurs were asked to make statements that reflect opportunity creation construct. The researchers used these statements and constructed the measure. Thereafter this questionnaire was given to the focus group to indicate their agreement or otherwise to the statement. Criteria for item retention or rejection was based on Lawshe's (1975) content validity ratio (CVR). Third, a questionnaire was constructed with the items that were extracted from the second step. A pilot study was conducted by distributing the questionnaires to 15 entrepreneurs in Nigeria. Fourth, based on the results from the third step minor modifications were made to the questionnaire and the questionnaires were sent to entrepreneurs in Nigeria and responses were obtained from 231 entrepreneurs. The criteria for selecting these entrepreneurs include identifying individual entrepreneurs who were retailing more than one building material item and the age of firm was less than five years. A period of five years was chosen so that the entrepreneurs were able to recall the start of their business ventures with more precision. These entrepreneurs were selected from the sampling frame that had a total of 23,318 entrepreneurs. The random number table was used to select the entrepreneurs from the sampling frame. The exploratory factor analysis (EFA) was conducted on the data to identify the dimensions and their items of opportunity creation empirically. Fifth, a second set of data was collected, based

on the dimensions and items identified in step four, from a different set of 360 entrepreneurs from Nigeria. A confirmatory factor analysis (CFA) on the data collected was conducted to validate the dimensions of opportunity creation construct by computing composite reliability (CR) and average variance extracted (AVE) of each dimension of the construct.

4 Data and results

The literature review yielded 21 items used by different researchers to describe opportunity creation process. The sources that were used to generate the items are given in Table 1. These 21 items were subjected to face and content validity test proposed by (Lawshe, 1975). The 20 entrepreneurs (focus group) rated the 21 items as 'essential to describe opportunity creation', 'useful but not essential to describe opportunity creation', and 'not necessary to describe opportunity creation' [Lawshe, (1975), p.567]. The CVR was calculated for each item and the results are given in Table 2. CVR was calculated using the following formula: CVR = (ne – (N/2))/(N/2), where ne is the number of respondents who indicated as essential and N is the total number of respondents. Based on the guidelines given by Lawshe (1975), items that had CVR less than 0.5 were eliminated. This step resulted in 14 items from 21 items.

As a next step, a questionnaire was created with 14 items with a five-point Likert scale ranging from strongly disagree to strongly agree. A pilot test was carried out by sending the questionnaire to 15 successful entrepreneurs in Nigeria. The following changes were made to the questionnaire items based on the feedback: Question four which was 'My contextual environment in conjunction with my customers, suppliers and investors help me to create opportunity' was modified to 'My business environment helps me to create opportunity'

The sampling frame used in the study was the database developed by National Bureau of Statistics (NBS) and Small and Medium Enterprises Development Agency of Nigeria (SMEDAN). The database had a list of 23,318 small and medium enterprises. The entrepreneurs were chosen from the construction sector in Nigeria since this sector had given rise to many successful entrepreneurs in the last few years. Out of 1,450 questionnaires that were sent, we received responses from 231 entrepreneurs and these were used for EFA analysis. The details about the firms that responded are as follows: (1) 94% of the firms had less than 50 employees and 6% had more than 50 employees and (2) 70% of the firms had revenue less than 100,000 Nigerian Naira (1 USD = 200 NGN), 25% of the firms had revenue between 100,000 NGN and 500,000 NGN and 5% of the firms had more than 500,000 NGN. The factors that were obtained from EFA are given in Table 3. Three factors were identified and they were:

1 individual differences

2 action and reaction

3 socially created.

One item under 'action and reaction' was removed since the factor loading was 0.34. The item removed was: 'In the beginning, I started the business unconscious of what I wanted to do'.

Table 1 Sources used to generate opportunity creation items

Authors	*Opportunity creation description*
	Socially created
Alvarez and Barney (2007)	Endogenously constructed
Weick (1979)	Socially constructed
Sarasvathy (2001)	created by individuals part of a process
Van de Ven et al. (2007)	Entrepreneurs who consider both collective and self-interests are more likely to recognise and/or create opportunities
Dimov (2007)	The generation of opportunities is a function of contextual and social influences rather than the insights of a single individual
Sarason et al. (2006)	Offers a structuration view of entrepreneurship, which suggests that opportunities do not exist independently but rather arises via co-evolution among the entrepreneur and social systems
Baker and Nelson (2005)	Opportunity emerges from intense interaction among involved actors due to the distribution of knowledge among different people.
	Individual differences
Baker and Nelson (2005)	Created from nothing
McMullen and Shepherd (2006)	Situation of complete ignorance
Sarasvathy (2001)	Does not know the demand curve
Aldrich and Kenworthy (1999)	Unconscious starting points
Baker and Nelson (2005)	Testing conventional limitations
Shah and Tripsas (2007)	Refusing the constraints of existing logics.
Klein (2008)	Opportunities as subjective phenomena (judgments) that are imagined, rather than created or discovered.
Baker and Nelson (2005)	In consequence largely idiosyncratic even if two actors share the same starting point, the resulting creation opportunity would tend to be significantly different according to the successive contingencies developed within the process.
	Action and reaction
Alvarez and Barney (2007)	Entrepreneurs act, and observe how consumers and markets respond to their actions
Aldrich and Kenworthy (1999)	About action, experimentation, creativity, and playfulness
Baker and Nelson (2005)	Actors iteratively attempt to build ways to combine what they have at hand
Baker and Nelson (2005)	Actors iteratively attempt to build ways to combine what they have at hand
Sarasvathy (2001)	Trying possible effects that can be created with a given set of means
Chiles et al. (2007)	Entrepreneurs engage in a process of creative imagination in which opportunities are exploited by continuously combining and recombining intermediate goods to produce consumer goods
Sarasvathy (2001)	Opportunity emerges from the contingent interactions between the actions and perceptions of entrepreneurs and the aspirations of their partners.

Table 2 Face and content validity

S/N	*Items of the three constructs*	*CVR*
1	In my attempt to create an opportunity I do not consider lack of resources as a problem to make me develop cold feet (action and reaction).	*0.6*
2	I experiment with different products and see which one is acceptable (action and reaction).	*0.8*
3	In the beginning I am very flexible, I do not stay with one idea but tried to take advantage of unexpected situation to create opportunity (action and reaction).	*0.8*
4	The ultimate product that was used to launch this business was quite different from my original idea (action and reaction).	*0.6*
5	Acting and observing how customers respond to my action helps me create opportunity (action and reaction).	0.2
6	Trying my ideas on the customers helps me create opportunity (action and reaction).	0.4
7	I do not wait for other entrepreneurs to start new business for me to emulate (individual difference).	*0.8*
8	The ways I think and try to bring new products to the market are a reflection of my ideas (individual difference).	*0.6*
9	Imagining about the future of my business assists me in creating opportunity (individual difference).	0.4
10	My interaction with customers helps me create opportunity (socially created).	*0.6*
11	My interaction with investors helps me to create opportunity (socially created).	*0.8*
12	I and my suppliers co-create opportunity (socially created).	*0.6*
13	Taking action in my business always helps me create opportunity (action and reaction).	0.2
14	Using other peoples' resources assist me in creating opportunity (socially created).	0.2
15	Being adventurous makes me create opportunity (action and reaction).	0.4
16	By observing my customers I can create opportunity (individual difference).	0.4
17	My contextual environment in conjunction with my customers, suppliers and investors help me to create opportunity (socially created).	*0.6*
18	I used a substantial amount of agreements with customers, suppliers and other stake holders to co-create opportunity (socially created).	*0.6*
19	In the beginning I started the business unconscious of what I wanted to do (action and reaction).	*0.6*
20	I pursue my ideas to see they come to bear fruits (individual difference).	*0.7*
21	The meaning I attach to certain business ideas and information is different from the meaning others will give to the same information (individual difference).	*0.6*

Table 3 EFA with 14 items

	Action and reaction	*Individual differences*	*Socially created*	*Cronbach's alpha*	*Communality*
A1	0.71			0.69	0.46
A2	0.79				
A3	0.76				
A4	0.69				
A5	0.34*				
Ind1		0.79		0.78	0.59
Ind2		0.82			
Ind3		0.72			
Ind4		0.73			
S1			0.60	0.78	0.54
S2			0.83		
S3			0.76		
S4			0.71		
S5			0.74		

Notes: *deleted from further analysis.
Legends: A1 – In my attempt to create an opportunity I do not consider lack of resources as a problem to make me develop cold feet; A2 – I experiment with different products and see which one is acceptable; A3 – In the beginning I am very flexible, I do not stay with one idea but tried to take advantage of unexpected situation to create opportunity; A4 – The ultimate product that was used to launch this business was quite different from my original idea; A5 – In the beginning I started the business unconscious of what I wanted to do; Ind1 – I pursue my ideas to see they come to bear fruits; Ind 2 – I do not wait for other entrepreneurs to start new business for me to emulate; Ind 3 – The ways I think and try to bring new products to the market are a reflection of my ideas; Ind 4 – The meaning I attach to certain business ideas and information is different from the meaning others will give to the same information; S1 – My interaction with customers help me create opportunity; S2 – My interaction with investors helps me to create opportunity; S3 – My suppliers and I co-create opportunity; S4 – My contextual environment in conjunction with my customers, suppliers and investors help me to create opportunity; S5 – I used a substantial amount of agreements with customers, suppliers, and other stakeholders to co-create opportunity.

4.1 Confirmatory factor analysis

In order to validate the dimensions and the items obtained through EFA a second set of data was collected from 360 entrepreneurs from the same pool of 23,318 small and medium enterprises. The details about the firms that responded are as follows:

1 more than 66% of the firms had less than 50 employees and more than 33% had more than 50 employees

2 40% of the firms had revenue less than 100,000 Nigerian Naira (NGN) (1 USD = 200 NGN), 52% of the firms had revenue between 100,000 NGN and 500,000 NGN and 8% of the firms had more than 500,000 NGN.

The analysis was performed using SmartPLS 2.0 with 13 items and three dimensions. The choice of SmartPLS is based on its robustness as stated by Hair et al. (2010). SmartPLS can address a wider range of problems given its ability to work with wider range of sample and model complexity and less strict assumptions about the underlying data. A final CFA with 13 items (see Appendix) and three dimensions were conducted and the results factor loading, CR, and AVE are given in Table 4. It can be seen that the factor loading of all items, CR and AVE values of the three dimensions are greater than the threshold acceptable values of 0.50, 0.70 and 0.50, respectively (Hair et al., 2010). Table 5 shows that the convergent and discriminant validity of the construct and its dimensions are met.

Table 4 CFA with 13 items

	Action and reaction (A)	*Individual differences (Ind)*	*Socially created (S)*	*AVE*	*Composite reliability*	*Cronbach's alpha*	*Communality*
	Threshold values			≥ 0.5	≥ 0.7	≥ 0.7	
A1	0.71			0.56	0.83	0.74	0.56
A2	0.82						
A3	0.79						
A4	0.67						
Ind1		0.79		0.59	0.85	0.78	0.59
Ind2		0.82					
Ind3		0.72					
Ind4		0.73					
S1			0.61	0.55	0.85	0.78	0.55
S2			0.83				
S3			0.75				
S4			0.71				
S5			0.94				

Notes: Legend: A1 – In my attempt to create an opportunity I do not consider lack of resources as a problem to make me develop cold feet; A2 – I experiment with different products and see which one is acceptable; A3 – In the beginning I am very flexible, I do not stay with one idea but tried to take advantage of unexpected situation to create opportunity; A4 – The ultimate product that was used to launch this business was quite different from my original idea; Ind1 – I pursue my ideas to see they come to bear fruits; Ind 2 – I do not wait for other entrepreneurs to start new business for me to emulate; Ind 3 – The ways I think and try to bring new products to the market are a reflection of my ideas; Ind 4 – The meaning I attach to certain business ideas and information is different from the meaning others will give to the same information; S1 – My interaction with customers help me create opportunity; S2 – My interaction with investors helps me to create opportunity; S3 – My suppliers and I co-create opportunity; S4 – My contextual environment in conjunction with my customers, suppliers and investors help me to create opportunity; S5 – I used a substantial amount of agreements with customers, suppliers, and other stakeholders to co-create opportunity.

Table 5 Convergent and discriminant validity

Construct	*CR*	*AVE*	*Action and reaction*	*Individual differences*	*Socially created*
Action and reaction	0.83	0.56	0.746		
Individual differences	0.85	0.59	0.530*	0.769	
Socially created	0.85	0.55	0.460*	0.302*	0.731

Notes: *significant at 0.01 level of significance.
Legend: numbers on the diagonal are the square roots of AVE.

Based on the empirical results, we believe that entrepreneurial opportunity creation may in fact be a second order reflective construct, as opposed to a formative construct. Table 5 gives the correlation between the dimensions. "The indicators in this type of measurement model should be highly correlated due to the fact they all reflect the same underlying construct" [MacKenzie et al., (2005), p.711]. A reflective construct implies that causality flows from the higher-order construct to the lower-order indicators items, sub-constructs (Coltman et al., 2008; Jarvis et al., 2003) whereas a formative construct implies the opposite. For formative constructs, lower-order constructs 'form' the higher-order constructs. For reflective constructs, the lower-order constructs are designed to 'reflect' the upper-order constructs (Chandler et al., 2011). Besides, for a reflective construct, where the lower-order measures reflect the upper-order construct, suggests that the lower-level indicators are manifestations of the construct and may therefore be correlated (MacKenzie et al., 2005). In our research, correlations between the three dimensions are significant.

5 Discussion

The main goal of this study is to develop and validate entrepreneurial opportunity creation construct. From a thorough literature review, this study provides the measurement model of entrepreneurial-opportunity creation. According to Gaglio and Katz (2001), "research regarding opportunity identification is in its infancy and is best characterized as a scattering of descriptive studies rather than as a systematic research program of theory testing and development" (p.95). In order to move the research stream from a nascent to an intermediate phase it is necessary to develop and validate quantitative measures (Edmondson and Mcmanus, 2007). Our research makes an important contribution of providing a measurement model which contributes to the development and validation by constructing measures of entrepreneurial opportunity creation that are theoretically significant. This is important because it provides empirical measures to allow researchers to study the antecedents and outcomes of opportunity creation with larger sample sizes that will allow statistical analysis and validation. Specifically, we show that opportunity creation is a reflective construct.

Our study has identified and confirmed three dimensions of opportunity creation:

1 action and reaction

2 individual differences

3 socially created.

These dimensions are in line with the definitions of opportunity creation proposed by various researchers. To recap, the key definitions that explicate the dimensions are:

1 action and reaction dimension – opportunity originates from the contingent interactions between the actions and perceptions and aspirations of entrepreneurs and partners within a given set of resources (Sarasvathy, 2001)

2 individual differences dimension – idiosyncratic (Baker and Nelson, 2005), subjective judgement (Klein, 2008), refusing the constraint of existing rationalities (Shah and Tripsas, 2007), situation of complete ignorance (McMullen and Shepherd, 2006; Sarasvathy, 2001), and unconscious starting points (Aldrich and Kenworthy, 1999)

3 socially constructed/created dimension – opportunities do not exist independently but rather arise via co-evolution among the entrepreneur and social systems (Sarason et al., 2006).

The items that describe the three dimensions are:

1 action and reaction dimension:
   - a in my attempt to create an opportunity I do not consider lack of resources as a problem to make me develop cold feet
   - b I experiment with different products and see which one is acceptable
   - c in the beginning I am very flexible, I do not stay with one idea but tried to take advantage of unexpected situation to create opportunity; (iv)
   - d the ultimate product that was used to launch this business was quite different from my original idea

2 individual differences dimension:
   - a I pursue my ideas to see they come to bear fruits
   - b I do not wait for other entrepreneurs to start new business for me to emulate
   - c the ways I think and try to bring new products to the market are a reflection of my ideas
   - d the meaning I attach to certain business ideas and information is different from the meaning others will give to the same information

3 socially constructed/created dimension:
   - a my interaction with customers help me create opportunity
   - b my interaction with investors helps me to create opportunity
   - c my contextual environment in conjunction with my customers, suppliers and investors help me to create opportunity
   - d I used a substantial amount of agreements with customers, suppliers, and other stakeholders to co-create opportunity
   - e I used a substantial amount of agreements with customers, suppliers, and other stakeholders to co-create opportunity.

5.1 Limitations and directions for future research

Despite these useful contributions, our study has a few limitations that can be taken up for future research. First, additional research is needed to make sure we have identified the most relevant dimensions of entrepreneurial opportunity creation. We identified three dimensions of opportunity recognition based on literature review and empirical analysis. However, future research is required to examine whether there are other dimensions of entrepreneurial opportunity creation. It is also necessary to continue to examine and refine the measures we established in this research. This is necessary because the original operationalisation of impactful and complex concepts are rarely, 'perfect' (Chandler et al., 2011).

Our data were collected once from single informants at a point in time. This makes this study to be defined as cross sectional. We suggest that future research utilising a longitudinal design could be designed to follow entrepreneurs from infancy through the process of new venture creation.

6 Conclusions

In summary, entrepreneurial opportunity creation and entrepreneurial opportunity recognition have been proposed as distinct approaches to venture creation (Alvarez and Barney, 2007). Teleological theories suggest that behaviour that facilitates the accomplishment of one's purposes is more likely to occur than behaviour that does not facilitate the accomplishment of one's purposes (Parsons, 1962). The distinctions between these different processes suggest that entrepreneurs need to invent better ways to understand both perspectives. A survey of opportunity literature revealed that opportunity creation is not as articulated as opportunity recognition. An understanding of opportunity creation processes is a legitimate way to uncover opportunity that will assist entrepreneurs and potential entrepreneurs to expand existing or initiate viable new ventures. The current study has provided researchers and practitioners with an important tool for measuring opportunity creation.

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Appendix

Table A1 Items of three constructs

S/N	
1	In my attempt to create an opportunity I do not consider lack of resources as a problem to make me develop cold feet (action and reaction).
2	I experiment with different products and see which one is acceptable (action and reaction).
3	In the beginning I am very flexible, I do not stay with one idea but tried to take advantage of unexpected situation to create opportunity (action and reaction).
4	The ultimate product that was used to launch this business was quite different from my original idea (action and reaction).
5	I do not wait for other entrepreneurs to start new business for me to emulate (individual difference).
6	The ways I think and try to bring new products to the market are a reflection of my ideas (individual difference).
7	I pursue my ideas to see they come to bear fruits (individual difference)
8	The meaning I attach to certain business ideas and information is different from the meaning others will give to the same information (individual difference).
9	My interaction with customers helps me create opportunity (socially created).
10	My interaction with investors helps me to create opportunity (socially created).
11	I and my suppliers co-create opportunity (socially created).
12	My contextual environment in conjunction with my customers, suppliers and investors help me to create opportunity (socially created).
13	I used a substantial amount of agreements with customers, suppliers and other stake holders to co-create opportunity (socially created).

Notes: A five-point Likert scale was used; 1 – strongly disagree and 5 – strongly agree.