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Mohammed-Aminu Sanda & Mohammed-Nuru Sallama

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Mediation effect of emotions on relational dynamics between entrepreneurs' thinking processes and their entrepreneurial decision-making

Mohammed-Aminu Sanda  and Mohammed-Nuru Sallama

University of Ghana Business School, Ghana

ABSTRACT

This study provides understanding as to how creative entrepreneurs' thinking processes affect their entrepreneurial decision-making, and the influencing role played by their emotions. Using a cross-sectional design, quantitative data were collected from 576 creative entrepreneurs and analyzed descriptively and inferentially. It was found that creative entrepreneurs' thinking processes affect their entrepreneurial decision-making. Their emotions were also found to strongly negatively affect their entrepreneurial decision-making. It was concluded that in understanding how the thinking processes of creative entrepreneurs inform their entrepreneurial decision-making, their emotional orientations, which strongly determine the character of their entrepreneurial decision-making, must be considered. The results of this study provide a good understanding of the dynamics of creative entrepreneurs' thinking processes and their entrepreneurial decision-making and the mediating influence of their emotions, which could be used to effectively design creative entrepreneurship skills and practices toward improved entrepreneurial decision-making.

KEYWORDS

Entrepreneurs' thinking processes; entrepreneurs' emotions; entrepreneurial decision-making; creative entrepreneur industry; Ghana

Introduction

The creative industry is composed of domains of different activities that utilize artistic and scientific creativity, which are considered important sources of commercial and cultural value (Bujor & Avasilcai, 2016). Creative entrepreneurs can be described as individuals who rely on their creative and artistic ability to identify opportunities to produce creative products and/or services around which they create a business (Chang & Chen, 2020). Thus, as the creative industry gradually gains global recognition, researchers have taken a keen interest in determining how activities in the creative industry and individuals engaged in them affect each other. Research conducted from the global perspective has focused on the creative individual's ability to maneuver through the creative industry with a focus on factors such as personal characteristics (Stremikis, 2002), creative abilities (Batchelor & Burch, 2012),

entrepreneurial creativity (Chang & Chen, 2020), and the use of innovative practices (Wijngaarden et al., 2021), among others, while also addressing how these affect the work of the individual as a creative entrepreneur. Lynch and Corbett (2021) brought forward the duality of the entrepreneurial mind-set, entailing the shift that occurs during the cycles of learning, and how this extends previous concepts of the entrepreneurial mind-set. However, Winkler et al. (2021) claim that entrepreneurial experience alone may not necessarily guarantee venture success. “Some entrepreneurs develop into experts through learning from their experiences, whereas others fail to do so” (Winkler et al., 2021, p. 1).

Research on Ghanaian creative entrepreneurship is considered a developing activity, with a prevailing dearth of studies, as identified by the outcome of a study by Alacovska et al. (2020). This presents a knowledge gap in the Ghanaian creative industry context that this study sought to fill. Thus, this study aimed to understand how creative entrepreneurs’ thinking processes affect their entrepreneurial decision-making and the influencing role played by their emotions. This is underlined in the study by Williamson et al.’s (2022) that indicated that although entrepreneurship can provide personal fulfillment, it is uniquely poised to provoke emotional suffering. Williamson et al. (2022) argued that scholarly attention to negative moods and emotions (affect) in entrepreneurship has gained momentum; yet, reviews to date have focused on the consequences of affect, while our understanding of its antecedents remains fragmented. This neglect, as emphasized by Williamson et al. (2022), concerns that the conditions that trigger negative emotions are consequential to entrepreneurial cognition, behavior, and well-being. According to Williamson et al. (2022), negative emotions and moods are prevalent among entrepreneurs, but the often-overlooked question as to why and what stimulus triggers entrepreneurs’ negative emotions prevails. Thus, the questions for this study were as follows: (i). Does the thinking process of creative entrepreneurs affect entrepreneurial decision-making? (ii) Do creative entrepreneurs’ emotions influence the relationship between their thinking processes and entrepreneurial decision-making?

Entrepreneurs’ thinking processes, decision-making and emotions

Much of the literature on entrepreneurs’ “thinking processes” is grounded in the dual-process theory of thought. The dual-process theory explains how a thought can be formulated one way or another as a result of two processes, either as an implicit, unconscious process, or as an explicit and conscious process (Epstein et al., 1996). Contemporarily, it is this idea that encompasses a variety of theories with different approaches to the processes involved in thought that researchers in the psychology of thinking call “the dual process theory of thought” (Evans, 2008; Evans & Stanovich, 2013; Osman, 2004).

Similarly, much of the literature on entrepreneurs' decision-making" is grounded in Bounded Rationality Theory, which was based on Simon's (1947) work on decision-making theory. The theory of bounded rationality claims that decisions can be made with fair levels of calculation and inadequate information. Regarding entrepreneurs "emotions," the literature on is grounded in Bernard Weiner's Theory of Emotion. Weiner's (1980) theory shows how emotions such as anger, pride, and shame can be interpreted by ratings of causal dimensions such as locus, stability, and controllability. Thus, emotions are caused by these attributes, which tend to affect or influence behavior (Weiner, 1980, 1985).

Effect of entrepreneurs' thinking processes on their entrepreneurial decision-making

According to Munoz (2018), five cognitive factors—values, awareness, motivation, intention, and self-efficacy—come into play when defining the cognitive conditions for sustainable decision-making that can either mobilize or constrain entrepreneurial efforts to create sustainable value. Ijdens (2015) investigated individuals' cognitive styles and their choices in the decision-making process and found that their preferred choice of the decision-making process was the effectuation strategy rather than the causation strategy. Wang et al. (2019) investigated the risk decision-making of an entrepreneurial team while dissecting the process mechanism of cognitive adaptability in promoting risk decision-making, and also investigated the roles played by opportunity identification and entrepreneurial efficacy. Wang et al. (2019) showed that opportunity identification acts as a full mediator between cognitive adaptability and decision-making speed, whereas opportunity adaptability acts as a partial mediator between cognitive adaptability and decision-making effect.

According to Cowden et al. (2022), decision-makers should have a clear understanding of the importance of means-driven and control-oriented decisions at different levels of perceived uncertainty. Cowden et al. (2022) explained that means-driven decisions provide a safe way to navigate through moderate uncertainty, wherein decision-makers can utilize their existing means to proceed. On the other hand, control-oriented decisions enable decision-makers to utilize their partnership and complementary resources to gain control over uncertain situations and actualize a new future (Cowden et al., 2022). Winkler et al. (2021) proposed a cyclical process model of self-regulated entrepreneurial learning that includes three distinct phases (forethought, performance, and self-reflection). Winkler et al.'s (2021) model explains how expert entrepreneurs systematically reflect on their learning processes and take deliberate and agentic actions to pursue their entrepreneurial goals. These studies indicate that not much investigation has been conducted on the association between entrepreneurs' thinking processes and

their decision-making. Therefore, considering the underlying theories of the thinking process (i.e., the dual process theory of thought) and decision-making process (i.e., the bounded rationality theory), the following hypothesis (H1) relative to the association between the thinking processes and entrepreneurial decision-making of Ghanaian creative entrepreneurs was proposed.

H1: The thinking processes of creative entrepreneurs affect entrepreneurial decision-making.

Influence of entrepreneurs' emotions on their thinking processes and decision-making

Weiner (1980) proposed that emotions mediate the relationship between cognition (thinking processes) and behavior or behavioral tendencies (decision-making). Sanchez and Franco (2016) investigated the effect of emotions and feelings on the decision-making of entrepreneurs, specifically to explore how these emotions and feelings (affection, jealousy, love, compassion, individual unfairness, dissent, fear, surprise, anger, sadness, and sensitivity to criticism) affect different genders in making decisions regarding their enterprises. Sanchez and Franco (2016) found that both female and male entrepreneurs are affected by emotions and feelings when it comes to decision-making. Based on the idea that emotional, motivational, and cognitive processes shape entrepreneurial actions (Busenitz & Barney, 1997; Foo, 2011), Winkler et al. (2021) postulate that entrepreneurs can plan and proactively adjust the learning process based on a preexisting goal system. According to Winkler et al., they plan and execute means, resources, and activities to achieve learning goals, and periodically assess these actions and learning activities concerning their effectiveness. Aligning learning goals and outcomes can lead either to an adjustment of goals or learning strategies, ultimately changing the way of learning (Winkler et al., 2021, p. 17). Oo and Allison (2022), in their research made the case that display authenticity is an influential yet largely unstudied influence in entrepreneurial funding pitches. Oo and Allison (2022) found that displayed authenticity helps entrepreneurs raise money through crowdfunding. Oo and Allison posited that, “given the importance of emotional expression in crowdfunding, display authenticity is likely a dominant influence on whether emotional expression helps or hurts and thus whether entrepreneurs get the money they need to start and grow their ventures” (Oo & Allison, 2022, p. 31). These findings indicate an association between entrepreneurs' emotions and their decision-making. However, not much research has been conducted on the association between entrepreneurs' emotions and their thinking process or the influence of entrepreneurs' emotions on the association between their thinking processes

and their entrepreneurial decision-making. Therefore, considering the underlying theories for understanding entrepreneurs' emotions (i.e., Bernard Weiner's theory of emotion), thinking process (i.e., the dual process theory of thought), and decision-making process (i.e., the bounded rationality theory), the following hypotheses (H), relative to the association between entrepreneurs' emotions and their thinking processes, and the influence of entrepreneurs' emotions on the association between their thinking processes and entrepreneurial decision-making were proposed.

H2: Creative entrepreneurs' emotions will affect their thinking processes.

H3: Creative entrepreneurs' emotions will affect their entrepreneurial decision-making.

H4: Creative entrepreneurs' emotions influence the effect of their thinking processes on their entrepreneurial decision-making.

Conceptual framework

Therefore, in this study, taking into consideration hypotheses H1, H2, H3, and H4, the conceptual framework shown in [Figure 1](#) is proposed for testing and validation to answer the research questions posed in the introductory section.

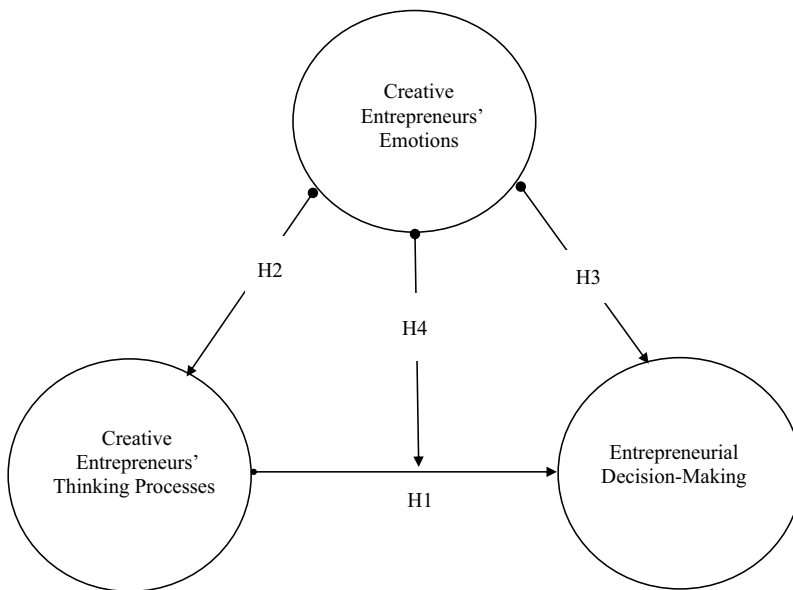


Figure 1. Conceptual framework.

Materials and methods

It is well established in the extant literature that human decision-making is characterized explicitly by controlled, self-reflective beliefs and implicitly by automatic and spontaneous beliefs. Entrepreneurship research largely relies on explicit beliefs to explain entrepreneurial behavior, as it is harder to capture implicit beliefs using standard survey methods (Mai & Dickel, 2021). Therefore, this study used a cross-sectional design. A quantitative research approach was adopted to enable hypothesis testing to establish a link between study constructs (Creswell & Creswell, 2017). As Mai and Dickel (2021) confirmed, both implicit and explicit constructs provide unique explanatory power, but can also interact, inhibiting the translation of entrepreneurial intentions into action. In this regard, the scale used to measure entrepreneurs' thinking process was adapted from the cognitive style index scale by Allinson et al. (2000), with a Cronbach's alpha of 0.61. The scale used to measure used to measure entrepreneurial decision-making was adapted from Brettel et al. (2012), with a Cronbach's alpha of 0.71. The scale used to measure used to measure entrepreneurs' emotions was adapted from Petrides (2009) Trait Emotional Intelligence Questionnaire with a Cronbach's alpha of 0.64. Following the work of Williamson et al. (2022), observations that majority of studies did not report the industries entrepreneurs worked in, this study's population was entrepreneurs in the Ghanaian creative industry, stratified as creative entrepreneurs in fashion, music, film, theater and fine arts. Data were collected from 576 creative entrepreneurs across the sectors in the three largest regions in Ghana: the Greater Accra Region, Ashanti Region, and the Northern Region. The respondents included fashion designers, tailors, seamstresses, musicians, actors/actresses, weavers, film producers/directors, music producers, painters, artists, dancers, photographers/videographers, playwrights, and creative directors. Ethical issues were strictly adhered to during the data collection.

The questionnaire, entailing a well-scripted synopsis, was given to each respondent after their acceptance of the partake in the study. The collected data were first collated, coded, and then analyzed, both descriptively and inferentially, using Statistical Package for Social Sciences version 23 as the analytical tool. In the descriptive analysis, the robustness of the data in terms of reliability and validity was tested. In the inferential analysis, correlation linear regression analyses were conducted to establish relational associations among the study variables.

Results and discussion

Robustness of the measured variables

Normality and reliability tests were performed to ascertain the robustness of the measured variables. Table 1 shows the outcome of the two tests for entrepreneurs' thinking process (ETP), entrepreneurial decision-making (ED), and entrepreneurs' emotions (EE).

As shown in Table 1, the reliabilities of the measured scales ranged between $\alpha = 0.61$ and $\alpha = 0.71$. According to Konting et al. (2009), a Cronbach's alpha value of 0.61 or higher suggests that the questionnaire's reliability is acceptable. The skewness values for all the variables ranged between -0.42 and 0.45 and the values of kurtosis ranged between -0.04 and 0.23 . The skewness and kurtosis values were within the accepted range of $+2$ and -2 , indicating that the data were normally distributed (Tabachnick & Fidell, 2013).

Correlation analysis of the study variables

In this analysis, the respondents' demographic characteristics were measured as control variables. These included gender, age, level of education, and number of years as entrepreneurs. To establish the association between creative entrepreneurs' thinking and decision-making processes, as well as with their emotions, Pearson correlation analysis was performed. In this analysis, gender and age were controlled for. The estimated Cronbach's alpha (α) coefficients are presented in Table 2.

The results in Table 2 show the existence of a positive and significant correlation between entrepreneurs' thinking processes and their entrepreneurial decision-making ($\alpha = 0.41$, $p \leq .01$). Although the correlation between the entrepreneurs' thinking processes and their emotions was negative and

Table 1. Reliability and normality test estimates for the study measures.

Study Measures	Mean	SD	Reliability (α)	Normality	
				Skewness	Kurtosis
ETP	1.98	.46	0.61	0.45	0.04
ED	1.87	.48	0.71	0.39	0.23
EE	2.87	.55	0.64	-0.42	0.15

Table 2. Pearson correlation coefficient estimates for the study variables.

Variables	1	2	3	4	5
1. Gender	1				
2. Age	-0.07	1			
3. Entrepreneurs thinking processes	-0.09^*	0.04	1		
4. Entrepreneurial decision-making process	-0.06	0.04	0.41**	1	
5. Entrepreneurs emotions	0.04	0.05	-0.02	-0.20^{**}	1

Note. * $p \leq .05$, significant; ** $p \leq .01$, very significant.

insignificant ($\alpha = -0.02$, $p > .05$), the correlation between their emotions and decision-making was negative but very significant ($\alpha = -0.20$, $p \leq .01$).

Hypothesis test for “effect of entrepreneurs’ thinking process on their entrepreneurial decision-making”

As outlined in the reviewed literature, this study sought to determine whether entrepreneurs’ thinking processes affect their decision-making. Based on this objective, it was hypothesized (H1) that “The thinking processes of creative entrepreneurs will impact their entrepreneurial decision-making.” To test this hypothesis, a Pearson product-moment correlation analysis was performed. As indicated in Table 2, the analytical outcome shows the existence of a significant positive correlation ($\alpha = 0.41$, $p < .1$) between the thinking process of Ghanaian entrepreneurs and their decision-making process. This implies that an increase in creative entrepreneurs’ thinking processes will positively impact their decision-making processes. Simple linear regression analysis was performed to further test this hypothesis. Table 3 presents the statistical estimates.

The results in Table 3 indicate that thinking processes predict entrepreneurial decision-making processes ($\beta = 0.41$, $p < .01$). Further statistical analysis showed that the model is fit, and that thinking processes predict the entrepreneurial decision-making process with a β^2 value of 0.16. Therefore, it can be concluded from the analysis that approximately 17% of the variation in entrepreneurial decision-making processes among creative entrepreneurs can be explained by their thinking processes. These results indicate that the entrepreneurial decision-making of creative entrepreneurs is impacted by their thinking process, and supports the first hypothesis, which states that: (H1) The thinking processes of creative entrepreneurs will impact their entrepreneurial decision-making process”. This finding aligns with the postulation that the connections between thinking processes and decision-making outcomes are dependent on the situation (Phillips et al., 2016), and the choice of entrepreneurial decision-making technique depends on how well individuals think analytically or intuitively (Kickul et al., 2009).

Table 3. Estimate of simple linear regression between entrepreneurs’ thinking processes and entrepreneurial decision-making.

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t-value	Sig
Entrepreneurs’ Thinking Processes	0.42	0.04	0.41	10.64	0.00

Note. Dependent variable: Entrepreneurial decision-making process, $R^2 = .17$.

Hypothesis test for “effect of entrepreneurs’ emotions on their thinking process”

As outlined in the reviewed literature, this study sought to determine whether entrepreneurial emotions affect their thinking processes. Based on this objective, it was hypothesized (H2) that “The emotions of creative entrepreneurs will impact their thinking processes.” To test this hypothesis, a Pearson product-moment correlation analysis was performed. As highlighted in Table 2, the analytical outcome shows that the correlation between the emotions and thinking process of Ghanaian entrepreneurs is not significant ($\alpha = -0.02$, $p > .05$). This implies that an increase in creative entrepreneurs’ emotions does not affect their thinking process.

Hypothesis test for “effect of entrepreneurs’ emotions on their entrepreneurial decision-making”

As outlined in the reviewed literature, this study sought to determine whether entrepreneurs’ emotions influence their decision-making. Based on this objective, it was hypothesized (H3) that “creative entrepreneurs’ emotions will affect their entrepreneurial decision-making.” To test this hypothesis, a Pearson product-moment correlation analysis was performed. As indicated in Table 2, the analytical outcome shows the existence of a very significant negative correlation ($\alpha = -0.20$, $p \leq .01$) between entrepreneurs’ emotions and entrepreneurial decision-making. This implies that an increase in creative entrepreneurs’ emotions constrains their entrepreneurial decision-making. A simple linear regression analysis was performed to further test this hypothesis; the statistical estimates are presented in Table 4.

The results in Table 4 indicate that the state of entrepreneurs’ emotions predicts their entrepreneurial decision-making process ($\beta = -.28$, $p < .01$). Further analysis showed that the model was fit and that entrepreneurs’ emotions predicted entrepreneurial decision-making with a β value of 0.08. Therefore, it can be concluded from the analysis that approximately 8% of the variation in entrepreneurial decision-making among creative entrepreneurs can be explained by their emotions. These results indicate that the entrepreneurial decision-making of creative entrepreneurs is impacted by their emotions, and thus support hypothesis (H3) that “the emotions of creative entrepreneurs will impact their entrepreneurial decision-making

Table 4. Estimate of simple linear regression between entrepreneurs’ emotions and their entrepreneurial decision-making.

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	t-value	Sig
Entrepreneurs’ Emotions	−0.08	0.02	−0.28	−4.69	0.00

Note. Dependent variable: Entrepreneurial decision-making.

process. This finding aligns with the prevailing notion in psychology literature that emotions impact how individuals think and decide (Shepherd & Patzelt, 2018). The findings are also associated with Weiner's (1980, 1985) postulation that emotions are caused by attributes that tend to affect or influence behavior. Thus, depending on the level of the creative entrepreneurs' personal impact, their entrepreneurial activities can be classified as controllable (e.g., effort) or uncontrollable (e.g., ability, task characteristics, and chance; Reisenzein et al., 2019). This is consistent with the results of Phillips et al. (2016). Kickul et al. (2009) who observed that the connections between people's thinking processes and decision-making outcomes depend on the situation. Also, Kickul et al. (2009) postulate that people can choose between two types of entrepreneurial decision-making techniques, depending on how well they think analytically or intuitively. In this regard, if creative entrepreneurs discern the cause of their entrepreneurial activity outcome as external and uncontrollable, they may experience anger or pity. On the other hand, if they view the cause of their entrepreneurial activity outcome as internal and controllable, they are likely to experience guilt for a negative result and pride for a positive outcome.

Hypothesis test for "influence of entrepreneurs' emotions on the relationship between thinking processes and entrepreneurial decision-making"

As suggested in the reviewed literature, this study sought to determine whether entrepreneurs' emotions influence the relationship between their thinking processes and entrepreneurial decision-making. Based on this objective, it was hypothesized (H4) that "creative entrepreneurs' emotions will influence the effect that their thinking processes have on their entrepreneurial decision-making." As established in the previous analyses, the emotions of entrepreneurs do not affect their thinking processes (H2) but have a very significant negative effect on their entrepreneurial decision-making (H3). Based on these findings, it can be inferred that the influence of entrepreneurs' emotions on the relationship between their thinking processes and entrepreneurial decision-making has no moderating effect. As a result, mediation analysis was performed to test H4. The regressions (R) and probability (p) estimates of the mediating effect of creative entrepreneurs' emotions on the relationship between their thinking processes and entrepreneurial decision-making are shown in Table 5.

The results in Table 5 show that entrepreneurs' emotions have a mediating effect ($R = 0.57$; $p \leq .01$) on the relationship between their thinking processes and their

Table 5. Estimate of mediation analysis of creative entrepreneurs' emotions on the relationship between their thinking processes and entrepreneurial decision-making.

Model	R	R ²	p
Entrepreneurs' emotions	0.57	0.32	0.01

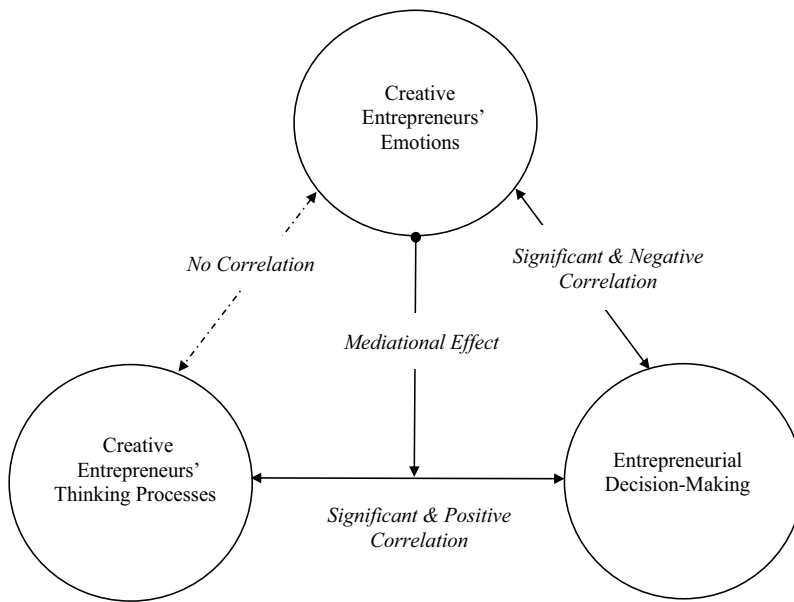


Figure 2. Empirical model summarizing study outcome.

entrepreneurial decision-making. As a result, hypothesis (H4) that “creative entrepreneurs’ emotions will influence the impact of their thinking processes on their decision-making process” holds. By implication, the effect of creative entrepreneurs’ thinking processes on their decision-making processes is mediated by their emotions. This finding is in line with Williamson et al. (2022) who observed that entrepreneurs manifest negative emotions and moods, and Weiner (1980) who found that emotions mediate the relationship between cognitions (thinking processes) and behavior or behavioral tendencies (decision-making). It is also consistent with Fenton-O’Creevy et al. (2010) who found that emotions and their regulation play a central role in traders’ decision-making and Baron (2008) who found that emotions have the power to affect judgment and decision-making even when they are unrelated to one another and originate from sources that are wholly irrelevant to the situation.

Conclusion

The results of this study provide an important insight into the dynamics of creative entrepreneurship and the significance of entrepreneurs’ emotions in the dynamics between their thinking processes and entrepreneurial decision-making. The results highlighted in Figure 2 below, provide important insight into creative entrepreneurship and the significance of entrepreneurs’ emotions in the dynamics between their thinking processes and entrepreneurial decision-making.

The study findings have helped to address Williamson et al. (2022) concerns about the lack of attention to context and has enhanced our understanding of

Ghanaian entrepreneurs' heterogeneous experiences and the outcomes of their emotions. As Williamson et al. (2022) noted, "context can restrict affective variation among entrepreneurs (e.g., central tendency, floor and ceiling effects, extreme base rates) or within entrepreneurs (e.g., stability over time when variability is hoped for; Johns, 2001)" (p. 27). This study, therefore, provides contextual perspectives that could enable educators to be in tandem with the pace at which creative entrepreneurship has developed over the past years and the impact it has, and continues to have, on individuals in developing economies who desire to create business around their creativity. Thus, based on the findings, it is concluded that in understanding how creative entrepreneurs' thinking processes inform their entrepreneurial decision-making, it is important to know the orientation of their emotions, which strongly determines the character of their entrepreneurial decision-making, in terms of yielding either positive or negative results. The study outcome provides a good understanding of the dynamics of the individual, as a creative entrepreneur, functioning in a developing country context (i.e., Ghana) and adds to the creative entrepreneurship literature. It aligns with Lynch and Corbett (2021), grounded in cognitive psychology, which bears on current descriptions of entrepreneurs' mind-set and provides a pathway to explore the continual oscillations between elaboration and implementation, and the understanding that an entrepreneurial mind-set can be seen as more than one static view (Lynch & Corbett, 2021, p. 18). The outcome will also lead to the initiation of a knowledge-based platform within academic institutions for both practical and theoretical learning of how to model efficient and effective creative entrepreneurial activities.

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ORCID

Mohammed-Aminu Sanda  <http://orcid.org/0000-0003-0147-0680>

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