

ENTREPRENEURIAL Resilience, Entrepreneurial Alertness, and Emotional Intelligence as Predictors of Entrepreneurial Decision-Making among Agricultural Micro, Small, and Medium Enterprises in Davao Region: A Path ANALYSIS

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ABSTRACT

Entrepreneurial decision-making is essential for the sustainability and competitiveness of micro, small, and medium enterprises (MSMEs) in the agricultural sector, particularly in dynamic, unpredictable environments. This study sought to examine the direct and indirect effects of entrepreneurial resilience, entrepreneurial alertness, and emotional intelligence on entrepreneurial decision-making among agricultural MSMEs in Davao Region. A quantitative causal-correlational design was employed, utilizing path analysis to test the hypothesized structural relationships. Data were collected from 200 owner-managers of agricultural MSMEs using a structured survey questionnaire comprising validated scales for the main constructs. Results indicated that entrepreneurial alertness had the strongest direct effect on entrepreneurial decision-making, followed by entrepreneurial resilience. Meanwhile, emotional intelligence was confirmed as a significant mediating variable linking resilience and alertness to sound decision-making. The model demonstrated excellent fit indices, supporting the theoretical framework grounded in Effectuation Theory. Findings highlight the importance of fostering cognitive vigilance, psychological endurance, and emotional regulation to enhance strategic decision-making among agricultural entrepreneurs. Practical implications for entrepreneurship development programs and policy interventions were discussed.

KEYWORDS: *Entrepreneurial decision-making, entrepreneurial resilience, entrepreneurial alertness, agricultural MSMEs, Davao Region.*

INTRODUCTION

Entrepreneurial decision-making has emerged as a critical area of study given the increasing complexity of the global economy, characterized by fluctuating markets, technological disruptions, and heightened competition. Entrepreneurs, particularly within micro, small, and medium enterprises (MSMEs) in the agricultural sector, play a pivotal role in sustaining rural livelihoods, promoting food security, and fostering economic development (Farooq et al., 2021). However, as reported by the Food and Agriculture Organization (2022), agricultural MSMEs frequently face uncertainty arising from fluctuating commodity prices, climate variability, and limited access to finance and infrastructure. These challenges underscore the need for robust decision-making capabilities to ensure enterprise resilience and long-term viability.

In the Philippine context, agricultural MSMEs contribute significantly to employment generation, local economic development, and national food security (Laguador et al., 2020). Despite their importance, these enterprises face multiple challenges, including poor strategic decision-making, limited access to finance, and vulnerability to natural disasters and market shocks (Department of Trade and Industry, 2021; Philippine Statistics Authority, 2020). Alarming, nearly half of MSMEs fail within their first five years of operation, as highlighted by Sy and Mendoza (2020), underlining the urgent need to strengthen entrepreneurial competencies that enhance resilience and adaptability.

In Davao Region, agricultural MSMEs are key drivers of economic activity, particularly in commodity production areas such as Davao del Norte, Davao de Oro, and Davao del Sur (Department of Agriculture Region XI, 2021). However, persistent challenges such as limited market linkages, managerial inefficiencies, and financing gaps continue to constrain their growth potential (DTI-Davao Regional Office, 2022). Strengthening entrepreneurial decision-making processes among these enterprises is therefore critical for improving their sustainability and competitiveness.

Recent studies (Ayala & Manzano-García, 2022; Agyapong et al., 2021) highlight the importance of psychological and cognitive traits in shaping entrepreneurial decision-making, particularly under conditions of uncertainty. Entrepreneurial resilience, according to these studies, enables entrepreneurs to bounce back from adversity, sustain business continuity, and remain committed

to long-term objectives. In dynamic markets, Amankwah-Amoah (2021) argued that entrepreneurial alertness is pivotal in helping entrepreneurs recognize, interpret, and respond to emerging opportunities. This cognitive capability allows entrepreneurs to stay ahead of market changes and adapt swiftly to competitive shifts. Emotional intelligence, as described by Abdullah et al. (2021) and further supported by Eijdenberg et al. (2022), enhances decision-making effectiveness by enabling entrepreneurs to regulate emotions, build social capital, and maintain trust with stakeholders.

Despite the growing body of literature on these individual traits, integrated models examining how resilience, alertness, and emotional intelligence simultaneously interact to influence entrepreneurial decision-making remain limited, particularly in the agricultural MSME sector within emerging economies. Most existing studies have focused on urban entrepreneurship or technology-based ventures (Belousova et al., 2022), leaving a knowledge gap in high-risk traditional sectors like agriculture.

Anchored on the Effectuation Theory proposed by Sarasvathy (2001), which emphasizes decision-making based on available means, adaptive partnerships, and contingency responses, this study investigates the structural relationships among entrepreneurial resilience, entrepreneurial alertness, emotional intelligence, and entrepreneurial decision-making. Effectuation is particularly relevant to agricultural MSMEs operating in unpredictable environments where predictive strategies often fail.

The findings of this study are expected to provide evidence-based insights that can strengthen entrepreneurial decision-making competencies among agricultural MSME owners by identifying the psychological and cognitive attributes that facilitate effective strategic choices under uncertainty. Furthermore, the results may inform policy interventions and entrepreneurship development programs of government agencies by highlighting areas where resilience-building, opportunity recognition, and emotional intelligence training can improve the sustainability and competitiveness of agricultural MSMEs.

Statement of the Problem

1. What is the status of entrepreneurial resilience, entrepreneurial alertness, emotional intelligence, and entrepreneurial decision-making among agricultural MSMEs in the Davao Region?
2. Is there a significant relationship between Entrepreneurial resilience and

entrepreneurial decision-making, Emotional intelligence and Entrepreneurial decision-making, Entrepreneurial resilience and Emotional intelligence

3. Within the context of the research path model, to what extent does each predictor variable significantly contribute to entrepreneurial decision-making?
4. What are the important issues that surfaced in the quantitative results that need explanation?
5. How do the qualitative results explain the quantitative findings?

METHODOLOGY

Research Design. This study employed a quantitative descriptive causal-correlational design to examine the direct and indirect relationships among entrepreneurial resilience, entrepreneurial alertness, emotional intelligence, and entrepreneurial decision-making among agricultural MSMEs. Path analysis was utilized as the primary statistical method to test the hypothesized structural model, allowing the evaluation of both direct effects and mediated pathways (Hair, Black, Babin, & Anderson, 2019).

Research Participants. The participants were 200 owners or managers of agricultural micro, small, and medium enterprises operating in the Davao Region. Respondents were selected through stratified random sampling to ensure proportional representation across the six localities based on the number of registered agricultural MSMEs. The allocation of respondents across the six localities was determined proportionally based on the registered agricultural MSME population in each area to ensure adequate representation of the regional agricultural enterprise sector. Eligibility criteria included ownership or active management of a registered MSME engaged in agriculture-related activities such as farming, livestock, aquaculture, or agri-processing, with at least one year of operational experience.

The sample size was determined following Kline's (2015) recommendation that a minimum of 200 respondents is appropriate for path analysis involving multiple predictors.

Research Instruments. Data were collected through a structured survey questionnaire composed of four main sections, each corresponding to a variable in the study:

- Entrepreneurial Resilience was measured using an adapted version of

the Entrepreneurial Resilience Scale developed by Ayala and Manzano-García (2022).

- Entrepreneurial Alertness was assessed using items adapted from Tang et al. (2012) that reflect the dimensions of information scanning, association, and evaluation.
- Emotional Intelligence was measured using a version of the Emotional Competence Inventory, aligned with Goleman's (1998) framework and adapted for entrepreneurial contexts (Cardon et al., 2020).
- Entrepreneurial Decision-Making was assessed using selected and modified items from the General Decision-Making Style (GDMS) instrument developed by Scott and Bruce (1995).

The internal consistency reliabilities (Cronbach's alpha) for the scales ranged from 0.85 to 0.91, indicating acceptable reliability.

Data Gathering Procedures. Prior to data collection, approval to conduct the study was obtained from the Dean of the Graduate School, and ethical clearance was secured from the University of the Immaculate Conception Research Ethics Committee.

A list of registered agricultural MSMEs in the Davao Region was obtained from the Philippine Statistics Authority (PSA) headquarters. The existence of selected MSMEs was verified through field inspection within the study areas. After verification, the researcher personally distributed the survey questionnaires to the identified owners and managers. Informed consent was secured from each participant prior to participation. Participants were briefed regarding the objectives, procedures, potential risks, confidentiality protections, and their right to withdraw at any time without penalty.

Survey administration occurred during business hours, and questionnaires were retrieved after 1 week or according to participants' preferred timelines to allow sufficient time for completion. In compliance with the Data Privacy Act of 2012, personal identifiers were not collected. All data were anonymized, securely stored, and made accessible only to the researcher and academic adviser. Data will be retained for 1 year post-study completion and securely deleted thereafter.

Statistical Tools. Descriptive statistics were used to summarize the demographic and entrepreneurial profile of the respondents. Additionally, mean

scores and standard deviations were computed to describe participants' levels of entrepreneurial resilience, emotional intelligence, alertness, and decision-making. Pearson correlation analysis was conducted to determine the relationships between pairs of variables, and regression analysis was applied to further test the predictive relationships among the constructs. Path analysis was performed to test the hypothesized relationships among entrepreneurial resilience, entrepreneurial alertness, emotional intelligence, and entrepreneurial decision-making.

The model fit was assessed using standard indices, including the Chi-square (CMIN), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Threshold values followed Hair et al. (2019) guidelines, with acceptable fit indicated by GFI, CFI, and TLI values greater than 0.90 and RMSEA values less than 0.08.

Ethical Considerations. This quantitative study upholds the highest ethical standards in research. It was submitted for review and approval by the University of the Immaculate Conception Research Ethics Committee (UIC-REC) to ensure compliance with ethical protocols, with issued protocol code GS-FB-01-25-0176. All procedures involving human participants strictly adhered to data privacy regulations and informed consent protocols. Participants were informed of their right to withdraw at any time without consequence, and confidentiality of all responses was maintained.

RESULTS AND DISCUSSION

Entrepreneurial Resilience, Emotional Intelligence, Entrepreneurial Alertness, and Entrepreneurial Decision-Making

The descriptive statistics presented in Table 1 show that the respondents exhibited very high levels of entrepreneurial resilience ($M = 4.42$, $SD = 0.43$), emotional intelligence ($M = 4.41$, $SD = 0.39$), and entrepreneurial decision-making ($M = 4.43$, $SD = 0.44$). According to Ayala and Manzano-García (2022), such high levels of resilience are critical for sustaining entrepreneurial activity during uncertain and disruptive conditions. This is further supported by Obschonka and Fisch (2020), who emphasized that

resilience equips entrepreneurs with psychological capital to persist in the face of environmental challenges.

Table 1
Entrepreneurial Resilience, Emotional Intelligence, Entrepreneurial Alertness, and Entrepreneurial Decision-Making

Latent Variables / Observed Variables	Standard Deviation	Mean	Descriptive Level
Entrepreneurial Resilience	0.43	4.42	Very High
Hardiness	0.53	4.36	Very High
Resourcefulness	0.44	4.48	Very High
Optimism	0.47	4.41	Very High
Emotional Intelligence	0.39	4.41	Very High
Self – Awareness	0.55	4.34	Very High
Managing Emotions	0.43	4.55	Very High
Self-Motivation	0.46	4.52	Very High
Empathy	0.52	4.24	Very High
Social Skill	0.54	4.41	Very High
Entrepreneurial Alertness	0.49	3.93	High
Scanning and Search	0.54	3.96	High
Association and Connection	0.74	3.60	High
Evaluation and judgement	0.62	4.21	Very High
Entrepreneurial Decision-Making	0.44	4.43	Very High
Effectuation	0.48	4.41	Very High
Causation	0.46	4.46	Very High

Specifically, among the dimensions of entrepreneurial resilience, resourcefulness recorded the highest mean ($M = 4.48$), followed closely by hardiness ($M = 4.36$) and optimism ($M = 4.41$), all categorized as very high. As Eijdenberg et al. (2022) have noted, resourcefulness reflects an entrepreneur's ability to creatively mobilize limited means to achieve desired outcomes. The respondents' high levels of hardiness and optimism demonstrate a strong capacity to endure challenges and maintain a positive outlook, traits essential for long-term business survival.

Similarly, all dimensions of emotional intelligence, self-awareness, managing emotions, self-motivation, empathy, and social skills were also rated very high, with managing emotions obtaining the highest mean ($M = 4.55$). Baron (2020) argued that emotion regulation enables entrepreneurs to remain calm under pressure, which is essential in high-risk settings such as agriculture. Cardon et al. (2020) described emotional intelligence as a core asset in navigating the interpersonal and organizational complexities of running a business. The consistently high scores across emotional intelligence dimensions affirm the findings of Belousova, Chliova, and Welter (2022), who asserted that emotionally intelligent entrepreneurs are more capable of leading effective teams and engaging stakeholders.

For entrepreneurial decision-making, both effectuation ($M = 4.41$) and causation ($M = 4.46$) achieved very high descriptive levels. Sarasvathy (2001) explained, through Effectuation Theory, that entrepreneurs tend to leverage available means and adapt to changing conditions rather than relying solely on predictive models. For instance, Matalamäki and Vuorinen (2021) emphasized that entrepreneurs who integrate both effectual and causal reasoning exhibit greater adaptability in fast-changing environments. Similarly, Kumpikaitė-Valiūnienė and Duobienė (2021) noted that combining predictive planning with flexible experimentation enhances entrepreneurs' responsiveness and learning during strategic decision-making. These insights are consistent with the study's findings, which show that respondents' high ratings reflect a balanced, strategic approach to decision-making, a trait particularly valuable in dynamic, unpredictable sectors like agriculture.

In contrast, entrepreneurial alertness posted a lower mean ($M = 3.93$), corresponding to a descriptive level of high. Among its subdimensions, evaluation and judgment achieved a very high rating ($M = 4.21$), while scanning and search ($M = 3.96$) and association and connection ($M = 3.60$) were both

rated high. As Amankwah-Amoah (2021) emphasized, scanning the environment and forming associative connections between market cues are essential cognitive activities that enable entrepreneurs to recognize emerging opportunities. The relatively lower scores observed in these dimensions suggest that while the respondents in this study demonstrate strength in evaluating opportunities, they may require additional development in proactive market scanning and in synthesizing scattered information into viable business insights. Further, Sy and Mendoza (2020) discussed how structural limitations, such as access to market information and institutional support, can hinder opportunity recognition, particularly among agricultural MSMEs.

In the study of Farooq et al. (2021), the study emphasized the importance of alertness as a driver of adaptive entrepreneurial behavior, especially when environmental uncertainty is high. Despite strong internal traits and decision-making strategies, the entrepreneurs in this study may benefit from targeted interventions to strengthen their external orientation and market responsiveness. As Ritala et al. (2021) suggested, building sustainable entrepreneurial ecosystems requires not only strengthening individual psychological traits but also enhancing the capacity to scan environments, connect diverse information, and evaluate opportunities.

Overall, the findings suggest that while the respondents possess strong internal capabilities, enhancing their proactive opportunity recognition skills could further strengthen their entrepreneurial performance.

Correlation Analysis of Variables

As shown in Table 2, the correlation analysis revealed significant positive relationships among the study's major variables. Entrepreneurial resilience was strongly correlated with entrepreneurial decision-making ($r = .631, p < .001$), suggesting that entrepreneurs with higher resilience are more likely to make sound strategic choices. According to Ayala and Manzano-García (2022), resilient entrepreneurs are better equipped to navigate uncertainty and maintain goal-directed behavior, which aligns with the observed strength of this relationship.

Table 2
Correlation Analysis of the Variables

Pair	Variable	Correlation Coefficient	p-value	Decision on H ₀
IV1 and DV	Entrepreneurial Resilience and Entrepreneurial Decision-Making	.631***	.000	Reject
IV3 and DV	Entrepreneurial Alertness and Entrepreneurial Decision-Making	.400***	.000	Reject
IV2 and DV	Emotional Intelligence and Entrepreneurial Decision-Making	.719***	.000	Reject
IV1 and IV2	Entrepreneurial Resilience and Emotional Intelligence	.762***	.000	Reject
IV1 and IV3	Entrepreneurial Resilience and Entrepreneurial Alertness	.370***	.000	Reject
IV3 and IV2	Entrepreneurial Alertness and Emotional Intelligence	.518***	.000	Reject

Emotional intelligence demonstrated the highest correlation with entrepreneurial decision- making ($r = .719$, $p < .001$). This finding supports the claims of Cardon et al. (2020), who asserted that emotionally intelligent entrepreneurs are more adept at managing complex interpersonal dynamics, regulating emotions under pressure, and exercising judgment in ambiguous situations. The strong correlation observed underscores the critical role of emotional and social competencies in driving effective decision-making in entrepreneurial settings (Baron, 2020).

Entrepreneurial alertness also showed a moderate but statistically significant correlation with entrepreneurial decision-making ($r = .400$, $p < .001$). For instance, Amankwah-Amoah (2021) argued that alert entrepreneurs can identify and evaluate market signals more effectively, thereby enhancing decision-making outcomes. While the correlation is moderate, its significance confirms that alertness remains an essential, though perhaps complementary,

factor in decision quality.

Additionally, entrepreneurial resilience was highly correlated with emotional intelligence ($r = .762$, $p < .001$), indicating a close interdependence between psychological endurance and emotional regulation. As Eijdenberg et al. (2022) further observed, resilient individuals are often emotionally stable and better able to maintain composure in the face of adversity, thereby strengthening their interpersonal functioning.

A moderate correlation was also found between entrepreneurial resilience and entrepreneurial alertness ($r = .370$, $p < .001$), suggesting that individuals who persist through challenges are also more vigilant and opportunity-seeking. This is consistent with the findings of Farooq et al. (2021), who emphasized the importance of resilience in promoting cognitive openness and alert behavior.

Finally, the significant relationship between entrepreneurial alertness and emotional intelligence ($r = .518$, $p < .001$) suggests that those who are emotionally aware and socially adept may also be more attuned to environmental cues and emerging opportunities. Belousova, Chliova, and Welter (2022) found that emotionally intelligent entrepreneurs are more proactive and observant, reinforcing the role of emotional intelligence as both an individual trait and a catalyst for alertness.

Path Analysis Results

The path analysis results summarized in Table 3 confirmed the hypothesized structural relationships among the variables. The model demonstrated excellent fit indices: CMIN (χ^2) = 0.641 ($p = 0.423$), GFI = 0.998, NFI = 0.998, CFI = 1.000, TLI = 1.006, and RMSEA = 0.000, indicating a strong alignment between the observed data and the hypothesized model. As noted by Kline (2021), fit indices such as the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) are among the most reliable measures for evaluating model adequacy in structural equation modeling. Applying these criteria, this study's results confirm excellent model fit, demonstrating strong alignment between the hypothesized structure and the observed data.

Entrepreneurial resilience exerted a significant direct effect on entrepreneurial decision-making ($\beta = 0.20$, $p < 0.008$). According to Ayala and Manzano-García (2022), resilience enables entrepreneurs to persevere through adversity by maintaining psychological stamina and adaptive strategies in uncertain conditions. Agyapong et al. (2021) likewise reported that resilient entrepreneurs are more likely to exhibit dynamic capabilities that support consistent and goal-oriented decision-making. Although the effect size in this study was modest, the finding supports the idea that resilience is a foundational psychological resource for navigating complex, high-risk environments such as agriculture.

Meanwhile, entrepreneurial alertness had a stronger direct effect on decision-making ($\beta = 0.63$, $p < 0.001$). As discussed by Amankwah-Amoah (2021), alertness enhances entrepreneurs’ capacity to identify environmental shifts, detect emerging opportunities, and respond strategically. This strong effect affirms that alertness is not merely a cognitive trait but a decisive factor in the quality and speed of entrepreneurial judgment under dynamic market conditions.

Table 3
Report on Path Analysis Results

Dependent Variable	Independent Variable	Unstandardized Coefficient	p
Indirect Effect on:			
Entrepreneurial Decision-Making thru Emotional Intelligence	Entrepreneurial Resilience	.61	.000
	Entrepreneurial Alertness	.22	.000
Direct Effect on:			
Entrepreneurial Decision-Making	Entrepreneurial Resilience	.20	.008
	Entrepreneurial Alertness	.63	.000

Relationship between:		
Entrepreneurial Resilience	.08	.000
and		
Entrepreneurial Alertness		
Model Fit:		
X2 (CMIN) 0.641, p = 0.423		
GFI= 0.998, NFI=0.998, CFI=1.000, TLI=1.006		
RMSEA= .000 P-CLOSE=.528		

Emotional intelligence served as a significant mediating variable in the model. Entrepreneurial resilience exhibited a substantial indirect effect on decision-making through emotional intelligence ($\beta = 0.61, p < 0.05$), while entrepreneurial alertness also had a smaller yet meaningful indirect effect through emotional intelligence ($\beta = 0.22, p < 0.05$). Cardon et al. (2020) and Baron (2020) have emphasized that emotional intelligence enables entrepreneurs to manage affective responses, resolve conflicts, and enhance interpersonal communication, thereby translating internal capacities into effective decisions. These mediated pathways highlight the integrative function of emotional intelligence as a cognitive-affective bridge that transforms personal traits into action-oriented behaviors.

Additionally, entrepreneurial resilience was found to positively influence entrepreneurial alertness ($\beta = 0.08, p < 0.05$). This supports the theoretical claim that resilient individuals maintain a proactive and vigilant mindset, making them more likely to scan for and identify new opportunities even amid adversity (Farooq et al., 2021). The structural path from resilience to alertness reinforces the view that these traits are mutually reinforcing rather than isolated.

Overall, the path model validated in this study affirms the complex interplay among cognitive, emotional, and psychological traits in determining entrepreneurial decision-making. These findings not only support the assumptions of Effectuation Theory (Sarasvathy, 2001) but also provide empirical evidence for the integrated role of emotional intelligence in mediating

the effects of resilience and alertness on decision outcomes.

Theoretically, the study extends the application of Effectuation Theory by demonstrating that entrepreneurial decision-making is not solely influenced by available means and adaptive reasoning but is likewise shaped by psychological resilience, cognitive alertness, and emotional intelligence. The findings support an integrated entrepreneurial decision-making model in which emotional intelligence serves as a mediating mechanism, strengthening the translation of entrepreneurial traits into strategic action.

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