Effects of metacognitive cultural intelligence on entrepreneurial growth

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Annotation: *The paper investigated the effect of metacognitive cultural intelligence on entrepreneurial growth among selected registered student enterprises in University of Ilorin. It specifically examined the effect of cognitive flexibility, cultural empathy and adaptability on entrepreneurial growth.*

Survey research design was adopted with a population of 237 registered student entrepreneurs in the University of Ilorin, Nigeria. 149 sample size were administered structured questionnaire. Data collected was analyzed using PLS-SEM.

It was revealed that Cultural Empathy has the strongest effect on Entrepreneurial growth ($\beta = 0.336$, $t = 3.464$, $p < 0.001$), followed by Cognitive Flexibility ($\beta = 0.292$, $t = 2.997$, $p < 0.003$), and Adaptability ($\beta = 0.256$, $t = 2.600$, $p = 0.010$).

Tertiary institutions should implement cross-cultural immersion-based training to develop cultural empathy which enhances business development potential among their students in global markets. Governement and other policymakers can establish specific programs which build metacognitive cultural competencies among young enterprise founders for combatting youth joblessness and promoting inclusive economic growth.

Student entrepreneurship in an emerging economy is scarcely investigated in relation to metacognitive cultural intelligence dimensions which this research fills this key gap between student entrepreneurship and cultural competence in research. The study reveals specific ways different cultural intelligence elements shape business growth patterns through its contrary approach to past studies on entrepreneurial growth.

1. Introduction

The current dynamic business environment needs more than technical skills and market knowledge to make entrepreneurial ventures successful. The capability to deal with cultural diversity now stands as a vital condition for entrepreneurial expansion. The notion proves particularly significant for student entrepreneurship since university-based entrepreneurs experience multiple cultural environments. The relationship between cultural intelligence and entrepreneurial success provides beneficial information to academics along with professionals in business (Moon, 2022). Research demonstrates that effective cultural adaptation by entrepreneurs creates better conditions to generate innovation for business growth. Such entrepreneurs demonstrate superior levels of adaptability together with creativity and resilience when they face challenges from multicultural interactions. Research works by Moon (2022) and Kim & Van Dyne (2023) outline why entrepreneurship needs cultural intelligence since it determines leadership quality and decision-making capability in diverse conditions. Cultural intelligence becomes essential for explaining business growth particularly because university campuses see common occurrences of diverse cultural exchanges (Liao & Thomas, 2020).

The dynamic relationship between cultural adaptability and entrepreneurship creates essential conditions for companies to develop sustainable and inclusive business growth. Student-led business operations succeed when they combine abilities to resolve cultural diversity challenges and utilize diverse workforce elements because this leads to superior problem solutions and improved business methods (Charoensukmongkol, 2021; Ott & Iskhakova, 2022). The relationship research takes place at the University of Ilorin gives students the rare chance to observe how cultural intelligence benefits entrepreneurial growth among young business leaders. Entrepreneurship growth faces difficulties because cognitive flexibility stands as an important quality among entrepreneurs. The numerous possible solutions foreseen by entrepreneurs with high cognitive flexibility presents hurdles to their decision-making processes which leads to slower choices or commitment to specific actions (Knežević et al., 2021). Twice rapid perspective changes in entrepreneurs affect their ability to establish stable business visions and create long-term strategic frameworks which leads to team member confusion (Zhu & Zhang, 2022). Extensive cognitive flexibility among entrepreneurs can result in business damage through their tendency to simultaneously pursue multiple opportunities without adequate development of any single opportunity (Zhang et al., 2020). Business growth requires a unified business strategy yet excessive direction changes cause inefficiency because they damage strategic cohesion.

Executive's ability to relate to various cultural contexts makes them better equipped to succeed in different markets however entrepreneurial expansion becomes harder because of it. Business owners who give too much attention to different cultural environments risk jeopardizing their fundamental company principles (Morris & Smethurst, 2023). Business success demands certain decisions that sometimes prove necessary yet entrepreneurs become reluctant to make them because of their extreme cultural sensitivity to different cultures. Businesses might lose valuable opportunities as well as struggle to successfully operate in various markets because of neglecting core business identity (Kessler & Mitchel, 2023). Entrepreneurs experience stress while trying to balance decisive action with cultural empathy since they need to handle cases where business operations meet cultural norms (Gibbons & Tate 2021). The commonly admired entrepreneurial trait of adaptability produces negative outcomes when entrepreneurs prioritize flexibility too extensively. The continuous adjustment of entrepreneurs to environment changes creates risks for them to move from proactive measures to reactive behavior which distorts their focus on long-term objectives (Mahmood et al., 2022). Businesses that adapt excessively experience inconsistent products or services which perplexes customers until they lose their brand loyalty (Nelson & Moore, 2023). Infrequent and ungrounded business adaptation leads to limited sustainability because it hinders long-term scale-up capabilities (Nguyen et al., 2023). Total dependence on continuous change creates challenges for both business continuity and entrepreneurial marketplace growth despite the vital need for adaptability.

So specifically the objectives of the study will include: to determine the effect of cognitive flexibility on entrepreneurship growth, to investigate the influence of cultural empathy on entrepreneurship growth and to examine the influence of adaptability on entrepreneurship growth.

2. Literature review

2.1 Concept of Metacognitive Cultural Intelligence

People with metacognitive cultural intelligence (CQ) know how to detect cultural differences in intercultural communication situations and transform their mental processes through adjustment measures. Self-awareness together with adaptive cognitive abilities form this dimension of CQ which enables people to control their cultural knowledge during social situations (Presbitero, 2020). People needs metacognitive CQ to build cultural strategies they use to modify behavior when entering new cultural workplaces in worldwide settings. People who possess this ability can examine their cultural bias to determine proper actions and communication strategies for working across different cultures (Ang & Van Dyne, 2015). Research documents that metacognitive CQ serves as a vital factor to increase both intercultural competencies and leadership abilities in global organizations. Metacognitive CQ in leaders shows high potential for handling diverse teams while developing inclusive workplaces according to Jiang et al. (2022) which results in enhanced team performance. Imai and Gelfand (2021) discovered that people who excel at metacognitive CQ succeed better at conflict resolution in diverse cultural zones because they predict cultural communication problems hence modifying their approach for harmonious connections. This approach to cultural intelligence develops through continuous review followed by adaptive changes which boost success in intercultural situations (Ang & Van Dyne, 2015).

2.2 Concept of Entrepreneurial Growth

A business expands through entrepreneurial growth through innovative strategies together with risk-taking and by maximizing available resources. Business owners who want to thrive in shifting market conditions perform activities that involve both operation growth expansion and product diversification and market penetration. According to Sataøen and colleagues (2021) entrepreneurial growth depends on both external and internal components that involve financial resource availability as well as networking capacity and market environment conditions. Entrepreneurial growth leads to rises in revenue combined with market share expansion and strengthened organizational capabilities which enable business leaders to seize new possibilities and succeed in dynamic market environments. Entrepreneurial growth follows a non-linear path because entrepreneurs must tackle competition along with regulatory barriers and lack of resources which directionally influence their business (Naumann, 2020). The development of entrepreneurial growth depends heavily on how entrepreneurs think which leads to achievement of business success. Success-oriented entrepreneurs demonstrate innovativeness by continuously developing their operations and adapting to customer requirements according to Sataøen et al. (2021). Such entrepreneurs embrace shifts in technology by integrating innovative new tools together with business procedures that bring efficiency into their operations. Through this entrepreneurial approach entrepreneurs gain the capacity to make critical decisions while adapting to change and taking needed course adjustments. Entrepreneurial growth directly relates to the entrepreneur's ability to use social and human capital networks which grant them essential resources and networking power needed to grow their businesses (Naumann, 2020). The expansion of a business under entrepreneurial leadership leads to economic development through employment creation alongside innovation promotion and market

competitive dynamics.

2.3 Effect of Metacognitive Cultural Intelligence on Entrepreneurial Growth

Metacognitive cultural intelligence (CQ) functions as a crucial factor for entrepreneurial growth throughout the globalized business environment today. This cultural intelligence measure allows individuals to master their cultural thinking processes and create successful plans when working in diverse cultural settings. Their understanding of their cultural thinking process enables entrepreneurs to forecast differences in cultural behaviors through effective adjustments in their own behavior which leads to more effective management of multicultural teams and increased international business success. The adaptability power of entrepreneurs successfully completes business success through creation of innovative solutions and enhanced decisions in complex multicultural situations (Ang & Van Dyne, 2020; Zhang et al., 2021). Business growth results from the positive link between metacognitive CQ and entrepreneurial self-efficacy. Entrepreneurs who demonstrate self-efficacy believe they have the competence to complete critical success tasks including opportunity detection as well as risk management and business expansion. The heightened cultural ability of entrepreneurs to handle challenges translates into superior self-assurance about managing cultural hurdles thereby reducing the traditional fears and doubts during marketplace entry and diverse team upkeep. Entrepreneurial intentions together with enhanced business strategies result in growth and expansion because entrepreneurial confidence increases (Ang & Van Dyne, 2020; Li et al., 2022).

2.4 Effect of Cognitive Flexibility on Entrepreneurial Growth

Entrepreneurial development requires cognitive flexibility that helps business owners adapt to changing conditions while making beneficial strategic choices. The continuous change in unpredictable business circumstances becomes manageable for entrepreneurs because cognitive flexibility enables quick perspective and solution changes. The required capacity helps entrepreneurs generate innovative concepts and foster creativity for finding market opportunities and controlling uncertain situations and surmounting obstacles. Highly flexible cognitive thinking enables entrepreneurs to adapt to industry transitions and take advantage of changing market elements which produces continuous business expansion (Wickham 2023; Cassidy et al. 2021). Entrepreneurs who demonstrate cognitive flexibility show better management skills regarding simultaneous project handling and sustainable period goal execution. Effective problem-solving becomes essential in business leadership because it allows entrepreneurs to handle different aspects of their ventures starting with resource distribution followed by team direction. Research illustrates that cognitive flexibility creates strong connections with resilience because it enables entrepreneurs to maintain driving force despite failure situations. Business growth can be increased through this capability as entrepreneurs use it to transform their strategic plans when encountering obstacles thus finding better routes to success according to Jones & Smith (2022) and Wickham (2023).

Thus, we propose the first hypothesis as follows:

H1: *Cognitive Flexibility has a positive influence on Entrepreneurial Growth.*

2.5 Effect of Cultural Empathy on Entrepreneurial Growth

Businesses achieve their entrepreneurial growth primarily through cultural empathy by establishing expanded cross-cultural relationships and advanced mutual comprehension. Business owners with strong cultural empathy successfully handle cultural challenges to rapidly recognize new international business opportunities. Cultural adaptability enables entrepreneurs to perform successfully in the present global market which demands working with customers and suppliers and partners holding diverse cultural views. Entrepreneurs who demonstrate respect toward different cultural expectations maintain trustworthy relationships that strengthen communication channels to achieve business expansion (Bosma & Holvoet, 2023; Dheer, 2021). Entrepreneurial resilience grows stronger through cultural empathy because it enables entrepreneurs to make decisions and resolve conflicts better in various multicultural environments. The ability of entrepreneurs with perspective empathy leads them to better handle cultural conflicts that develop from misunderstandings and expectation differences. Contemporary decision processes become achievable through this approach because entrepreneurs streamline different perspectives into their strategic planning system to support inclusive economic growth. Empathetic entrepreneurs who immerse themselves with cultures develop adaptable methods and creative strategies which enable them to drive market expansion in competitive environments as Cacciotti et al. (2022), Cloutier and Langley (2020) outline in their research. The effectiveness of adaptive entrepreneurs linked with solid cross-cultural relationships ensures sustainable market growth potential through shifting marketplace dynamics.

Thus, we propose the second hypothesis as follows:

H2: *Cultural Empathy has a positive influence on Entrepreneurial Growth*

2.6 Effect of Adaptability on Entrepreneurial Growth

Businesses achieve their entrepreneurial growth primarily through cultural empathy by establishing expanded cross-cultural relationships and advanced mutual comprehension. Business owners with strong cultural empathy successfully handle cultural challenges to rapidly recognize new international business opportunities. Cultural adaptability enables entrepreneurs to perform successfully in the present global market which demands working with customers and suppliers and partners holding diverse cultural views. Entrepreneurs who demonstrate respect toward different cultural expectations maintain trustworthy relationships that strengthen communication channels to achieve business expansion (Bosma & Holvoet, 2023; Dheer, 2021). Entrepreneurial resilience grows stronger through cultural empathy because it enables entrepreneurs to make decisions and resolve conflicts better in various multicultural environments. The ability of entrepreneurs with perspective empathy leads them to better handle cultural conflicts that develop from misunderstandings and expectation differences. Contemporary decision processes become achievable through this approach because entrepreneurs streamline different perspectives into their strategic planning system to support inclusive economic growth. Empathetic entrepreneurs who immerse themselves with cultures develop adaptable methods and creative strategies which enable them to drive market expansion in competitive environments as Cacciotti et al. (2022), Cloutier and Langley (2020) outline in their research. The effectiveness of adaptive

entrepreneurs linked with solid cross-cultural relationships ensures sustainable market growth potential through shifting marketplace dynamics.

Thus, we propose the third hypothesis as follows:

H3: *Adaptability has a positive influence on Entrepreneurial Growth*

2.7 Theoretical Review: Cultural Distance Theory

Geert Hofstede introduced Cultural Distance Theory in 1980 to demonstrate how cultural distinctions impact business operations and human relationships. The theory outlines multiple cultural dimensions including power distance and individualism which shape the communication methods and collaborative behaviors of people from different backgrounds (Hofstede, 1980; Taras et al., 2022). The foundational premise of the theory suggests that increased cultural separation between groups results in misunderstandings and disputes which reduce collaborative efficiency (Köroğlu & Aydoğan, 2023; Leung et al., 2020). Some researchers suggest that the theory fails to capture the complexity of cultural identities and overlooks the importance of cultural variability and personal experiences which restrict its effectiveness in different settings (Kozak et al., 2022; Ranjan et al., 2020).

The application of Cultural Distance Theory in metacognitive cultural intelligence contexts offers useful insights into how recognizing cultural differences promotes entrepreneurial development. Entrepreneurs who demonstrate high metacognitive cultural intelligence successfully bridge cultural gaps to advance collaboration and innovation in their business operations (Ang et al., 2020; Cummings & Daellenbach, 2020). Recent research indicates that understanding cultural distance improves both entrepreneurial intentions and team dynamics (Zhang et al., 2021; Karg et al., 2023). These findings highlight the relevance Entrepreneurial ventures experience expansion within multicultural settings.

2.8 Empirical Review

Dong and Li (2024) conducted research to explore how intrapreneurial self-capital interacts with cultural intelligence and gender among Chinese students studying abroad. The researchers used a web-based survey involving 508 participants to validate the cultural intelligence scale's structure through confirmatory factor analysis. The study demonstrated a positive relationship between metacognitive CQ and both intrapreneurial self-capital as well as flourishing which highlights how metacognitive CQ supports effective cultural adaptation and boosts entrepreneurial potential. Research showed that developing metacognitive CQ helps build entrepreneurial mindsets most effectively in diverse cultural settings.

In 2023, Goh and colleagues studied how cultural intelligence affects entrepreneurship among university students in Malaysia. They used surveys and interviews with 200 students to gather a mix of data. The study showed that students with high metacognitive cultural intelligence (CQ) could handle complex business situations more effectively. This ability led to a greater desire to start their own businesses and succeed. The research stressed the need to develop strategies for better cultural adaptability, which is crucial for entrepreneurs in diverse environments.

In 2022, Zhang and colleagues conducted research on the connection between metacognitive cultural intelligence and startup performance in China. They gathered information through surveys from 150 startup founders. The findings revealed that metacognitive CQ had a positive impact on

business performance by improving problem-solving and decision-making skills. The study concluded that enhancing metacognitive cultural intelligence in entrepreneurs could lead to improved performance, especially when working across different cultures.

3. Methodology

4. Results

4.1 Response Rate

In this study, questionnaire was used to obtain the needed data. The total of 119 responses were recorded which represent the 79.9% of the estimated sample size, which remain 30 responses to meet up the estimated sample size. Hence, the valid responses constitute the data used in this study.

4.2 Descriptive Analysis of Responses and Normality test

Table 1

Descriptive Analysis and Normality Test

	Mean	Standard Deviation	Excess Kurtosis	Skewness	Number of Observations Used
Adaptability 1	3.361	1.207	-0.728	-0.409	119.000
Adaptability 2	3.529	1.242	-0.696	-0.587	119.000
Cognitive Flexibility 1	3.387	1.278	-0.941	-0.417	119.000
Cognitive Flexibility 2	3.235	1.281	-1.108	-0.160	119.000
Cultural Empathy 1	3.403	1.318	-0.891	-0.468	119.000
Cultural Empathy 2	3.622	1.223	-0.639	-0.608	119.000
Entrepreneurial Growth 1	3.303	1.400	-1.126	-0.388	119.000
Entrepreneurial Growth 2	3.765	1.248	-0.614	-0.725	119.000
Entrepreneurial Growth 3	3.891	1.333	-0.417	-0.939	119.000

Source: SmartPLS Output, 2025

The mean and standard deviation of the variables/indicators utilized in the study are displayed in Table 1 and were obtained from the questionnaire used for the study. The study looked at the relationship between metacognitive cultural intelligence and entrepreneurial growth. A number of important indicators were evaluated, each of which provided insight into a distinct facet of the relationship. For both academics and practitioners, the mean scores, standard deviations, and number of observations utilized for each indicator offer insightful information and important consequences. The comparatively high mean score (above 3) for the questions indicates that respondents believe there is a strong correlation between entrepreneurial development and metacognitive cultural intelligence.

Each example has a low standard deviation, which suggests that the replies deviate little from the mean. These descriptive results underscore the multifaceted nature of metacognitive cultural intelligence on entrepreneurial growth. These emphasize the importance of entrepreneurial growth through a successful metacognitive cultural intelligence.

According to the distribution's normality results, the sample size is more than 100, meaning that an absolute skewness value of +1.0 or less is required for the data to be

considered normal. Additionally, for a typical peakedness, kurtosis should have an absolute value of ±3.0 since any value below that threshold might be serious and cause worry. According to the normality results, every variable fell below the ±1.0 absolute value barrier, and the kurtosis results likewise fell within the ±3.0 absolute value. The results of the normality test indicate that all of the data entered for the study are normally distributed and suitable for additional analysis and deductions. This implies that all of the variables used to assess metacognitive cultural intelligence have a moderate mean with little deviation from the mean, and that they are all normally distributed, suggesting that the variables are helpful in establishing the causal relationship between entrepreneurial growth and metacognitive cultural intelligence. This suggests that the variables used to assess metacognitive cultural intelligence are all normally distributed, have a moderate mean with little deviation from the mean, and are useful in establishing the causal relationship between entrepreneurial growth and metacognitive cultural intelligence.

4.3 Assessment of Measurement Model

To assess the effect of metacognitive cultural intelligence on entrepreneurial growth, the variables used to measure metacognitive cultural intelligence are cognitive flexibility, cultural empathy, and adaptability against Entrepreneurial growth.

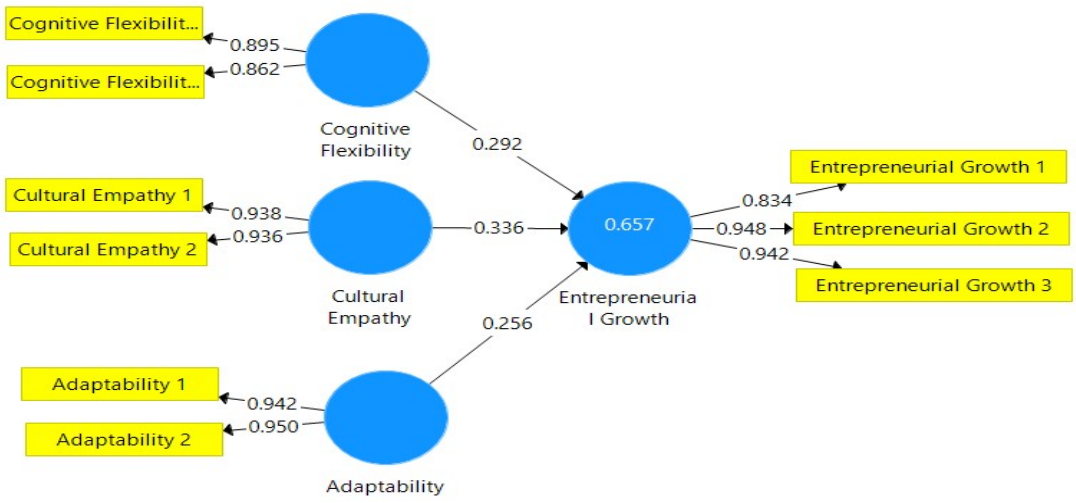


Figure 1

A path model of metacognitive cultural intelligence and entrepreneurial growth

Source: SmartPLS Output, 2025

Figure 1 showed the structural path model assesses the effect of metacognitive cultural intelligence on entrepreneurial growth. The model includes three independent variables:

cognitive flexibility, cultural empathy, and adaptability, and one dependent variable: entrepreneurial growth. The model's results demonstrate that all three independent factors have a strong beneficial impact on entrepreneurial development. This suggests that metacognitive cultural intelligence is crucial for firms since it can promote entrepreneurial growth. The particular effects indicate that all of the independent factors have a significant impact on entrepreneurial success. This suggests that firms should focus on establishing metacognitive cultural intelligence in order to boost entrepreneurial success.

Table 2

Construct Reliability and Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Adaptability	**0.884**	**0.945**	**0.896**
Cognitive Flexibility	**0.706**	**0.871**	**0.772**
Cultural Empathy	**0.862**	**0.935**	**0.878**
Entrepreneurial Growth	**0.895**	**0.935**	**0.827**

Source: Authors' Compilation (SmartPLS 3.2.9 Output) 2025

Key statistical indicators for the validity and construct reliability of the four latent variables in this study are displayed in Table 2. The robustness of these variables in evaluating the underlying concepts they are meant to represent is determined in part by these metrics. Cronbach's Alpha and composite dependability are two crucial measures used to assess construct dependability. By measuring how closely each item is related to every other item, Cronbach's Alpha evaluates the internal consistency of a latent variable. High quality is suggested by the four latent variables' internal consistency values, which are larger than 0.7. Since these values are significantly higher than the widely accepted cutoff criteria of 0.7, they demonstrate that the items within each variable are trustworthy markers of the pertinent constructs. A construct reliability metric called composite reliability considers both internal consistency and the connections between the components and the hidden variable. A more reliable measure of dependability was provided by the strong composite reliability of all the variables in this study, with all values more than 0.7. These high numbers imply that the latent factors effectively influence the constructs they stand for.

The Average Variance Extracted (AVE), which gauges each latent variable's convergent validity, is also included in the table. Convergent validity is the degree to which items in a variable are closely connected to one another and evaluate the same underlying concept. All of the AVE values in the table are higher than the recommended cutoff of 0.5. This implies that each latent variable's items are converging and effectively measuring the corresponding constructs. The findings show that this study's latent variables have good construct validity and reliability. These variables may be included as reliable and valid measures in the study since they exhibit great composite reliability, acceptable internal consistency, and satisfactory convergent validity.

Table 3

Discriminant Validity

	Adaptability	Cognitive Flexibility	Cultural Empathy	Entrepreneurial Growth
Adaptability	**0.946**			
Cognitive Flexibility	**0.759**	**0.879**		
Cultural Empathy	**0.777**	**0.748**	**0.937**	
Entrepreneurial Growth	**0.739**	**0.738**	**0.753**	**0.910**

Source: Authors' Compilation (SmartPLS 3.2.9 Output) 2025

Table 3 demonstrates the exceptional discriminant validity of the latent variables of cultural empathy, entrepreneurial growth, cognitive flexibility, and adaptability. If these ideas are distinct and not closely related to one another, discriminant validity establishes this. The diagonal values, or the correlations between each variable and itself, are all noticeably greater than the off-diagonal values when looking at the correlations between these variables. The idea that each latent variable is distinct and measures a separate aspect of the overall construct is supported by the implication that each latent variable has a stronger association with itself than with the other constructs. The relationship between entrepreneurial growth and itself is stronger than that between cognitive flexibility, adaptability, and cultural sensitivity. In a similar vein, cultural empathy has a larger correlation with itself than with the other variables. This also holds true for other variables in their own contexts. These results show that rather than measuring different manifestations of the same underlying thing, the latent variables in our study measure different notions. The evaluation paradigm's capacity to differentiate between four crucial elements adaptability, cognitive flexibility, entrepreneurial growth, and cultural empathy demonstrates that it is suitable for the goals of this investigation.

4.4 Multicollinearity

This evaluates the independent variable's correlation. The purpose is to determine whether two independent variables are not associated and yielding same results. In this study, the expected association between the independent variables is evaluated using the variance inflation factor (VIF).

Table 4

Inner VIF Values

	Adaptability	Cognitive Flexibility	Cultural Empathy	Entrepreneurial Growth
Adaptability				**3.087**
Cognitive Flexibility				**2.772**
Cultural Empathy				**2.964**
Entrepreneurial Growth				

Source: Authors' Compilation (SmartPLS 3.2.9 Output) 2025

The VIF values for the latent variables associated with entrepreneurial growth are shown in Table 4. It is encouraging that the VIF scores for cultural empathy, cognitive flexibility, and adaptability are all far below the cutoff point of 10. It implies that these latent variables do not exhibit significant multicollinearity. Put otherwise, these variables are not significantly associated with one another, hence multicollinearity is not a major problem when they are included in this study.

4.5 Test of Hypothesis One

Table 5

Coefficient of Determination Score

	R Square	R Square Adjusted
Entrepreneurial Growth	**0.657**	**0.649**

Source: Authors' Compilation (SmartPLS 3.2.9 Output) 2025

A model's degree of fit is indicated by its coefficient of determination, or R-squared, which is shown in Table 5. The independent or latent variables included in the Entrepreneurial Growth Model account for about 65.7% of the variability seen in the dependent variable (entrepreneurship growth), according to the

model's R-squared score of 0.657. This implies that the observed differences in buying experiences are captured and explained by the model. 0.649 is the revised R-squared value. Consequently, the degree of fit of the model is evaluated more cautiously. Including the independent variables in the model is unlikely to cause overfitting or undue complexity, as evidenced by the adjusted R-squared value being almost equal to the traditional R-squared value. This implies that the model's explanatory power remains strong even after taking potential issues with model complexity into consideration. The R-squared and modified R-squared values show that the entrepreneurial growth model is rather good at describing entrepreneurial growth variability, suggesting that the inclusion of many latent variables does not appear to have a detrimental influence on the model's performance.

Table 6

Assessment of the Effect Size (f2)

	Adaptability	Cognitive Flexibility	Cultural Empathy	Entrepreneurial Growth
Adaptability				**0.062**
Cognitive Flexibility				**0.090**
Cultural Empathy				**0.111**
Entrepreneurial Growth				

Source: Authors' Compilation (SmartPLS 3.2.9 Output) 2025

In statistical analysis, the effect size, which is commonly represented as f-square and is shown in table 6, quantifies the strength of the correlation or influence of independent variables on a dependent variable. This study evaluates how much each latent variable affects "entrepreneurial growth." Every independent variable has a value greater than 0.02, which is regarded as a minor effect size. This implies that every variable has a moderate effect size, meaning that each one has a discernible effect on the rise of entrepreneurship. Stated differently, variations in any of the factors can account for a moderate amount of the variation in entrepreneurial growth.

Table 7

Bootstrapping Results Showing Path Coefficient for Structural Model

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Adaptability -> Entrepreneurial Growth	**0.256**	**0.250**	**0.098**	**2.600**	**0.010**
Cognitive Flexibility -> Entrepreneurial Growth	**0.292**	**0.296**	**0.097**	**2.997**	**0.003**
Cultural Empathy -> Entrepreneurial Growth	**0.336**	**0.340**	**0.097**	**3.464**	**0.001**

Source: Authors' Compilation (SmartPLS 3.2.9 Output) 2025

The null hypothesis that metacognitive cultural intelligence has no discernible impact on entrepreneurial growth was tested using the bootstrap route coefficient analysis shown in table 7. The findings show that cultural empathy, cognitive flexibility, and adaptability all components of metacognitive cultural intelligence have a major impact on the development of entrepreneurs. The association between adaptability, cognitive flexibility, and cultural empathy and entrepreneurial success is statistically significant, according to an analysis of the path from these traits to entrepreneurial

growth. Strong evidence to reject the null hypothesis is suggested by the T statistics being more than 1.96 and the p-values being less than the traditional significance level of 0.05. Thus, the characteristics of metacognitive cultural intelligence adaptability, cognitive flexibility, and cultural empathy all have a major impact on entrepreneurial growth.

5. Discussion of Findings

The purpose of the study was to ascertain how metacognitive cultural intelligence affected entrepreneurial growth. Data reveals a direct connection between cultural empathy and entrepreneurial growth which confirms that effective student entrepreneurs who understand different cultures gain better competitive advantages in international markets. The cultural sensitivity of entrepreneurs allows them to create solutions which meet specific requirements of multiple clientele groups and additionally establish dependable connections with clients from diverse backgrounds and successfully execute multicultural business transactions. Organizations competent in cultural empathy establish superior capabilities for market expansion and they develop inclusive innovation capabilities while earning loyal customers from diverse backgrounds. This is supported by the study of Dong and Li (2024).

The positive effect of cognitive flexibility on entrepreneurial growth demonstrates that adaptable student entrepreneurs succeed better at finding new business potentials and addressing complex issues. The flexible nature of entrepreneurship helps business owners apply different cultural perspectives for solving challenges and unite divergent concepts into innovative approaches while finding entrepreneurial prospects that conventional competitors overlook. Leadership teams that enhance their cognitive flexibility enable organizations to handle market changes better and generate fresh product innovations and original business approaches. This is supported by the study of Goh *et al.*, (2023).

Student entrepreneurs gain better entrepreneurial growth by adapting their behavior to various cultural contexts which leads to superior business outcomes in dynamic global markets. Entrepreneurs gain opportunity through behavioral agility when they transform their communication approaches and adopt business procedures while reorganizing operations to match the expectations of various stakeholders. Businesses which make adaptability their core competency enable better market condition navigation while consolidating robust supply chains between cultures to execute successful internationalization plans at a local level. This is supported by the study of Zhang *et al.*, (2022).

6. Conclusion and Recommendations

The study concluded that:

Cultural empathy stands out as the primary factor that drives entrepreneurial development through metacognitive cultural intelligence because it demonstrates why companies must grasp different cultural viewpoints in their current global business environment. The success of entrepreneurship in modern business relies heavily on establishing meaningful connections between people from different cultures to develop business models which engage various stakeholders. A company's commitment to cultural empathy needs to be seen as a fundamental business strategy producing competitive edge and market growth sustainability across various multicultural settings.

The capacity known as cognitive flexibility enables business entrepreneurs to unite various cultural information systems and

transform their mental processing capabilities when dealing with complex business dilemmas across multi-cultural settings. Business success demands entrepreneurial adaptability in multicultural contexts because entrepreneurs must reroute themselves through multiple cultural views while observing repeated patterns and merging opposing business information into structured plans. Organizations need to enable cognitive flexibility at all levels of their organization to improve competitive performance in the face of rapidly changing multicultural business environments.

Entrepreneurs need operational flexibility through adaptability to exchange cultural knowledge and mental insights into appropriate action methods across all ethnic contexts. The advancement of entrepreneurial growth demands behavioral flexibility since it requires executives to modify their business operations according to varying cultural norms and market conditions. Organizations and their employees need to develop flexible capabilities to execute their internationalization plans and maintain cross-cultural alliances and operational systems suitable for various global markets.

The study recommended that:

To increase the entrepreneurial growth of registered student entrepreneurs in the University of Ilorin, student entrepreneurs should engage in interactive cross-cultural learning experiences that pursue cultural empathy development through established programs of intercultural interactions with diverse student communities. They must engage in cultural mentorship programs which can match them with mentors who hail from various cultural backgrounds so entrepreneurs can gain better understanding of different cultures while receiving guidance about local business practices.

Student entrepreneurs should engage in programs of cognitive flexibility training that teach entrepreneurs about diverse cultural situations through different business scenarios while teaching them how to change cultural perspectives and look at situations from diverse viewpoints. They need to build multicultural innovation teams by selecting members from different cultures and develop formal processes which maximize cognitive diversity to develop superior problem-solving and opportunity recognition.

Student entrepreneurs should create complete cultural adaptation manuals to serve as a practical tools for adjusting their business processes and communication methods as well as operational systems in new cultural environments. They must establish periodic cross-cultural simulations as well as role-playing exercises which let them develop their adaptability through low-risk training ahead of deploying these skills in vital business environments across cultural contexts.

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