

Bridging Values and Ventures: Education for Entrepreneurial Sustainability

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Abstract: This research examines the effect of cultural values (CV) on entrepreneurial innovation (EI). It also assesses the mediating influence of educational entrepreneurship (EE) in the CV–EI relationship and further explores the impact of EI on attitudes towards sustainable entrepreneurship (SE). Data were obtained from business students with family business backgrounds. A total of 506 respondents were selected through purposive sampling from multiple business schools located in a southern region of the country. The data were analysed using Smart-PLS-4, while Importance–Performance Map Analysis (IPMA) was employed to validate the results and derive actionable insights. Findings reveal a significant relationship between CV and EI, with EE strengthening this linkage. In addition, EI is found to positively shape attitudes towards SE. Overall, the results highlight the critical role of entrepreneurial education in encouraging students to pursue entrepreneurial activities.

Keywords: Cultural Value, Entrepreneurial Innovativeness, Entrepreneurial Education, Sustainable Entrepreneurship, IPMA.

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1. Introduction

Sustainable entrepreneurship (SE) has increasingly become a central focus of academic discourse over the past decade, reflecting growing global concern regarding environmental conservation (Genus, 2021; Shepherd & Patzelt, 2011; Wagner et al., 2021). Intensifying awareness of ecological degradation has stimulated SE, which seeks to align economic progress with environmental sustainability through innovative approaches. Simultaneously, a range of interconnected global challenges, including armed conflicts, climate change, pandemics, resource depletion, and widening income inequality (Reddy, 2024), pose substantial risks to human well-being, social stability, and ecological balance.

Despite heightened attention to environmental issues, concerns persist regarding society's ability to effectively implement and monitor environmentally responsible practices that can foster sustainable development through entrepreneurial activity. In this context, there is an urgent need for India (Kulkarni, 2012) to integrate circular economy (CE) principles (Mafatlal, 2024) into its educational system. The “Start-up India” initiative, supported by the government, aims to strengthen the entrepreneurial ecosystem. As a result of such policy support, India has emerged as the third-largest global hub for innovation, CE practices, and environmentally responsible business models (Press Information Bureau, 2023). According to the World Bank's Doing Business Report (DBR) published in 2020, India's ranking improved significantly from 142nd position in 2014 to 63rd in 2019, reflecting an advancement of 79 positions within five years.

Consequently, India has become an increasingly attractive destination for international entrepreneurial ventures (Shukla et al., 2024). Alongside investment attractiveness, the Global Entrepreneurship Monitor (GEM, 2023) identifies cultural and social norms as key elements within entrepreneurial framework conditions (EFCs). Existing literature has extensively examined the advantages of integrating SE with long-term business performance, particularly in relation to firm outcomes, market positioning, and employee satisfaction (Egieya et al., 2023). Beyond firm-level effects, Yasir et al. (2022) highlight that individual attitudes and social networks play a crucial role in establishing eco-friendly enterprises, alongside personal values, based on empirical evidence from Pakistan. Similarly, Hirschfeld and Wagner (2022) demonstrate, through experimental research in Germany, that sustainable entrepreneurial identity is shaped by sustainability orientations, entrepreneurial attitudes, and social norms.

This study is grounded in two theoretical perspectives: Cochran's Cultural Theory of Entrepreneurship (CTE) and the Exposure Theory of Entrepreneurship (ETE). CTE emphasises the central role of cultural and social norms in new venture creation, highlighting

role expectations and social sanctions, and was originally developed in 1965. In contrast, ETE challenges this view by arguing that exposure to innovation and shared value systems—particularly among groups such as Marwadi, Sindhi, Jain, Parsi, and Hindu communities—serves as a key antecedent for entrepreneurial activity in production-oriented enterprises.

1.1. Rationale of the Study

This study examines the influence of CV on EI and how this relationship subsequently shapes attitudes towards SE. Existing literature confirms that CV significantly determines entrepreneurial intentions; however, further empirical attention is required to understand this relationship in depth within the Indian context, where entrepreneurial behaviour is strongly embedded in community-specific cultural practices. The study further investigates the role of EE in enhancing EI among individuals influenced by CV. Although CV is strongly associated with entrepreneurial intentions, the development of innovativeness is often contingent upon targeted education and training. Accordingly, this research conceptualises EE as a facilitating mechanism that strengthens innovative capabilities among culturally embedded individuals, thereby encouraging more sustainability-oriented entrepreneurial behaviour. The study is structured around three core objectives: first, to analyse the effect of CV on EI; second, to evaluate the mediating role of EE in reinforcing EI; and third, to determine the extent to which EI contributes to favourable attitudes towards SE. By addressing these objectives, the research aims to offer a clearer understanding of the interrelationship between culture, education, and innovation in advancing sustainable entrepreneurial outcomes.

2. Literature Review

2.1. Underpinning Theoretical Concepts (Cochran's Cultural Theory of Entrepreneurship)

CTE proposes that individuals function as social agents within the business environment, enabling an understanding of how cultural values interact with entrepreneurial activity. Within this framework, role expectations, role conflicts, and role performance illuminate both agentic capacities and institutional constraints that shape entrepreneurial behaviour. Furthermore, the extent to which social structures reward or penalise actions reflects underlying cultural norms, which in turn influence patterns of social interaction and contribute to societal stability. Another key dimension of Cochran's argument is that innovation is largely shaped by society rather than being solely an individual-driven process. In this regard, entrepreneurial behaviour has historically been constrained by prevailing social norms and cultural ethos, particularly in the American context. He also distinguished between value systems—such as efficiency, profit orientation, honesty, and pragmatism—and broader national cultural characteristics, including individualism, self-determination, and action-oriented thinking (Aitken, 1965).

Although early social historians such as Frederick Jackson Turner and Charles A. Beard (early 20th century) recognised Cochran's (1965) contribution to understanding cultural influences on entrepreneurship, later scholars further refined the theory. Chetty (2020) concluded that entrepreneurial problem-solving behaviour is shaped by cultural norms, social conventions, and occupational expectations (Pawar, 2013). Extending this perspective, entrepreneurs and business founders are conceptualised as exhibiting a modal personality type (Du Bois, 1944) rather than being viewed as exceptional or extraordinary individuals.

2.2. Exposure Theory of Entrepreneurship

Mahajan (2014) articulated the ETE, proposing that a combination of individual schooling, Cultural Norms (CN), inspiration, economic conditions, pursuit of excellence, religious doctrines, and risk-taking propensity collectively shapes innovative cognition and facilitates entrepreneurial opportunity recognition. These exposure-related determinants are considered central in developing entrepreneurial thinking and enabling individuals to identify viable opportunities in dynamic environments. In the Indian socio-cultural context, Shankar (2016) highlights that religious affiliations and social hierarchy significantly shape individual attitudes and behavioural dispositions.

The same study further argues that integrating intersectional dimensions of business history into EE can broaden learners' perspectives by exposing them to historical entrepreneurial experiences. This approach enables students to understand structural configurations and strategic decisions adopted by successful entrepreneurs, thereby strengthening contextual learning. Extending the ETE framework, Li et al. (2020) emphasise that exposure to unexplored domains and engagement in creative cognition significantly enhance entrepreneurial activity within the economic landscape. Moreover, empirical evidence using Structural Equation Modelling (SEM) confirms that prior entrepreneurial exposure substantially increases female participation in venture creation (Botha, 2020). In this regard, antecedent exposure factors include entrepreneurial role models, self-employed parents, CV, and prior exposure to innovation-driven environments, collectively reinforcing entrepreneurial engagement and opportunity development.

2.3. Hypothesis Development

2.3.1. Culture Value and Entrepreneurial Innovativeness

CV significantly influence individuals'—particularly students'—attitudes towards risk, uncertainty, and innovation, thereby shaping EI within academic communities. Hofstede's cultural dimensions framework (2011), including uncertainty avoidance, individualism versus collectivism, and power distance, plays a crucial role in determining entrepreneurial behaviour and innovation outcomes (Hayton et al., 2002). In individualistic cultural settings, emphasis on personal achievement, autonomy, and self-direction tends to foster stronger entrepreneurial innovativeness. Such societies are generally more inclined towards risk-taking and self-reliance, which supports entrepreneurial development. In contrast, collectivist cultures prioritise group goals and social harmony; although these contexts may impose constraints through social norms and expectations, they can also encourage creativity through collaboration and collective problem-solving (Mueller & Thomas, 2001). Accordingly, Hofstede's framework provides a robust lens for conceptualising national culture as a key determinant of EI.

Further elaboration of Hofstede's model (2001) indicates that cultures characterised by low uncertainty avoidance demonstrate greater tolerance for ambiguity, thereby fostering openness to risk and entrepreneurial experimentation. Conversely, high uncertainty avoidance societies tend to exhibit resistance to innovation due to risk aversion and adherence to conservative norms. In the present study, the Cultural Values construct is operationalised through six dimensions: High Collectivism (HC), Indulgence (IND), Low Power Distance (LPD), Long-Term Orientation (LTO), Low Uncertainty Avoidance (LUA), and Masculinity (MAS). These dimensions collectively represent key cultural

orientations that influence entrepreneurial behaviour. To ensure a comprehensive and contemporary representation of cultural influences, these dimensions are integrated from established cultural frameworks, including Yoo et al. (2011), Wu (2006), Urban and Ratsimanetrimanana (2015), Ahmad (2007), and Hofstede's foundational work. Empirical literature linking CV and EI further supports these relationships. For instance, Tehseen et al. (2023), in a study of Malaysian immigrant entrepreneurs in the retail sector, found that indulgence, low power distance, and collectivism are positively associated with entrepreneurial innovativeness. Similarly, López-Cabarcos et al. (2021) examined culture, entrepreneurship, and orientation at the country level and reported that long-term orientation, individualism, and indulgence significantly contribute to a nation's innovation ecosystem.

H1: Cultural value is significantly associated with entrepreneurial innovation.

2.3.2. Entrepreneurial Innovativeness and Attitude towards Sustainable Entrepreneurship

According to the Dana (2021), SE describes the interaction between sustainable business practices and entrepreneurship. It functions as an umbrella construct encompassing related concepts such as circular entrepreneurship, ecopreneurship, and green entrepreneurship. Muñoz and Cohen (2018) conceptualise SE in response to environmental degradation and social inequality, positioning it as a response-oriented entrepreneurial paradigm. Entrepreneurs aligned with the Triple Bottom Line (TBL) approach, as per prior literature, actively engage in social impact initiatives through collaboration with governments, communities, and other societal stakeholders to influence regulatory structures and social norms. From a theoretical perspective, prior literature emphasises that the integration of creative thinking and entrepreneurship is a key driver of economic transformation. However, despite contributing to economic growth, capitalist systems and innovative entrepreneurship may also generate adverse environmental and social consequences, often exacerbated by market imperfections (Cohen et al., 2008).

H2: Entrepreneurial innovativeness is significantly associated with attitude towards sustainable entrepreneurship.

2.3.3. Mediating Relationship (Cultural Value, Entrepreneurial Education and Entrepreneurial Innovation)

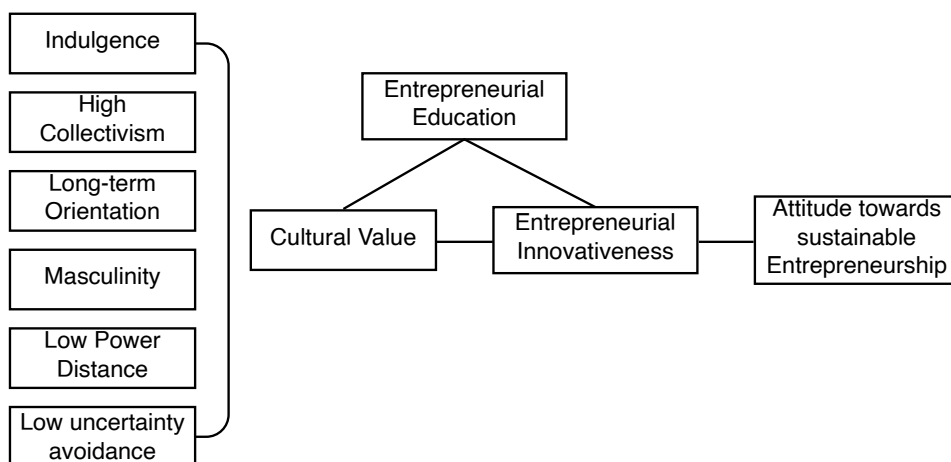
CV encapsulates foundational elements such as shared understandings, values, beliefs, opinions, and norms that remain relatively stable over time (Davidsson & Wiklund, 1997; House et al., 2002). It also extends to customary practices, traditions, behavioural patterns, occupational orientations, and symbolic communication systems that collectively differentiate one society from another. Prior scholarship (Gurel et al., 2010; Mueller & Thomas, 2001) emphasises that entrepreneurial activity is deeply embedded within individuals' social and cultural contexts. The development of entrepreneurial activity contributes significantly to national economic growth; however, it requires adequate structural and institutional support to enable individuals to establish ventures. Such support systems include CV, EE, market openness, competitive intensity, built infrastructure, technology licensing mechanisms, research and development capacity, and government regulatory frameworks (Jakubczak & Rakowska, 2014).

Academic institutions play a central role in fostering innovative thinking by integrating

EE into curricula, thereby cultivating an environment that promotes originality, experimentation, and calculated risk-taking. This process supports learners with basic conceptual knowledge in identifying viable business opportunities and progressively enhances their ability to evaluate such opportunities using established knowledge frameworks (Gielnik et al., 2012; Kakouris & Liargovas, 2021; Karimi et al., 2016; Shane & Venkataraman, 2000; Sitaridis & Kitsios, 2023). Furthermore, Chakraborty and Sadachar (2022) argue that EE strengthens CV by enabling individuals to effectively utilise traditional knowledge systems, norms, conventions, and resources in an entrepreneurial context.

H3: Entrepreneurial Education mediates the relationship between cultural value and entrepreneurial innovation.

Figure 1: Hypothesised Model.



Source: Author(s)

3. Methodology

This study examines three core research objectives: (i) the relationship between CV and EI, (ii) the moderating role of EE in the relationship between CV and EI, and (iii) the relationship between EI and attitudes towards SE.

3.1. Measures

To examine the relationships among the specified variables, the study employed established measurement scales. CV was operationalised using Hofstede's six cultural dimensions: HC, IND, MAS, LTO, LUA, and LPD. CV is conceptualised as a reflective–reflective second-order construct comprising multiple first-order dimensions that collectively represent the broader cultural system. Together, these dimensions form a coherent higher-order construct, with each dimension capturing a distinct cultural orientation. IND was measured using five items adapted from Urban and Ratsimanetrimanana (2015), HC using five items from Wu (2006) and Yoo et al. (2011), LTO using three items from Yoo et al. (2011), MAS using four items derived from Hofstede (1980, 1983, 2001), LPD using five items from Yoo et al. (2011), and LUA

using seven items from Ahmad (2007). EI was measured using six items adopted from Idris (2011). Similarly, EE was assessed through six items, while SE was measured using six items capturing respondents' attitudes towards SE.

3.2. Sample and Data Collection

To test the hypotheses, purposive sampling was employed to collect data from higher education students enrolled in business schools in Visakhapatnam. The sample inclusion criteria required participants to belong to business-oriented families and to have either completed or undergone training related to entrepreneurship within business schools. Selected institutions provided students with exposure to extracurricular engagement alongside standard academic credit requirements, including optional entrepreneurship-related courses. These activities comprised entrepreneurship clubs that disseminate knowledge and develop skills on campus, regional, university, and national-level business plan competitions, internships and enterprise visits, direct interaction with entrepreneurs, incubator-based projects, and virtual entrepreneurial simulations or seminars. To ensure clarity and validity of the research instrument, a pilot study was conducted with 50 students, including 10 in-depth interviews. Subsequently, 1,120 responses were collected, of which 506 were deemed valid for analysis. The final sample consisted of 52% students from science and engineering disciplines, 37% from management, and 11% from humanities and social sciences. The valid sample included 41% female and 59% male respondents.

3.3. Data Analysis

The collected data were analysed using SmartPLS 4 to perform SEM and hypothesis testing. This analytical approach was selected based on the characteristics of the data, sample structure, and the presence of moderation effects. Moreover, PLS-SEM has gained increasing prominence in management and related disciplines (Dash & Paul, 2021). In business and management research, PLS-SEM is widely recognised as a robust analytical framework for empirical reporting (Sarstedt et al., 2014). SEM is a second-generation multivariate data analysis technique that examines theoretically specified linear and additive causal relationships (Eisenhauer et al., 2015; Little, 2024). It enables researchers to evaluate interrelationships among multiple latent constructs simultaneously (Hair et al., 2012). Given the complexity of SEM models and the presence of unobservable latent variables, PLS-SEM is considered particularly suitable for assessing both direct and indirect effects within structural models (Lai & Hsiao, 2022).

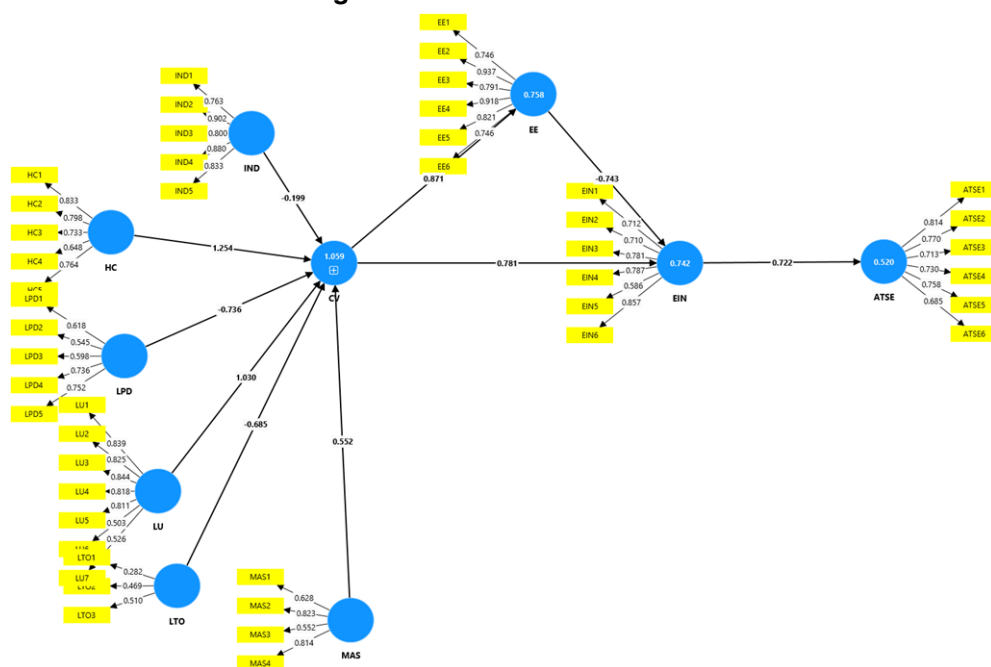
4. Results

4.1. Measurement Model

To assess construct reliability and validity, the study employed the measurement model evaluation approach, focusing on Composite Reliability (CR), Cronbach's Alpha (CA), and Average Variance Extracted (AVE). Reliability was examined using both CA and CR. Table 1 presents the results for CA and CR as follows: SE (0.883, 0.885), EE (0.929, 0.935), EI (0.881, 0.888), and CV (0.946, 0.952). All values exceeded the recommended threshold of 0.70, confirming acceptable internal consistency (Koufteros, 1999). Convergent validity was assessed through AVE. The AVE values

reported were SE (0.557), EE (0.689), EI (0.552), and CV (0.390). Although the AVE for CV is below the conventional 0.50 threshold, it is still considered acceptable when CR exceeds 0.70. This is particularly relevant for multidimensional constructs, where conceptual breadth may reduce shared variance among indicators. Given that CV comprises multiple culturally embedded dimensions, its high CR values (>0.70) indicate satisfactory reliability, supporting the acceptability of the AVE–CR criterion within the theoretical framework. In addition, indicator reliability was examined through factor loadings. All indicators demonstrated loadings above the 0.70 threshold, confirming adequate item-level reliability (Afthanorhan, 2014).

Figure 2: Measurement Model.



Source: Author(s)

Discriminant validity was assessed using the heterotrait–monotrait (HTMT) ratio (Henseler et al., 2012). HTMT represents the ratio of the average correlations between indicators of different constructs to the average correlations of indicators within the same construct. As reported in Table 2, all HTMT values were below the recommended threshold of 0.85, except for the relationship between the constructs of individual assessment and individual stimulation. In addition, multicollinearity was examined through Variance Inflation Factor (VIF) values. According to Hair et al. (2019), VIF values of 3 or below are considered acceptable. Although some VIF values were close to 3, they remained within acceptable limits for PLS-SEM analysis. Furthermore, Kock (2015) proposes a more conservative threshold of 3.3 for detecting pathological collinearity, while Hair et al. (2021) indicate that values below 5 generally do not indicate serious multicollinearity concerns. In this study, all VIF values remained below 3.3, confirming the absence of multicollinearity that could compromise coefficient stability.

or the interpretation of structural relationships. Overall, the results (Table 3) confirm that multicollinearity does not pose a concern in the dataset.

Table 1: Measurement Model.

Construct	Items	Factor Loading	Alpha	CR (rho_a)	AVE
ATSE (Attitude towards Sustainable entrepreneurship) (Yasir, et al., 2019 and Bandura, 1986).	ATSE1	0.814	0.883	0.885	0.557
	ATSE2	0.770			
	ATSE3	0.713			
	ATSE4	0.731			
	ATSE5	0.758			
	ATSE6	0.786			
EE (Entrepreneurial Education) Linan and Chen (2009)	EE1	0.745	0.929	0.935	0.689
	EE2	0.939			
	EE3	0.790			
	EE4	0.919			
	EE5	0.819			
	EE6	0.746			
EIN (Entrepreneurial Innovativeness) Idris (2011)	EIN1	0.798	0.881	0.888	0.552
	EIN2	0.732			
	EIN3	0.789			
	EIN4	0.795			
	EIN5	0.768			
	EIN6	0.845			
HC (High Collectivism) Wu (2006); Yoo et al. (2011)	HC1	0.747	0.872	0.874	0.575
	HC2	0.713			
	HC3	0.749			
	HC4	0.768			
	HC5	0.773			
	IND1	0.738			
IND (Indulgence) Urban and Ratsimanetrimanana (2015)	IND2	0.776	0.921	0.924	0.701
	IND3	0.771			
	IND4	0.746			
	IND5	0.799			
	LPD1	0.755			
	LPD2	0.788			
LPD (Lower Power Distance) Yoo et al. (2011)	LPD3	0.725	0.795	0.797	0.429
	LPD4	0.746			
	LPD5	0.767			
	LTO1	0.787			
	LTO2	0.752			
	LTO3	0.723			
LTO (Long-term Orientation) Yoo et al. (2011)	LUA1	0.721	0.756	0.720	0.588
	LUA2	0.703			
	LUA3	0.725			
	LUA4	0.702			
	LUA5	0.792			
	LUA6	0.745			
LUA (Low Uncertainty Avoidance) Ahmad (2007)	LUA7	0.766	0.886	0.913	0.564
	MAS1	0.725			
	MAS2	0.767			
	MAS3	0.747			
	MAS4	0.769			
	MAS4	0.769			

Table 2: Discriminant Validity (HTMT).

	ATSE	CV	EE	EIN	HC	IND	LPD	LTO	LUA	MAS
ATSE										
CV	0.724									
EE	0.524	0.839								
EIN	0.713	0.788	0.494							
HC	0.577	0.841	0.807	0.565						
IND	0.548	0.848	0.972	0.499	0.805					
LPD	0.571	0.855	0.620	0.610	0.835	0.622				
LTO	0.618	0.848	0.540	0.847	0.623	0.543	0.681			
LUA	0.749	0.852	0.614	0.744	0.684	0.630	0.775	0.806		
MAS	0.639	0.826	0.505	0.977	0.546	0.505	0.619	0.799	0.744	

Table 3: Collinearity Statistics (VIF).

Items	VIF	Items	VIF	Items	VIF
ATSE1	1.908	EIN5	1.713	LPD5	1.97
ATSE2	2.117	EIN6	2.175	LTO1	1.278
ATSE3	1.909	HC1	2.207	LTO2	1.26
ATSE4	2.091	HC2	2.013	LTO3	1.019
ATSE5	2.099	HC3	2.931	LUA1	3.856
ATSE6	1.724	HC4	2.762	LUA2	3.975
EE1	2.207	HC5	3.177	LUA3	3.948
EE2	3.042	IND1	2.201	LUA4	3.395
EE3	2.643	IND2	2.996	LUA5	2.663
EE4	3.327	IND3	2.555	LUA6	1.485
EE5	3.328	IND4	3.269	LUA7	1.487
EE6	2.457	IND5	3.050	MAS1	1.773
EIN1	1.929	LPD1	2.386	MAS2	2.083
EIN2	1.818	LPD2	2.152	MAS3	1.54
EIN3	2.108	LPD3	1.891	MAS4	1.842
EIN4	2.084	LPD4	2.067		

4.2. Structural Model

Bootstrapping with 5,000 resamples was employed to estimate path coefficients and assess statistical significance. The results, including path coefficients, t-values, and significance levels, are presented in Table 4. The findings indicate that CV has a positive and statistically significant effect on EI ($\beta = 1.062$, $t = 11.735$, $p < 0.05$). Similarly, EI has a positive and significant effect on SE ($\beta = 0.639$, $t = 11.452$, $p < 0.05$). Accordingly, H1 and H2 are supported. Although the relationship between CV and EI is statistically significant, the effect size is relatively modest in strength. To examine the mediating role of EE and to further strengthen the structural model, bootstrapping was again applied. The mediation results are reported in Table 5. The indirect effect of EE in the relationship between CV and EI is significant (STDEV = 0.062, $t = 5.532$), indicating partial mediation within the model.

The mediation logic follows the standard causal mechanism whereby X influences Y, X affects Z, and Y significantly affects Z while controlling for X; in this case, Y functions as a mediator variable. When Y is included in the model as an explanatory pathway between X and Z, the direct effect of X on Z is reduced (Ro, 2012). In general, partial mediation is established when both direct and indirect effects are significant, whereas full mediation occurs when indirect effects are significant

and direct effects become negligible. Based on these criteria, the results confirm partial mediation, leading to acceptance of H3. Overall, the mediation analysis demonstrates that EE partially mediates the relationship between CV and EI. The significant direct and indirect effects indicate that CV influences EI both directly and indirectly through EE.

Table 4: Results of Hypothesis Testing.

	Path Coefficient	T-Value	P-Value	F-Square	95% CIs (Bias Corrected)	Hypothesis
CV -> EIN	1.062	11.735	0.00	1.917	[1.171, 1.165]	Supported
EIN -> ATSE	0.639	11.452	0.00	1.087	[0.749, 0.740]	Supported

Table 5: Mediation Analysis.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (IO/STDEVI)	P Values	95% CIs (Bias Corrected)	Hypothesis
CV -> EE -> EIN	-0.343	-0.345	0.062	5.532	0.00	[-0.225, -0.219]	Supported

The R² values for SE (0.521), CV (0.058), EE (0.625), and EI (0.743) are reported in Table 6. All constructs meet the recommended R² range between 0 and 1 (Chin, 1998), indicating acceptable explanatory power of the model. The results show that EI and CV jointly explain 52% of the variance in SE, while EE and CV account for 74% of the variance in EI. These findings suggest substantial explanatory strength, particularly for the EI construct. In addition, predictive relevance was assessed using Q² values, where values greater than zero indicate adequate predictive capability. The results confirm that the model achieves predictive relevance, with all Q² values falling within acceptable significance thresholds (Falk & Miller, 1992).

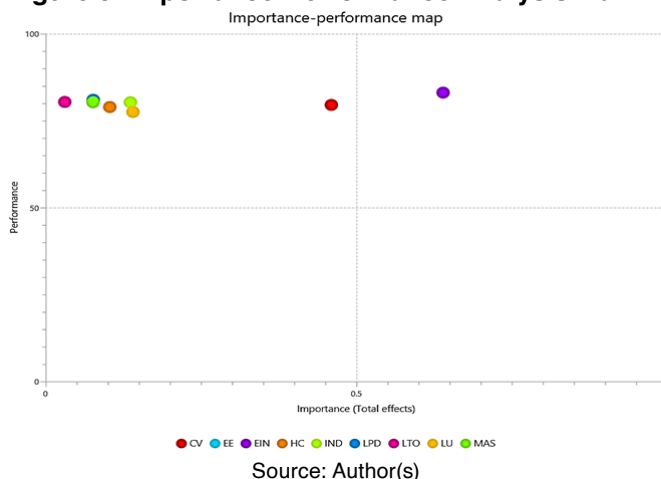
Table 6: Model's Goodness of Fit and Predictive Relevance.

Construct	R-Square	R-Square Adjusted	Q ² Predict
ATSE	0.521	0.520	0.407
CV	0.059	0.058	0.045
EE	0.759	0.758	0.658
EIN	0.743	0.742	0.493

4.3. Importance-Performance Analysis (IPMA)

As a supplementary analysis to PLS-SEM, IPMA (Figure 3) evaluates the relevance of an external variable by using the average of unstandardised latent variable scores (Sternad Zabukovšek et al., 2022). IPMA is particularly valuable as it extends SmartPLS-based PLS-SEM outputs by identifying latent constructs that contribute most strongly to the model results (Hair et al., 2017). The importance–performance grid enables systematic interpretation by ranking attributes from highest to lowest based on their relative importance, as originally proposed by Martilla and James (1977). The IPMA framework visualises results in a two-dimensional matrix, where importance is plotted on the Y-axis and performance on the X-axis, based on SE-related survey outcomes (Figure 2). Overall, IPMA provides actionable insights by identifying which antecedent constructs require prioritisation to achieve desired outcomes, thereby supporting more targeted managerial and policy interventions.

Figure 3: Importance-Performance Analysis Matrix.



According to the IPMA results, EI emerges as the key construct requiring improvement. EE and CV are identified as high-importance factors; however, their performance levels differ, suggesting targeted intervention areas that could further enhance EI outcomes. The complete IPMA matrix (Table 7) reports the importance and performance values for all constructs, providing a structured basis for prioritisation and strategic decision-making.

Table 7: Importance-Performance Analysis Results.

	Importance ATSE	Performance
CV	0.460	79.538
EE	0.267	80.662
EIN	0.639	83.080
HC	0.103	78.936
IND	0.136	80.303
LPD	0.076	81.017
LTO	0.031	80.396
LUA	0.14	77.525
MAS	0.076	80.31

According to the IPMA findings, CV and EE are positioned in the second quadrant, indicating that both constructs are highly important but require improvement in their performance to more effectively foster SE. In contrast, EI is located in the first quadrant, reflecting both high importance and strong performance in shaping SE. This suggests that EI is the most influential construct in the model in terms of driving SE outcomes compared to CV and EE. Additionally, the individual dimensions constituting CV contribute differently to the overall performance of SE, highlighting variation in their respective influence on SE outcomes.

5. Discussion

The study examined the influence of CV on SE. The findings indicate that CV has

a significant effect on EI, particularly within the Indian context, where individuals with an entrepreneurial cultural background tend to exhibit higher levels of EI. The results further confirm that when CV is reinforced by EE, EI is strengthened. In some cases, CV alone may show a weaker relationship with EI; however, when supported by EE, its effect becomes more pronounced and statistically meaningful. The findings also confirm that EE mediates the relationship between CV and EI. This mediation further extends to SE, indicating that CV combined with EE plays a significant role in shaping both EI and favourable attitudes towards SE.

Moreover, CV and EE together constitute a critical foundation for enhancing EI and promoting SE-oriented attitudes. Cultural influences on entrepreneurial behaviour vary significantly between Western and Indian contexts. Therefore, applying Western cultural frameworks without contextual adaptation may lead to incomplete interpretations. In the Indian context, strong family networks, collectivist social structures, and informal institutional norms significantly shape opportunity recognition, risk behaviour, and creativity. These characteristics contrast with the more individualistic and market-driven assumptions embedded in many Western frameworks. Recognising these contextual differences is essential for understanding how CV operates within India's entrepreneurial ecosystem and how it influences EI and SE-related attitudes. Prior studies (Liñán, 2008; Shiri et al., 2017) also support the relevance of CV in shaping entrepreneurial outcomes. However, the present study extends this literature by strengthening the explanatory role of CV in relation to both EI and SE, thereby addressing an important contextual research gap.

6. Implications

6.1. Theoretical Implications

This study makes a meaningful contribution to both the ETE and the CV framework. Mahajan (2014) posits that ETE, through factors such as schooling, CN, inspiration, economic conditions, pursuit of excellence, religious doctrines, and risk-taking propensity, facilitates innovative thinking and the identification of entrepreneurial opportunities. In this context, the present study reinforces the importance of EE-based exposure among students in shaping their entrepreneurial orientation. CV significantly influences students' risk perception, uncertainty tolerance, and innovativeness, which in turn shape EI. Hofstede's cultural dimensions (2011), including uncertainty avoidance, individualism versus collectivism, and power distance, play a critical role in determining entrepreneurial behaviour and innovation outcomes (Hayton et al., 2002). Individualistic orientations, characterised by autonomy and personal achievement, are generally more supportive of EI and innovation, whereas other cultural configurations may shape entrepreneurial tendencies differently. The study further examines the impact of CV on EI and extends this analysis to SE attitudes, highlighting the broader behavioural implications of CV in entrepreneurial development. Overall, the findings strengthen both ETE and CV frameworks by empirically validating their relevance in shaping EI and SE-related attitudes, while also demonstrating the reinforcing role of EE within this relationship structure.

6.2. Managerial Implications

The findings highlight the need for prioritising and strengthening CV and EE to foster

more favourable SE attitudes, as both constructs are important but currently exhibit relatively lower performance. Targeted capacity-building and training initiatives focusing on these areas can significantly enhance their effectiveness and improve overall outcomes. At the same time, given the strong significance and performance of EI, organisations should cultivate an environment that actively supports and leverages innovativeness. Integrating enabling structures that promote creative thinking alongside EE-based interventions can provide a more comprehensive framework for advancing SE practices.

From a pedagogical perspective, curriculum development should integrate culturally grounded examples of entrepreneurial practice, alongside experiential learning approaches such as project-based learning and community-engaged assignments. Greater exposure to locally relevant entrepreneurial ecosystems should also be encouraged. In addition, instructional strategies should incorporate peer collaboration, group-based problem-solving, and mentorship from local entrepreneurs to align with collective learning orientations. Furthermore, sustainability-oriented learning modules should explicitly connect ethical, social, and environmental dimensions with culturally embedded values. Such an integrated approach not only enhances engagement with EE but also supports the development of innovation linked to community well-being, ultimately contributing to long-term organisational and societal sustainability.

7. Conclusion, Limitations and Future Research Directions

The central aim of this research was to examine the effect of CV on EI. However, the findings indicate that CV alone is insufficient to fully develop EI, highlighting an important explanatory gap. To address this limitation, the study further investigated the mediating role of EE in strengthening EI among individuals. The key contribution of this research lies in demonstrating the substantial intervening effect of EE in the relationship between CV and EI. The results confirm that EE plays a significant role in enhancing EI, thereby reinforcing the argument that CV combined with EE is essential for fostering positive attitudes towards SE.

The study is subject to certain limitations. The sample was drawn using purposive sampling from students in a specific southern Indian state who belonged to business families, which may limit the generalisability of the findings and introduce potential selection bias due to prior exposure to entrepreneurial activities. In addition, demographic factors such as gender and educational background may influence EI; however, these were not included as control variables in the present model. Future research should incorporate such controls, particularly disciplinary variation and gender, to improve model robustness. Moreover, caution is required when generalising the findings to other developing economies, as India's entrepreneurial ecosystem is still evolving. Since the study focuses on university students, the results cannot be extended to the broader population, as higher education individuals may exhibit stronger entrepreneurial orientation compared to the general public.

Future research could extend this work by examining alternative contexts and additional variables. This includes exploring gender-based differences, assessing the influence of business family background on entrepreneurial perceptions, and further analysing CV-related effects on EI and SE. In addition, future studies may consider incorporating emotional intelligence (EI) as a mediating construct, alongside adopting mixed-method approaches, cross-cultural comparisons, and larger and more diverse

geographic samples. Overall, this study provides a foundation for further exploration of individual values, EI, and SE within broader entrepreneurial ecosystems.

Declarations

All authors declare that they have no conflicts of interest.

Compliance with Ethical Standards

- **Funding:** *The authors did not receive support from any organization for the submitted work.*
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- **Research involving Human Participants and/or Animals:** *No direct research has been made on humans or animals.*
- **Informed consent:** *The verbal consent was taken from the respondents to record their responses and use them for the current research.*

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