University Entrepreneurship Education and Entrepreneurial Intention in a Multicampus Honduran University

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Abstract*– Evaluations of university entrepreneurship education often separate institutional provision from the family, contextual, and personal judgments through which students interpret it. Using survey data from 232 students and recent graduates across XX campuses of a private Honduran university, we test whether perceptions of the university entrepreneurship environment remain associated with entrepreneurial intention after family recognition and external feasibility are considered, and after desirability and self-efficacy enter the model. Six theory informed indices had acceptable internal consistency (α=.728 to .872; ω=.726 to .874). Parallel analysis of 31 attitudinal items retained three broad dimensions: personal entrepreneurial orientation, external feasibility, and the university environment. Hierarchical regressions used HC3 standard errors. University education (b=.219, p=.002) and family recognition (b=.515, p<.001) were associated with intention before the personal appraisals entered. The final model explained 71.7% of the variance. Desirability (b=.526, p<.001), self-efficacy (b=.245, p=.006), and family recognition (b=.176, p=.003) remained significant; the coefficient for education fell to b=.023 (p=.648), and external feasibility remained nonsignificant. The association attributed to university education therefore overlapped substantially with students' judgments of value and capability. Family recognition retained a smaller independent association.

***Keywords*-- university entrepreneurship education; entrepreneurial intention; self-efficacy; desirability; family recognition; Honduras**

I. INTRODUCTION

Universities now invest in entrepreneurship courses, project fairs, mentoring, competitions, and incubators. The number of activities is easy to document; their contribution to students' entrepreneurial intention is not. Students encounter university provision alongside family expectations, employment pressures, financial and regulatory constraints, and their own judgments about whether entrepreneurship is desirable and feasible.

The relationship requires contextual interpretation in emerging economies. Entrepreneurship may represent an opportunity, a route to professional autonomy, or a response to scarce salaried employment. Students can value university support while remaining doubtful about access to finance or the regulatory environment. Some also arrive with an entrepreneurial identity already reinforced by their families. Under these conditions, a coefficient attributed to university education may partly reflect prior interest, family recognition, or selection into entrepreneurship-related activities.

When entrepreneurship education, family recognition, contextual feasibility, desirability, and self-efficacy are examined in isolation, coefficients attributed to educational provision risk conflating institutional experiences with students' prior psychological and social appraisals. Consequently, institutional survey evidence may overestimate the unique contribution of entrepreneurship education. Distinguishing these overlapping sources of association is therefore necessary not only for theory development but also for the valid evaluation of university entrepreneurship programs.

The empirical literature is mixed. Several studies report positive associations between entrepreneurship education and intention [1], [2], [3], [4], [5], [6]. Others assign a central role to self-efficacy or attitude in the association between supportive

university environments and intention [7], [8], [9], [10], [11]. Family support and role models also matter [7], [12], [13], but they are seldom examined in the same model as perceived educational provision, external feasibility, desirability, and capability beliefs. Without that comparison, a favorable education coefficient is difficult to interpret. It may represent an institutional contribution, but it may also absorb prior entrepreneurial orientation, social recognition, or a common tendency to endorse positively worded items.

Entrepreneurial intention is treated as the only outcome. The principal explanatory variable is students' appraisal of the university entrepreneurship environment. Family recognition and external feasibility represent relational and economic conditions; desirability and self-efficacy capture judgments more closely tied to intended action. Prior venture creation, age, gender, and work status serve as background controls. Entering these variables sequentially permits a direct assessment of how much association remains for perceived university provision.

The data come from a geographically distributed Honduran cohort. Latin American evidence already indicates that the associations of education and self-efficacy with intention vary across countries [5], [14]. The present analysis contributes by testing the university coefficient against family, contextual, and personal appraisals and by examining whether the personal measures are empirically distinct. Rather than estimating whether entrepreneurship education "works," this study examines whether the association commonly attributed to university entrepreneurship education remains distinguishable once theoretically proximal personal and relational appraisals are considered simultaneously.

II. THEORETICAL BACKGROUND

A. Entrepreneurship Education in Higher Education

Entrepreneurship education is not a uniform intervention. Courses, instructor competence, university support, experiential and creative learning, incubation, extracurricular activities, and contact with entrepreneurs differ in both content and intensity

[1], [3], [4], [15], [16], [17], [18], [19]. Their reported outcomes also vary. Across 11 Latin American countries, perceived learning from entrepreneurship programs was positively related to intention [5]. In Colombia, Ecuador, Mexico, and Peru, that relationship was weaker, whereas selfefficacy was more consistently associated with intention [14]. Treating all of these experiences as a single program exposure can therefore conceal important differences.

Perceived university entrepreneurship education is measured here with four items: course usefulness, faculty guidance, complementary activities, and institutional culture. The resulting index reflects students' overall assessment of the entrepreneurial environment they encountered. It does not measure instructional quality or classroom practice directly, and its components represent related rather than interchangeable aspects of university provision.

The index is broader than course attendance because mentoring, events, and institutional culture can expose students to entrepreneurship outside a formal subject. That breadth suits an institutional profile, but it cannot identify which component accounts for an observed association. Evidence at the component level would be required before recommending changes to curriculum, faculty development, extracurricular provision, or institutional culture.

Evidence from individual university settings illustrates the distinction. Among 733 Indonesian students, course attendance was associated with self-efficacy but not independently with intention, whereas extracurricular participation was associated with both [9]. Astiana et al. [6] reported positive associations among education, desirability, feasibility, and intention. Such differences are plausible when studies labeled as entrepreneurship education capture different experiences and levels of student engagement.

A positive education coefficient admits several explanations: learning, capability development, voluntary participation, prior interest, retrospective satisfaction, or a generally favorable view of entrepreneurship. The cross sectional design cannot establish their temporal order. For that reason, the education index is analyzed as an institutional appraisal rather than as a verified measure of educational impact.

This distinction affects program evaluation. A composite score can indicate whether students who rate the university environment more favorably also report stronger intention. It cannot show whether a particular course, instructor, mentoring relationship, or incubation experience produced the difference. The four indicators are therefore used to describe an institutional pattern, not to prescribe a specific intervention.

B. Desirability, Self-Efficacy, and Intention

The theory of planned behavior identifies intention as the immediate antecedent of behavior and treats attitude and perceived behavioral control as proximal determinants [20]. In social cognitive theory, self-efficacy refers to a person's judgment of the capability to organize and execute action [21]. The entrepreneurial event model gives perceived desirability and feasibility a similar role in explaining entrepreneurial action [22]. Although these traditions distinguish value from capability, the available measures are narrower than their canonical constructs. Desirability records the value respondents attach to becoming entrepreneurs; self-efficacy summarizes perceived knowledge and capability for venture creation; intention combines anticipated effort, a venture plan, and entrepreneurship as a professional objective.

The theoretical distinctions do not guarantee empirical separation. A respondent who values entrepreneurship, feels capable of pursuing it, and plans to act may answer all three sets of items favorably. High correlations can reflect genuine conceptual proximity, similar item wording, response style, or several of these factors at once. Previous research also places attitude and self-efficacy close to intention [7], [8], [10], [11], [23]. Interpreting the regression coefficients therefore requires evidence about the measurement structure.

Entrepreneurial self-efficacy is usually most informative when it refers to defined tasks. Confidence may differ across idea generation, demand assessment, resource mobilization, negotiation, and business launch. The present index combines perceived capability, knowledge, skill development, and ease of firm creation. It summarizes capability beliefs in this dataset but cannot diagnose task-specific competence.

C. Family Recognition and External Feasibility

Family recognition is not equivalent to the subjective norm in planned-behavior research. Its two items ask whether relatives see entrepreneurial potential in the respondent, not whether they approve a specific venture decision. Recognition may nonetheless provide legitimacy, encouragement, information about entrepreneurial roles, or a social basis for self-assessment. Studies that include family support alongside education find that both can be relevant, although their relative contributions differ across settings [12], [13].

External feasibility concerns conditions outside the individual. Respondents rated safety, legal facilitation, access to finance, and the ease of creating a firm in Honduras. Unfavorable views of these conditions can coexist with strong desirability and confidence. An index separate from selfefficacy preserves the distinction between perceived personal capability and anticipated environmental constraints.

The constructs are entered as successive levels of appraisal, without assuming a causal sequence. University provision captures institutional experience; family recognition records a relational judgment of entrepreneurial potential; and external feasibility reflects perceived conditions for venture creation.

Desirability and self-efficacy concern personal value and capability and are thus closer conceptually to intention. The sequential models test whether the education coefficient remains distinguishable after these appraisals are introduced. In single wave data, a reduced coefficient indicates shared variance, not mediation or temporal precedence.

D. Theoretical Convergence and Divergence

Although these theoretical traditions are complementary, they imply different interpretations of the education to intention relationship. The theory of planned behavior places intention close to attitude and perceived behavioral control, suggesting

that educational experiences may become statistically secondary once these proximal judgments are considered. Social cognitive theory similarly predicts that efficacy beliefs may account for much of the apparent contribution of educational provision. In contrast, the entrepreneurial event model highlights desirability and feasibility as the immediate cognitive precursors of entrepreneurial action. Examining these perspectives simultaneously therefore provides a stronger theoretical test than evaluating each construct independently.

E. Hypotheses H1. A more favorable perceived university entrepreneurship education environment is positively associated with entrepreneurial intention. H2. Family recognition of entrepreneurial potential is positively associated with entrepreneurial intention. H3. Perceived external feasibility is positively associated with entrepreneurial intention. H4. Entrepreneurial desirability is positively associated with entrepreneurial intention. H5. Entrepreneurial self-efficacy is positively associated with entrepreneurial intention.

III. METHOD

A. Design and Participants

A cross sectional online survey was administered in 2021. Criterion-based, nonprobability recruitment included current students and graduates from 2016 to 2020 across the XX campuses of a private Honduran university. Eligibility required having developed or presented a business idea in a university course. Campus program directors distributed the questionnaire. Because the dataset did not contain a campus field, residential location reported in the neighborhood item was used to identify the city associated with each campus. The resulting cohort was geographically distributed and had prior exposure to university entrepreneurship activities. Distribution records did not retain a complete denominator; a response rate cannot be calculated, and the sample is not presented as representative.

The database contained 232 respondents, of whom 56.5% were men and 43.5% women. Valid ages were available for 229 cases (M=28.54, SD=8.01). Most respondents worked or

combined employment with study (85.8%), and 95 (40.9%) reported prior venture creation. Three invalid age entries (‘Wt,’ ‘Xxx,’ and ‘2t’) were excluded from adjusted models. Academic program appeared as unstructured text with spelling variants and entries that did not identify a program. It was not used as a covariate because no consistent coding protocol had been specified before analysis.

The questionnaire was anonymous, and the analytic file contained no direct identifiers. Data preparation assessed completeness, coded the background variables used in the models, flagged invalid ages, and calculated each index from its specified items. All focal Likert responses were complete. Only the three cases with invalid age values were omitted from adjusted models.

TABLE I. SAMPLE CHARACTERISTICS

Characteristic	Value
Total sample	232
Women	101 (43.5%)
Age	28.54 (8.01), n=229
Prior venture creation	95 (40.9%)
Working/work and study	199 (85.8%)

B. Measures

All attitudinal items used a five point agreement scale. The university education index averaged four items on course usefulness, faculty guidance, complementary activities, and institutional entrepreneurial culture. Two items measured family recognition: whether relatives identified entrepreneurial potential and regarded the respondent as a prospective entrepreneur. External feasibility combined ratings of safety, legal facilitation, access to finance, and the ease of starting a firm in Honduras.

Entrepreneurial desirability was the mean of anticipated satisfaction with entrepreneurship and expected improvement in the respondent’s work situation. Self-efficacy covered ease of firm creation, skill development, knowledge, and perceived capability. Intention combined intended effort, a declared venture plan, and entrepreneurship as a professional objective. Each variable was analyzed as a theory informed composite constructed from the questionnaire.

Gender, age, work status, and prior venture creation were used as controls. The survey recorded whether respondents had ever created a company but did not establish when it occurred, how long it lasted, whether it was formal, what role the respondent held, or how many attempts had been made. The variable therefore indicates prior exposure to venture creation, not entrepreneurial success.

TABLE II. OPERATIONALIZATION OF FOCAL INDICES

Index	k	Item content
University education	4	Course usefulness; faculty guidance; complementary activities; institutional culture
Family recognition	2	Family identifies potential; family considers respondent a good entrepreneur
External feasibility	4	Safety; legal facilitation; finance access; procedural ease
Desirability	2	Expected satisfaction; expected improvement in work situation
Self efficacy	4	Ease of creation; skill development; knowledge; capability
Entrepreneurial intention	3	Intended effort; venture plan; professional objective

Note. All indicators used five point agreement responses; index scores are item means.

Seventeen researchers from five countries reviewed the questionnaire before administration, and their comments led to revisions in item content and wording. This process provides qualitative evidence of content review. It did not produce an item-level agreement coefficient and is not described as full psychometric validation.

No focal Likert item was missing. Excluding the three invalid age entries left 229 cases for the adjusted models. Index means remained on the original 1 to 5 scale. The controls allowed the focal associations to be estimated after accounting for consistently coded differences in respondent background.

C. Analytical Strategy

Index scores were calculated as item means. Internal consistency was examined with Cronbach’s alpha, McDonald’s omega, and corrected item to total correlations. The 31 attitudinal items were subjected to the KMO measure, Bartlett’s test, parallel analysis, common-factor extraction, and oblique Promax rotation. Parallel analysis compared observed eigenvalues with the 95th percentile from random data, avoiding exclusive reliance on the eigenvalue-greater-than-one rule [24], [25]. Pearson correlations described the associations among the six indices.

Hierarchical OLS regression was used to model entrepreneurial intention. Model 1 contained gender, age, work status, and prior venture creation. Model 2 added university education, family recognition, and external feasibility. Model 3 added desirability and self-efficacy because of their closer conceptual relationship to intention. Inference used HC3 standard errors and 95% confidence intervals. Variance inflation factors assessed collinearity; the Breusch to Pagan and Ramsey RESET tests examined heteroskedasticity and functional form. Cook's distance identified potentially influential observations for a case-deletion analysis, and a centered quadratic specification tested possible curvature near the upper end of the scales. Unstandardized coefficients are reported because the focal indices use the same 1 to 5 metric.

The change in the education coefficient across models shows how much of its association with intention is shared with desirability and self-efficacy. All constructs were measured in the same survey, so the hierarchy compares explanatory layers rather than temporal stages. It is not a mediation analysis [26]. Interpretation of the personal coefficients also takes account of the broad personal factor found in the exploratory analysis.

D. Variable Selection

Variable selection followed a review of all attitudinal and background measures in the dataset. Five items covering effort, initiative, communication, mobilizing others, and autonomy formed a reliable personal agency index (α=.848), but they loaded on the same broad factor as intention and self-efficacy. Including the index in the main regression would have made it difficult to distinguish agency from a general tendency toward favorable entrepreneurial self-description. It was therefore omitted from the principal model.

The risk items were kept separate because they did not form a coherent composite. Alpha remained negative after reverse coding the safe-option item, and the item to total relationships were inconsistent. Income, occupation, educational background, residence, dependents, and academic program were also considered, but several contained sparse free-text or multiple-response categories for which no coding protocol had been specified. The final control set was limited to gender, age, work status, and prior venture creation.

IV. RESULTS

A. Descriptive and Measurement Evidence

All six indices reached acceptable internal consistency. University education produced the highest coefficients (α=.872; ω=.874); values for the other indices ranged from α=.728 to .840 and from ω=.726 to .841. External feasibility was the least homogeneous. The corrected item to total correlation for safety was .286, compared with .643 to .713 for the legal, financial, and procedural items. Safety remained in the index because of its relevance to the Honduran context. Removing it in the sensitivity analysis did not change the regression results.

TABLE III. DESCRIPTIVE STATISTICS AND RELIABILITY

Measure	M	SD	α	ω
University entrepreneurship education	3.82	.99	.872	.874
Family recognition	3.89	1.09	.775	.773
External feasibility	2.79	.93	.761	.792
Entrepreneurial desirability	4.29	.91	.728	.726
Entrepreneurial self efficacy	3.81	.91	.831	.834
Entrepreneurial intention	4.15	.98	.840	.841

Under Promax rotation, faculty guidance, complementary activities, and institutional culture defined the universityenvironment factor. Legal facilitation, access to finance, and procedural ease defined external feasibility. Intention, desirability, self-efficacy, family recognition, initiative, and related self-appraisals loaded on a broad personal entrepreneurial factor. Course usefulness and perceived safety showed more diffuse loadings. The university and external dimensions were distinguishable, whereas the personal indices overlapped. Instead of treating this convergence exclusively as a measurement limitation, it may indicate that entrepreneurial intention, desirability, efficacy, and family recognition function as a tightly interconnected appraisal system within this population. Whether that reflects substantive psychological integration or common method influence remains an empirical question for future research. The regressions retain the observed indices, with that overlap treated as an interpretive limitation.

TABLE IV. SELECTED THREE FACTOR PROMAX COEFFICIENTS

Item	Personal	External	University
Intended venture creation	.893	.061	.183
Family says good entrepreneur	.858	.116	.182
Intended effort	.811	.020	.116
Skill development efficacy	.809	.073	.097
Entrepreneurial satisfaction	.793	.151	.029
Perceived capability	.784	.067	.111
Professional objective	.778	.061	.030
Institutional culture	.160	.047	.931
Complementary activities	.088	.176	.803
Faculty guidance	.001	.078	.751
Course usefulness	.249	.004	.540
Procedural ease	.040	.918	.005
Access to finance	.121	.779	.254
Legal facilitation	.053	.629	.115
Perceived safety	.529	.188	.107

Note. Absolute pattern coefficients are shown because factor signs are arbitrary. Selected items illustrate defining and diffuse indicators; all 31 items entered the analysis.

B. Associations and Hierarchical Models

All explanatory indices were positively correlated with intention. Desirability had the largest bivariate correlation (r=.784), followed by self-efficacy (.738), family recognition (.687), university education (.485), and external feasibility (.354). University education was also correlated with selfefficacy (.557), desirability (.478), family recognition (.482), and external feasibility (.466). These coefficients confirm substantial shared variance among the focal measures.

TABLE V. CORRELATIONS AMONG FOCAL INDICES

Variable	1	2	3	4	5	6
1. University education						
2. Family recognition	.482					
3. External feasibility	.466	.442				
4. Desirability	.478	.599	.293			
5. Self efficacy	.557	.726	.421	.691		
6. Intention	.485	.687	.354	.784	.738	

Note. Pearson correlations; N=232; all coefficients p<.001.

The background variables explained 3.2% of the variance in intention. Prior venture creation was the only significant control (b=.331, p=.020). Adding university education, family recognition, and external feasibility increased R^2 to .511 (ΔR^2=.479). University education (b=.219, HC3 SE=.070, p=.002) and family recognition (b=.515, SE=.072, p<.001) had

significant coefficients; external feasibility did not (b=−.010, p=.879). Model 2 therefore supported H1 and H2, but not H3.

After desirability and self-efficacy entered, R^2 increased to .717 (ΔR^2=.207). Significant coefficients remained for desirability (b=.526, 95% CI [.393, .659], p<.001), self-efficacy (b=.245, 95% CI [.071, .419], p=.006), family recognition (b=.176, 95% CI [.061, .290], p=.003), and prior venture creation (b=.171, 95% CI [.026, .317], p=.021). The intervals for university education (b=.023, 95% CI [−.077, .124], p=.648) and external feasibility (b=.009, 95% CI [−.091, .109], p=.855) included zero. H4 and H5 were supported. The smaller education coefficient indicates shared explanatory variance with the personal appraisals, but it does not establish directionality.

TABLE VI. HIERARCHICAL REGRESSION PREDICTING INTENTION

Predictor	M1	M2	M3
Female	.165 (.126)	−.002 (.095)	.046 (.072)
Age	−.008 (.010)	−.010 (.006)	−.003 (.005)
Prior venture	.331* (.141)	.140 (.108)	.171* (.074)
Working	.008 (.209)	−.109 (.156)	−.112 (.127)
University education		.219** (.070)	.023 (.051)
Family recognition		.515*** (.072)	.176** (.058)
External feasibility		−.010 (.066)	.009 (.051)
Desirability			.526*** (.068)
Self efficacy			.245** (.088)
R^2 / adjusted R^2	.032 / .015	.511 / .495	.717 / .706

Note. Entries are unstandardized b (HC3 SE); n=229. *p<.05; **p<.01; ***p<.001.

C. Model Robustness and Sensitivity Analyses

External feasibility was re-estimated without perceived safety, its weakest indicator. Results were materially unchanged. In Model 2, university education (b=.228, p=.001) and family recognition (b=.519, p<.001) remained associated with intention; external feasibility did not (b=−.034, p=.542). In Model 3, the significant coefficients were desirability (b=.523, p<.001), self-efficacy (b=.247, p=.005), and family recognition (b=.180, p=.002). Education (b=.031, p=.543) and external feasibility (b=−.012, p=.773) remained nonsignificant, and R^2 was .718.

TABLE VII. EXTERNAL FEASIBILITY SENSITIVITY

Coefficient	Four item index	Three item index
Education, contextual model	.219 (p=.002)	.228 (p=.001)
Family, contextual model	.515 (p<.001)	.519 (p<.001)
External feasibility, contextual	−.010 (p=.879)	−.034 (p=.542)
Education, complete model	.023 (p=.648)	.031 (p=.543)
External feasibility, complete	.009 (p=.855)	−.012 (p=.773)
Complete model R^2	.717	.718

Note. The three item index excludes perceived safety; all other specifications are unchanged.

The maximum VIF was 3.09, and the Breusch to Pagan test did not indicate heteroskedasticity (p=.242). The Ramsey RESET test detected a modest departure from functional form (p=.033). In centered quadratic specifications, only desirability showed curvature (b=−.057, p=.044), consistent with flattening near the top of the scale. The additional term increased R^2 to .722 without changing the conclusions for education, family recognition, external feasibility, or self-efficacy.

Fourteen cases exceeded the Cook's-distance screening threshold of 4/n, although the maximum value was .064 and none approached 1. Excluding those cases produced the same substantive result. Family recognition (b=.161, p<.001), desirability (b=.526, p<.001), and self-efficacy (b=.308, p<.001) remained significant; university education (b=.018, p=.684) and external feasibility (b=−.037, p=.351) did not.

V. DISCUSSION

The principal contribution of this study is methodological rather than causal: institutional evaluations of entrepreneurship education should distinguish educational provision from the proximal psychological and relational appraisals through which students interpret it.

Three results organize the discussion. First, perceived university provision and family recognition were associated with intention after adjustment for background characteristics and external feasibility. Second, adding desirability and selfefficacy reduced the education coefficient from .219 to .023.

Third, family recognition retained a smaller coefficient, whereas respondents' assessments of finance, regulation, safety, and procedural ease were unrelated to intention in both adjusted models.

The reduction in the education coefficient is consistent with studies that place efficacy and attitude close to the education to intention association [7], [8], [9], [10]. Two explanations remain plausible. Students who already view entrepreneurship as worthwhile and achievable may also evaluate university provision more favorably. Alternatively, university experiences may have contributed to those appraisals. The data do not establish which process came first. What they do show is that the institutional coefficient contains little unique information once desirability and self-efficacy are held constant.

The attenuation of the education coefficient suggests that favorable evaluations of university entrepreneurship provision may largely reflect students' proximal entrepreneurial judgments rather than an independent institutional contribution. From the perspective of the theory of planned behavior, this pattern is consistent with the expectation that attitudes and perceived behavioral control remain closer determinants of intention than distal educational experiences. Likewise, social cognitive theory would predict that efficacy beliefs absorb part of the variance initially attributed to educational exposure.

These results also speak to a broader question in the international entrepreneurship education literature: whether the positive associations reported across many institutional surveys reflect an effect of educational provision or a byproduct of the personal appraisals with which that provision correlates. Several of the studies cited above measure education alongside self-efficacy or desirability in the same survey wave without testing whether the education coefficient survives once those appraisals are entered jointly [1] to [4], [6]. If the pattern observed here generalizes, part of the effect commonly attributed to entrepreneurship education in that literature may in fact belong to students' prior judgments of value and capability. That possibility argues for re-examining published estimates through joint models rather than treating singlepredictor associations as settled evidence of program impact.

External feasibility behaved differently. The mean was relatively low (M=2.79), but individual differences in these ratings did not correspond to intention after adjustment. For respondents who had already developed or presented a business idea, plans for entrepreneurship coexisted with expected financial, regulatory, and safety constraints. This pattern suggests that perceived environmental constraints operate

downstream of intention formation: they may shape whether plans are acted upon rather than whether they form in the first place. Such constraints may influence the later transition from intention to entry, survival, or growth even though they did not distinguish intentions in this sample.

Robustness checks narrow several alternative explanations. Removing the weak safety item did not make external feasibility significant. Modeling the modest curvature in

desirability left the focal coefficients essentially unchanged, as did the exclusion of cases above the Cook's-distance screening threshold. The main pattern is therefore not attributable to that indicator, to a strictly linear desirability specification, or to the screened observations.

A. Interpreting the Measurement Structure

The two retention criteria produced different descriptions of the questionnaire. The eigenvalue-greater-than-one rule yielded five components, but only three exceeded the random-data benchmarks in parallel analysis. Under the more restrictive criterion, responses formed a university-environment factor, an external-feasibility factor, and a broad personal entrepreneurial factor.

Intention, desirability, self-efficacy, family recognition, initiative, and other favorable self-appraisals converged on the personal factor. That convergence may be substantive: value, capability, social recognition, and intended action are closely connected for respondents. It may also reflect similarly positive wording or a common response tendency. The factor pattern does not establish discriminant validity among the observed indices. Their regression coefficients are best understood as conditional associations among related appraisals rather than estimates of independent latent traits.

The decision to exclude the additional personal agency index was intended to protect the interpretation of entrepreneurial intention as the dependent variable. Adding another overlapping index would likely have raised predictive power while making the coefficient meanings less clear. Even in the reduced model, the measurement evidence requires caution when assigning distinct psychological interpretations to family recognition, desirability, and self-efficacy.

B. Family Recognition and the Social Formation of Intention

Family recognition correlated with self-efficacy (r=.726) and intention (r=.687) and retained a significant coefficient after both desirability and perceived capability were added. Because the items concern relatives' recognition of entrepreneurial potential, they differ from approval of a specific choice and from the subjective norm used in planned-behavior research. One possible interpretation is reflected capability appraisal: people may partly judge their entrepreneurial potential through the assessments of close others. Longitudinal data would be needed to determine whether recognition shapes self-belief, self-belief shapes perceived recognition, or both develop together.

Students do not enter university with equivalent sources of entrepreneurial affirmation. Some have relatives who can recognize and discuss entrepreneurial potential; others do not. Structured contact with mentors and alumni could broaden access to informed feedback, especially for students without entrepreneurial experience in their families. That feedback should be tied to observable tasks and explicit criteria so that it tests confidence as well as encourages it.

C. Implications for University Entrepreneurship Education

The nonsignificant education coefficient in Model 3 should not be read as evidence that university provision has no effect. It means that, in this cross sectional survey, students' general rating of the university environment contributed little unique association after their ratings of desirability and capability were included. An evaluation designed to estimate educational change would need observations before and after a defined course, mentoring experience, or extracurricular program.

The four education items also point to different institutional practices. Course usefulness had the highest mean (3.92) and faculty guidance the lowest (3.71), with complementary activities and culture between them. Their average describes the perceived environment but offers limited guidance for improvement. A diagnostic design would record teaching methods, mentor contact, participation intensity, feedback, and performance on entrepreneurial tasks such as customer interviews, market tests, resource estimates, negotiation, and revision after failed assumptions.

Later behavior should be part of that design. Participation records would establish which experiences students actually received, and authentic tasks would show what they could do. Repeated measures could track task-specific efficacy and desirability. Follow-up data could then distinguish plans from attempts and document what occurred after continuation, closure, or postponement. Registered firm creation is not the only defensible endpoint; abandoning a weak opportunity after testing it may also reflect sound entrepreneurial judgment.

Taken together, these sources would connect implementation, learning, and behavior. Contact hours and instructional records would describe provision; opportunity analysis, customer evidence, resource logic, and financial reasoning would document performance; repeated appraisals and follow-up would record change and later decisions. Such a design could identify which experiences are associated with which outcomes and whether those associations differ across students.

The family result also has an equity implication. Students who receive little recognition at home may lack the informal feedback available to peers from entrepreneurial families. Mentoring and alumni programs may help reduce that difference, but encouragement alone is insufficient. Feedback should challenge unsupported confidence and recognize capability only when it is demonstrated in performance.

D. Implications of the Measurement Evidence

Parallel analysis grouped the personal, family, capability, desirability, and intention items within one broad dimension. The result limits any claim that the survey isolated fully distinct psychological constructs. It also records how respondents

1 To preserve the manuscript's anonymity during external peer review, the number of campuses is withheld and represented as "XX" throughout the text.

answered: entrepreneurial value, capability, recognition, and intended action were closely connected. Future work should determine whether that convergence persists when item wording, method effects, and task-specific measures are addressed.

Reliability does not resolve this issue. Alpha and omega indicate internal consistency within the reconstructed indices; they do not demonstrate separation among family recognition, desirability, self-efficacy, and intention. A stronger measurement model would use task-specific efficacy items, differentiated forms of family influence, balanced wording, and behavioral indicators.

E. Theoretical Implications

For the theory of planned behavior, the attenuated education coefficient supports the expectation that attitude and perceived behavioral control sit closer to intention than distal educational exposure. Perceived university provision may operate largely through these proximal judgments rather than as an independent determinant, which argues for measuring attitude and control directly in future evaluations rather than inferring them from a general education index.

For social cognitive theory, the retained self-efficacy coefficient alongside the attenuated education coefficient is consistent with efficacy beliefs absorbing much of education's apparent contribution. This points to self-efficacy, rather than program exposure itself, as the more proximal mechanism linking university experiences to intention, and it suggests that interventions aimed at building task-specific efficacy may be more consequential than broad exposure to entrepreneurship activities.

For universities and education authorities, these results support a more careful basis for program review. Institutional ratings of courses, faculty guidance, complementary activities, and entrepreneurial culture should be examined together with students' desirability, self efficacy, family recognition, and prior venture experience. This approach can inform curriculum review, mentoring priorities, and public policies for entrepreneurship support, while avoiding the claim that a favorable institutional rating proves educational impact. Policy decisions require repeated measures, defined exposure to educational activities, evidence of task performance, and follow up of venture attempts.

F. Scope and Future Research

The 232 participants were students and recent graduates drawn from the university's XX campuses1, but geographic distribution does not make the sample representative and does not support campus level inference. Recruitment was criterion based and nonprobability. All respondents came from one private university and had previously developed or presented a business idea. Inference is therefore limited to this cohort and cautiously to similar entrepreneurship-exposed settings.

Several design features further restrict inference. The online, single wave self report survey cannot establish temporal order and is open to self-selection and common-method influence. Because the distribution denominator was not retained, the response rate is unknown. The broad personal factor and high intercorrelations indicate incomplete empirical separation among desirability, efficacy, recognition, and intention. Content review and acceptable reliability support use of the short indices in this analysis, but no external validation against task performance or later behavior was available. HC3 inference and sensitivity checks assess model stability; they do not correct these temporal and measurement limitations.

The next test should collect data before and after specified educational experiences, record participation intensity, and include both authentic performance and behavioral follow-up. Research across several universities, with explicit campus identifiers and adequate within-campus samples, could estimate institutional and territorial variation. Family measures should separate recognition, approval, role modeling, material resources, and entrepreneurial background. Measures of external feasibility could then compare anticipated constraints with those actually encountered during venture entry, continuation, and closure.

VI. CONCLUSION

This study met its stated objective of determining whether students' appraisal of the university entrepreneurship environment retained an association with entrepreneurial intention after family, contextual, and personal appraisals were considered. The answer is conditional. University education was associated with intention in Model 2 (b=.219, p=.002), but its coefficient decreased to b=.023 (p=.648) when desirability and self-efficacy entered Model 3. The institutional appraisal therefore did not explain additional variance in intention beyond the personal appraisals in the complete specification. This finding does not demonstrate that university education has no effect; it shows that the cross sectional survey could not isolate such an effect from students' concurrent judgments of entrepreneurial value and capability.

The hypotheses were resolved as follows. H1 received model-dependent support: the predicted education to intention association was present in the contextual model but was not retained in the complete model. H2 was supported because family recognition remained associated with intention after all specified variables were included (b=.176, p=.003). H3 was not supported; external feasibility was nonsignificant in the contextual, complete, and sensitivity models. H4 and H5 were supported, with desirability (b=.526, p<.001) and self-efficacy (b=.245, p=.006) showing positive coefficients in Model 3. Prior venture creation also remained associated with intention (b=.171, p=.021), although it served as a control rather than a focal hypothesis. Together, these results resolve the study's central analytical problem by locating the remaining associations in personal appraisal and family recognition rather than in the general institutional or external-feasibility indices. The measurement analysis qualifies these hypothesis-level conclusions. Parallel analysis retained three dimensions, and

the intention, desirability, self-efficacy, family recognition, and related personal agency items converged on one broad personal factor. Alpha and omega established internal consistency within the reconstructed indices, but not discriminant validity among them. Consequently, the significant coefficients should be interpreted as conditional associations

among closely related appraisals, not as independent psychological mechanisms. The retained familyrecognition coefficient is consistent with a relational component in entrepreneurial self-assessment, but longitudinal and more differentiated measures are required to determine directionality. The methodological implication for institutional evaluation is specific. General ratings of courses, faculty guidance, complementary activities, and institutional culture should not be treated as evidence of educational impact. A more conclusive design must define the educational exposure, record participation intensity, collect before and after exposure measures, assess task-specific performance, and follow venture attempts over time. Given the nonprobability sample, the single private university, the absence of direct campus identifiers, and the single wave self report design, inference remains restricted to this cohort. More broadly, these findings suggest that institutional evaluations of entrepreneurship education should distinguish educational provision from the personal and relational appraisals through which students interpret it. Without that distinction, favorable institutional ratings risk being interpreted as evidence of educational effectiveness when they may instead reflect broader entrepreneurial orientations. Future evaluations should therefore combine institutional measures with theoretically proximal cognitive constructs and longitudinal evidence to obtain more defensible estimates of educational contribution.

REFERENCES

[1] G. Hoang, T. T. T. Le, A. K. T. Tran, and T. Du, "Entrepreneurship education and entrepreneurial intentions of university students in Vietnam: The mediating roles of self-efficacy and learning orientation," Education + Training, vol. 63, no. 1, pp. 115 to 133, 2021, doi: 10.1108/ET-05-2020-0142.

[2] B. Pan and G. Lu, "Study on the relationship between entrepreneurship education and college students' entrepreneurial intention and entrepreneurial selfefficacy," Chinese Education & Society, vol. 55, nos. 4 to 5, pp. 269 to 285, 2022, doi: 10.1080/10611932.2022.2136473.

[3] L. Wu, S. Jiang, X. Wang, L. Yu, Y. Wang, and H. Pan, "Entrepreneurship education and entrepreneurial intentions of college students: The mediating role of entrepreneurial self-efficacy and the moderating role of entrepreneurial competition experience," Frontiers in Psychology, vol. 12, Art. no. 727826, 2022, doi: 10.3389/fpsyg.2021.727826.

[4] A. R. Galvão, C. S. Marques, T. Mendes, and C. Azevedo, "How does perceived university support boost students' entrepreneurial intentions?" Journal of the Knowledge Economy, vol. 16, pp. 12698 to 12726, 2025, published online Nov. 5, 2024, doi: 10.1007/s13132-024-02441-7.

[5] T. Lopez, J. Alvarez, I. Martins, J. P. Perez, and J. P. Román-Calderón, "Students' perception of learning from entrepreneurship education programs and entrepreneurial intention in Latin America," Academia Revista Latinoamericana de Administración, vol. 34, no. 3, pp. 419 to 444, 2021, doi: 10.1108/ARLA-072020-0169.

[6] M. Astiana, M. Malinda, A. Nurbasari, and M. Margaretha, "Entrepreneurship education increases entrepreneurial intention among undergraduate students," European Journal of Educational Research, vol. 11, no. 2, pp. 995 to 1008, 2022, doi: 10.12973/eu-jer.11.2.995.

[7] T. T. Nguyen and H. T. T. Phan, "Entrepreneurship environments and entrepreneurial intention: The role of self-efficacy and role model," International Journal of Engineering Business Management, vol. 16, 2024, doi: 10.1177/18479790241275925.

[8] J. Maradiaga-López, O. Álvarez, and H. Osorto, "Entrepreneurship education and entrepreneurial intention among university students: The mediating roles of entrepreneurial self-efficacy and motivation," Sustainability, vol. 18, no. 8, Art. no. 3985, 2026, doi: 10.3390/su18083985. [9] D. Atmono et al., "The effect of entrepreneurial education on university student's entrepreneurial self-efficacy and entrepreneurial intention," International Journal of Evaluation and Research in Education, vol. 12, no. 1, pp. 495 to 504, 2023, doi: 10.11591/ijere.v12i1.23262.

[10] Z.-M. Ye and K.-W. Kang, "The impact of entrepreneurial self-efficacy and entrepreneurship on entrepreneurial intention: Entrepreneurial attitude as a mediator and entrepreneurship education having a moderate effect," Sustainability, vol. 17, no. 10, Art. no. 4733, 2025, doi: 10.3390/su17104733.

[11] X. Liu, C. Lin, G. Zhao, and D. Zhao, "Research on the effects of entrepreneurial education and entrepreneurial self-efficacy on college students' entrepreneurial intention," Frontiers in Psychology, vol. 10, Art. no. 869, 2019, doi: 10.3389/fpsyg.2019.00869.

[12] R. T. Bhaskara and K. Inggarwati, "Entrepreneurship education and academic support influence students' entrepreneurial intention with parental role as moderator," Jurnal Manajemen dan Kewirausahaan, vol. 11, no. 1, pp. 20 to 28, Jun. 29, 2023, doi: 10.26905/jmdk.v11i1.9827.

[13] X. Xevinkeng and C. V. Layman, "Do university support, entrepreneurial attitudes, subjective norms, and self-efficacy influence student entrepreneurial intention?" Ultima Management, vol. 14, no. 1, pp. 39 to 59, Jun. 30, 2022, doi: 10.31937/manajemen.v14i1.2499.

[14] J. Montes et al., "Impact of entrepreneurship education on the entrepreneurial intention of university students in Latin America," Cogent Business & Management, vol. 10, no. 3, Art. no. 2282793, 2023, doi: 10.1080/23311975.2023.2282793.

[15] E. Y. Attah, J. T. Gimba, H. O. Obi-Anike, A. A. Ameh, and M. Y. Abdul, "Experiential learning and startup incubation partnerships: Implications on entrepreneurial intentions and learning outcomes," International Journal of Management Education, vol. 24, no. 3, Art. no. 101432, 2026, doi: 10.1016/j.ijme.2026.101432. +

[16] M. Aslan et al., "Factors influencing entrepreneurial intention: A cross-country comparison of five countries," Studies in Higher Education, published online Jun. 17, 2025, doi: 10.1080/03075079.2025.2519787.

[17] D. Maragh, "A systematic literature review of the impact of extracurricular entrepreneurship education," Entrepreneurship Education and Pedagogy, vol. 8, no. 1, pp. 60 to 76, Jan. 2025, first published online Apr. 29, 2024, doi: 10.1177/25151274241247829.

[18] N. A. Aboobaker and D. Renjini, "Human capital and entrepreneurial intentions: Do entrepreneurship education and training provided by universities add value?" On the Horizon, vol. 28, no. 2, pp. 73 to 83, 2020, doi: 10.1108/OTH-11-20190077.

[19] S. Hutasuhut, T. Thamrin, and M. Ridwan, "A creative model of entrepreneurship learning to improve self-efficacy, entrepreneurial intention, and student achievement," Creativity Studies, vol. 16, no. 2, pp. 578 to 592, 2023, doi: 10.3846/cs.2023.13468.

[20] I. Ajzen, "The theory of planned behavior," Organizational Behavior and Human Decision Processes, vol. 50, no. 2, pp. 179 to 211, 1991, doi: 10.1016/0749-5978(91)90020-T. [21] A. Bandura, Self-Efficacy: The Exercise of Control. New York, NY, USA: W. H. Freeman, 1997.

[22] A. Shapero and L. Sokol, "The social dimensions of entrepreneurship," in Encyclopedia of Entrepreneurship, C. A. Kent, D. L. Sexton, and K. H. Vesper, Eds. Englewood Cliffs, NJ, USA: Prentice-Hall, 1982, pp. 72 to 90.

[23] V. I. Nursyirwan, D. Purwana, U. Suhud, I. L. P. Harahap, and N. Valentika, "Entrepreneurial intention among students: The effect of self-efficacy and entrepreneurial attitude," Jurnal Pendidikan Ekonomi dan Bisnis, vol. 10, no. 2, pp. 193 to 205, Oct. 27, 2022, doi: 10.21009/JPEB.010.2.8.

[24] M. W. Watkins, A Step-by-Step Guide to Exploratory Factor Analysis with SPSS. New York, NY, USA: Routledge, 2021.

[25] R. B. Kline, Principles and Practice of Structural Equation Modeling, 5th ed. New York, NY, USA: Guilford Press, 2023. [26] A. F. Hayes, Introduction to Mediation, Moderation, and Conditional Process Analysis, 3rd ed. New York, NY, USA: Guilford Press, 2022.