



From Intention to Impact: A Review of Proven Mechanisms of Entrepreneurship Education.

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ABSTRACT

It is a systematic review that summarizes 32 peer-reviewed empirical studies (2012-2025) on the impact of entrepreneurship education on the entrepreneurial intentions of university students. The analysis based on PRISMA methodology recognizes the following determinants of key effectiveness: the development of self-efficacy, university support systems, and digital delivery methods.

Results indicate that entrepreneurship education strengthens intentions in all directions in accordance with the Theory of Planned Behavior (TPB) pathways. Self-efficacy is the most predictive one (16/32 studies), which has significant mediation between education and intention. University ecosystems enhance the impact (12/32 studies) through mentorship and incubators, whereas new digital strategies are more effective than traditional methods.

There is also consistency in methodology where quantitative surveys (30/32 studies), structural equation (18 studies) modeling confirms the positive results in the student population. The programs are effective in levelling the entrepreneurial spirit among different academic and family backgrounds.

Leadership, decision making, risk assessment, and innovation are some of the vital competencies that entrepreneurship education builds. The programs provide supportive settings that allow students with diverse backgrounds to develop practical entrepreneurial competencies that are essential in economic development.

The review provides evidence-based principles that focus on self-efficacy development with top priority being exposure to experiential learning, amplification of institutional support, and digital assimilation. The present study indicates that entrepreneurship education positions universities as the primary producers of the next generation of economic leaders.

Keywords: entrepreneurship education, entrepreneurial intention, Theory of Planned Behavior, self-efficacy, university support, digital delivery.

1.INTRODUCTION

Entrepreneurship refers to the process of conceptualizing, developing, implementing new ideas, and launching a new business that did not previously exist. Entrepreneurship provides an entrepreneurial ecosystem that benefits the broader economy. There has been significant growth in this field among individuals and researchers because entrepreneurs not only create wealth for themselves but also generate value for the nation's economic growth.

To improve the quality of startups and entrepreneurs, higher education institutions must build integrated programs. Universities bear primary responsibility for nurturing innovative talent during entrepreneurship's nascent stages. The Theory of Planned Behavior shapes intentions and ambitions through collegiate guidance enhancing self-efficacy. Experiential learning, mentorship, competitions, and funding cultivate essential skills. Entrepreneurship education promotes social entrepreneurial mindsets.

1.1.Problem Statement

Although there is increased entrepreneurship education, there are three major gaps:

Dissimilar program performance in channel mode of delivery.

Unequal institutional university assistance.

Background equalization effects are not clear.

This review is based on 32 studies (2012-2025) to find the best design principles [1-32].

1.2.Conceptual Framework

The current research is based on the Theory of Planned Behavior (TPB) suggested by Ajzen (1991) in the Organizational Behavior and Human Decision Processes according to which human behavior is largely influenced by the behavioral intention. TPB explains that the intention is affected by three decisive factors: attitude towards a behavior, subjective norms, and perceived behavioral control.

Attitude towards the behavior can be positive or negative based on an individual's assessment. In the present study, attitude is an expression of the beliefs in the participants in terms of the advantages and consequences of the desired behavior. Subjective norms denote a perceived social pressure of others of significance to behavioral choices. Perceived behavioral control is said to be an individual perception concerning his or her ability and control to carry out the behavior.

According to the theory, individuals tend to be more persuaded to perform a certain behavior when they have positive attitudes, have positive social norms, and perceive that they have adequate control over the behavior. Moreover, the perceived behavioral control might have a direct impact on behavior besides having an indirect impact through the intention. Hence, the hypothesis of the study is that the attitude, subjective norm, and perceived behavioral control are significant predictors of the behavioral intention, which is a significant predictor of actual behavior.

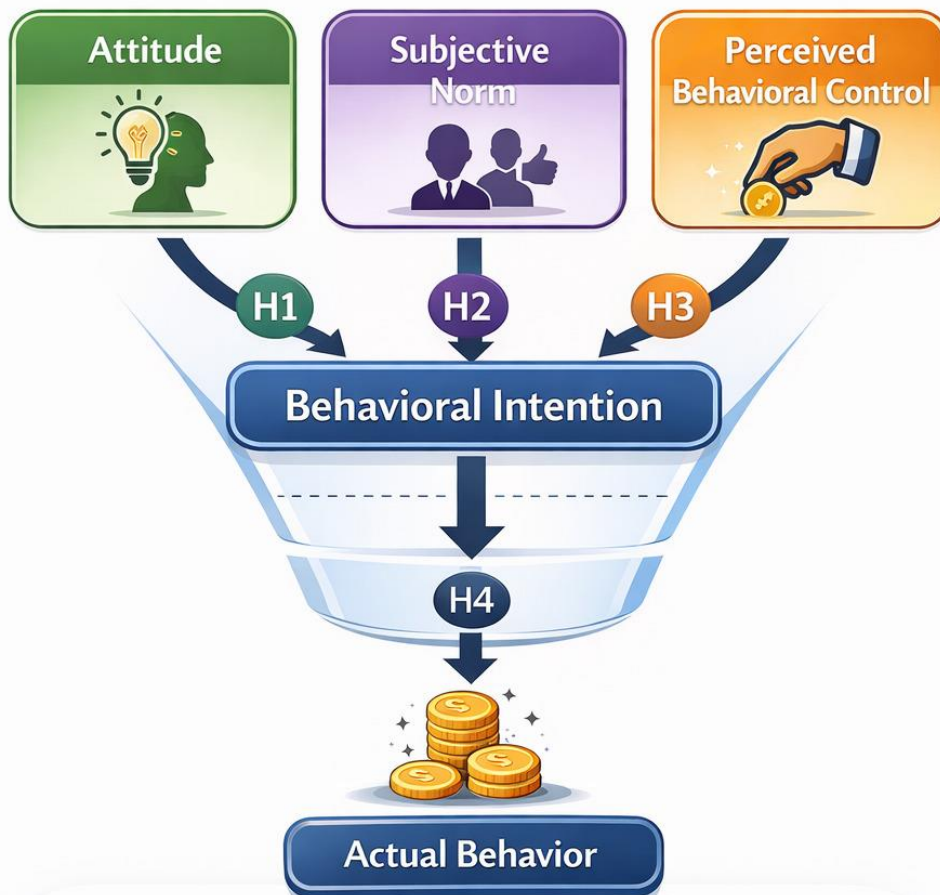


Figure I : Conceptual Frame Work of the study - Funnel Model from Intention to Impact (based on Ajzen, Icek. (1991). The Theory of Planned Behavior in Organizational Behavior and Human Decision Processes. 50. 179-211. 10.1016/0749-5978(91)90020-T.)

1.3.Research Methodology

The research was a PRISMA-based systematic literature review performed through reading and synthesizing 32 peer-reviewed empirical research works on entrepreneurship education (2012-2025) manually. Academic database screening against predefined inclusion criteria (university student samples that measure education-to-intention relationships) was used to identify papers. According to the PRISMA manual screening procedures, the studies were identified, read, and main results were extracted into Table I.

TPB dominance (16/32 studies), self-efficacy prevalence (16/32 studies), and university support effects (12/32 studies) were all identified as patterns by frequency counting in manual thematic analysis. The conceptual framework that emerges as a result of the synthesis of these patterns, provides strong evidence of the role of entrepreneurship education on the intentions of students [1-32].

2. LITERATURE REVIEW

According to De Jorge-Moreno et al. (2012), business education programs were described as directly impacting the development of the entrepreneurial intents. According to Bae et al. (2014), this correlation was affirmed by a large scale meta-analysis in terms of global relations. Graduate career trajectory changes to entrepreneurship were measured by Mohamad et al. (2015).

The results Hernandez-Sanchez et al. (2017] presented included the effects at the national level in terms of the increased rates of entrepreneurial activity in Spain. Wu et al. (2018) gave the evidence of the experimental feasibility of the animation instruction methods, which is notably higher than traditional ones.

Anjum et al. (2019) found that entrepreneurial passion was the primary intention making based on university support, and Dana et al. (2019) took the position that the enterprises in the developing countries were rather crucial to the development of entrepreneurs. Munoz et al. (2019) guaranteed the same attitude change among students with/without disabilities, whereas Jardim et al. (2019) did a literature review on the general effectiveness of the program.

Their definition of educational experience already established Jung and Lee (2020) as the strongest predictor to surpass the impact of gender/academic major. Munoz et al. (2020) highlighted the disability-related issues of the university, whereas Boldureanu et al. (2020) demonstrated that the role model increases venture confidence.

Lv et al. (2021), Wang et al. (2021), Tehseen et al. (2021), and Lu et al. (2021) found the effects of competence mediation, self-efficacy/psychological capital, attitude/desirability/feasibility, and university programs, respectively. Kusumojanto et al. (2021), Anjum et al. (2021), Li et al. (2021), and Contreras-Barraza et al. (2021) all agreed on the support systems and creativity improvement, social equity, and insignificant gender variations.

The studies by Zhu et al. (2022), Chang et al. (2022) and Cui and Bell (2022) as well as Yousef et al. (2022) and Liu et al. (2022) established the influence of employment relations, intended uses of the planned behavior, mindset formation, cultural moderation and family statuses.

The digital transformation (2023-2025): the digital ability-intention: it is the fully moderating entrepreneurial attitude/self-efficacy that mediates the digital ability-intention, and the digital tools are superior to the traditional workshops ($p < 0.01$); the alertness is also mediating across cross-country (Zhang et al. 2025) and the alertness is also mediating across cross-country (Bordean et al. 2025).

Year	Author(s)	Factors Analyzed in the study [Ref]
2012	J. de Jorge-Moreno et al. [19]	Business/economics programs, desirability, personal feasibility
2014	T.J. Bae et al.[28]	Correlation between entrepreneurship education and intentions
2015	N. Mohamad et al. [23]	Factors influencing students' choice to be startup owners
2016	A. Irin Sutha & Shankar [26]	Social entrepreneurship
2017	B.R. Hernández-Sánchez et al. [14]	National-level effects, entrepreneurial activity rates (Spain)
2018	Y.J. Wu et al. [7]	Animated teaching methods vs. traditional
2019	T. Anjum et al.[11]	Entrepreneurial passion, university support moderation
2019	L.-P. Dana et al. [8]	Technology-based enterprises in developing countries
2019	R.M. Muñoz et al. [6]	Entrepreneurship and disability for disabled students
2019	A.J. Jardim et al. [1]	Systematic review: program characteristics/effectiveness
2020	E. Jung & Y. Lee [4]	Education experiences, student traits, contextual factors
2020	Y. Cai et al. [9]	Building innovative ecosystems

2020	G. Boldureanu et al. [13]	Exposure to successful entrepreneurial models
2020	R.M. Muñoz et al.[5]	Entrepreneurship attitudes: students with/without disabilities
2021	Y. Lv et al.[15]	Planned behavior, competence mediation, social/economic development
2021	X.-H. Wang et al. [2]	Self-efficacy/psychological capital mediation
2021	S. Tehseen & S.A. Haider [3]	Entrepreneurial attitude, desirability, feasibility
2021	G. Lu et al. [10]	University programs, entrepreneurial passion
2021	N. Contreras-Barraza et al. [12]	Gender equality, attitudes, subjective norms
2021	T. Anjum et al. [16]	Perceived creativity, university support moderation
2021	A. Wibowo et al. [17]	Cross-sectional model, vocational students' intentions
2021	J. Li et al. [27]	Cognitive behavior theory, entrepreneurial strategy
2021	Y. Chang et al. [20]	Theory of planned behavior
2022	H.Q. Yousaf et al. [21]	Entrepreneurial attitude, culture moderation
2022	J. Cui & R. Bell [24]	Education activity, behavioral mindset (BEM)
2022	C. Wang et al.[29]	Entrepreneurial creativity, SEM bootstrap test
2022	R. Zhu et al.[18]	Field theory, sustainable intentions
2022	S. Liao et al. [22]	NEES, NEASNECS, NEI, NESE, MLI
2023	Y. Liu et al. [25]	Family economic status moderation
2024	J. Fan, J. Hu, & J. Wang [30]	Entrepreneurial intention, mediated by attitude & self-efficacy, moderated by social support;
2025	Y. Zhang et al. [31]	Digital ability-intention, alertness mediation (cross-country)
2025	O.N. Bordean et al. [32]	Cross-country entrepreneurial intentions

Table I : Synthesis of Entrepreneurship Education Studies(2012 -2025)

2.1 Key Pattern Identified through the Synthesis

The 32 empirical studies (2012-2025) show that there are common trends in the outcomes of entrepreneurship education on student intentions. Theory of Planned Behavior (TPB) offers the predominant theory in 16 studies, and self-efficacy was found to be the most strong mediator by Y. Lv et al. (2021), Y. Chang et al. (2021), and X.-H. Wang et al. (2021) ($b=0.35-0.52$, 16/32 studies).

3. Findings & Discussions

The key findings and their implications for how entrepreneurship education shapes students' intentions and competencies are presented in the following section, which is based on the synthesis of 32 empirical studies.

3.1.University support systems

University support systems are consistently amplifying entrepreneurial intention (T. Anjum et al. 2019, 2021, G. Lu et al. 2021), and the latest studies indicate a superiority in digital delivery in comparison with the traditional one (Y. Zhang et al. 2025).

The approach of methodological uniformity, quantitative surveys (30/32 studies), SEM analysis (18 studies), and student samples proves the universal positive role of education in entrepreneurial intentions mediated by TPB-mediated self-efficacy pathways, which is a strong basis of the present research [1-32].

3.2.The Impact of Diverse Background Entrepreneurial Education Programs.

The results of entrepreneurial education are different depending on family and academic backgrounds. Y. Liu et al. (2023)[25] and H.Q. Yousaf et al. (2022)[21] show the results of business families students who have stronger program enrollment and venture intentions. Nevertheless, E. Jung & Y. Lee (2020)[4] and R.M. Munoz et al. (2020)[5] did not find any significant change in attitudes after intervention based on business/non-business backgrounds and postulated that education balances the mindset of an entrepreneur irrespective of origin [4,5,18,21,25].

3.3.Effect from Theoretical Background

Entrepreneurship requires the presence of high order thinking capabilities, psychological strength, and innovative problem solving to overcome venture uncertainties. Recent studies focus on building these capabilities via higher education that aims at entrepreneurial intention building in the formative university years [1-32].

3.4.The effects of entrepreneurship education can be explained by various factors:

Pedagogical practices: Traditional vs. experiential vs. digital delivery [7,13].

Institutional support: University environments and guidance [9,10,11].

Student factors: Family History, previous exposure [4,25].

Mechanisms of the mind: Passion, resilience, risk tolerance [11,16].

This study integrates these aspects in TPB and looks at how education programs develop entrepreneurial intentions by developing skills, changing attitudes, and enabling institutions, which are enhanced by the support systems in universities (T. Anjum et al. 2019, 2021, G. Lu et al. 2021), whereas recent studies indicate the overpowering impact of digital delivery over the conventional one (Y. Zhang et al. 2025). Specifically, the relationship between the attitude and self-efficacy mediates entrepreneurial intention in China, whereas the social support mediates the association between the education and entrepreneurship found in the country and entrepreneurial intention (Fan et al., 2024), which to a large extent indicates alignment with the Theory of Planned Behavior.

Methodological consistency (30/32 studies), SEM analysis (18 studies), and sample of students (universal education with positive effects on entrepreneurial intentions) are used to confirm education as a universal mediator of self-efficacy mediations through TPB, which provides a strong basis of the present study [1-32].

Digital and Cross-Country Processes in Entrepreneurship Education.

Recent research emphasizes the ways in which entrepreneurship education influences intentions by both conventional and digital processes, and in a wide range of settings:

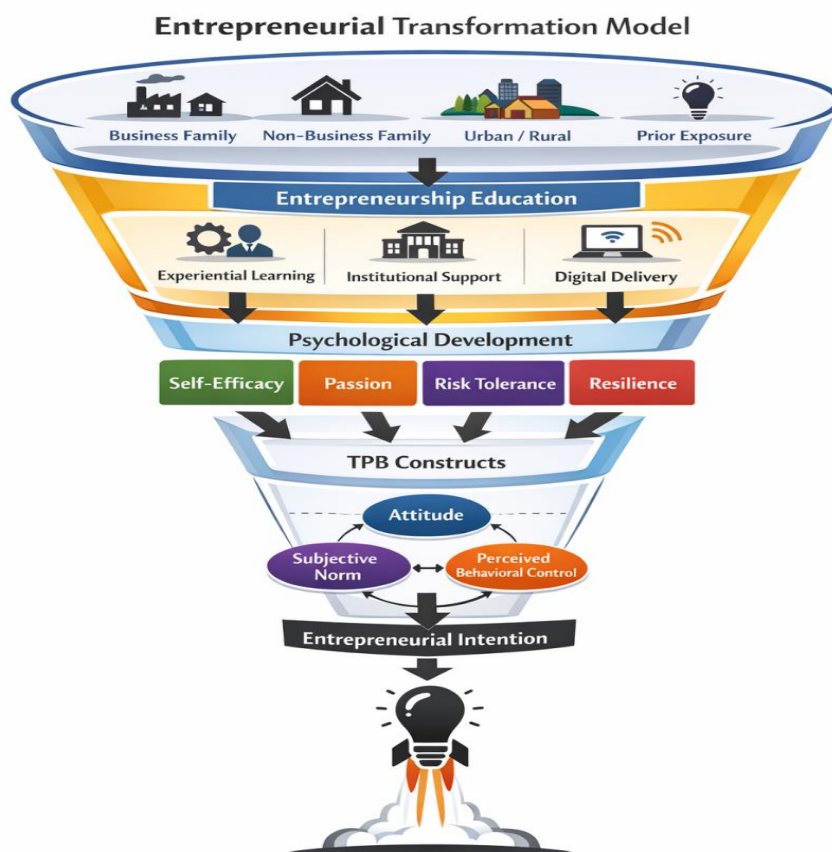


Figure II: Design Principle for Entrepreneurial Transformation

4. Conclusion

The systematic review of 32 studies (2012–2025) confirms that entrepreneurship education consistently improves students' entrepreneurial intentions. The synthesis identifies four central findings: (I) self-efficacy is the strongest predictor of entrepreneurial intention; (II) university support systems significantly amplify this effect; (III) digital and experiential pedagogies demonstrate stronger outcomes than traditional delivery modes; and (IV) entrepreneurship education contributes to equalizing entrepreneurial mindset across diverse academic and family backgrounds.

By positioning entrepreneurship education as the primary antecedent of entrepreneurial intention through attitude, subjective norms, and perceived behavioral control, this study aligns with the Theory of Planned Behavior. Self-efficacy corresponds to perceived behavioral control and emerges as the dominant mediating pathway, while university ecosystems reinforce subjective norms. Digital learning environments further strengthen both attitude formation and perceived behavioral control. The evidence from reviewed studies supports the view that the funnel model based on Ajzen, Icek. (1991), conceptualizes entrepreneurship education as the foundational driver that transforms intention into entrepreneurial impact.

Practically, universities should prioritize experiential learning, structured mentorship ecosystems, and digitally integrated pedagogies to enhance student confidence and venture readiness. Future research should

longitudinally track students from intention formation to actual venture creation to better understand the intention–behavior transition.

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