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UNPACKING THE BLACK BOX IN DEVELOPING COUNTRY ACADEMIA: THE MEDIATING ROLE OF ENTREPRENEURIAL FRUSTRATION TOLERANCE IN LINKING INDIVIDUAL ATTRIBUTES TO ACADEMIC ENTREPRENEURIAL ENTHUSIASM

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Abstract

Purpose

This study investigates why some faculty members in developing-country universities remain entrepreneurially enthusiastic despite persistent institutional adversity. Specifically, it examines the mediating role of Entrepreneurial Frustration Tolerance in linking Entrepreneurial Self-Identity and Learning from Failure with Academic Entrepreneurial Enthusiasm among public-sector university faculty in Pakistan. The study addresses the psychological "black box" underlying sustainable academic entrepreneurship.

Design/Methodology/Approach

A descriptive cross-sectional quantitative design was employed using survey data collected from 380 full-time faculty members working in public-sector universities of Punjab, Pakistan. Respondents were selected through proportionate stratified random sampling. Structural equation modeling was used to test direct and mediating relationships among the study variables.

Findings

The findings reveal that Entrepreneurial Frustration Tolerance is the strongest predictor of Academic Entrepreneurial Enthusiasm. Learning from Failure significantly influences both Entrepreneurial Frustration Tolerance and entrepreneurial enthusiasm, whereas Entrepreneurial Self-Identity affects enthusiasm only indirectly through frustration tolerance. The results confirm that sustained entrepreneurial enthusiasm in academia depends more on psychological endurance than temporary entrepreneurial motivation.

Theoretical Implications

The study advances academic entrepreneurship theory by shifting attention from entrepreneurial intention toward affective endurance and long-term entrepreneurial persistence. It introduces a frustration-conditioned explanatory mechanism through which entrepreneurial attributes are translated into sustained entrepreneurial enthusiasm within developing-country academia.

Practical Implications

The findings suggest that universities should move beyond infrastructure-focused entrepreneurship policies and incorporate psychological resilience-building within faculty development systems. Higher education institutions must strengthen research-centered academic culture by reducing excessive administrative burden and fostering long-term entrepreneurial engagement among faculty.

Recommendations

Universities should prioritize teaching, research, innovation, and commercialization as the core responsibilities of academic faculty while limiting prolonged administrative concentration among professors. Regulatory bodies, particularly the Higher Education Commission, should ensure stronger implementation of policies intended to preserve faculty focus on research productivity and entrepreneurial contribution.

Limitations and Future Research Directions

The study is limited to public-sector universities in Punjab, Pakistan, using a cross-sectional design. Future studies should adopt longitudinal and mixed method approaches while incorporating additional psychological, institutional, and cross-national variables to further unpack the dynamics of entrepreneurial endurance within academia.

1. INTRODUCTION

1.1 The Socio-Psychological Foundations of Academic Entrepreneurial Enthusiasm in Developing-Country Universities

Socio-economic challenges facing Pakistan include population growth, stagnation in the labor market, and limitations associated with institutions that limit the capability to absorb the growing number of graduates. Despite a young demographic profile, increased inflation rates, loss of competitiveness within industries, and decreased consumer spending capacity have prevented the government and the private sector from creating new job opportunities for the growing number of graduates (Khan, Ashraf, Nasir, & Khan, 2024). Considering these challenges, entrepreneurship is seen as one of the key means of creating jobs, innovating and building resistance to adverse conditions among countries that struggle with their conventional labor markets due to an expanding graduate population (Munir, Nauman, Ali Shah, & Zahid, 2024; Tantawy, Abdalla, Yen Ng, & Amankwah-Amoah, 2026). Entrepreneurship cannot be developed solely using financial incentives and other policies. Indeed, Pakistan has tried different means of encouraging entrepreneurs to establish their businesses, but such efforts have been hindered by lack of enthusiasm in terms of being an entrepreneur (Munir et al., 2024). As entrepreneurship is essentially a psychological endeavor, it requires embracing uncertainty and perseverance, together with viewing entrepreneurship as a career rather than a business choice. Hence, it becomes vital to identify those personality traits that can enhance the enthusiasm of individuals towards entrepreneurship.

Under such conditions, it is natural for the concept of HEIs as the strategic instruments for initiating the processes of entrepreneurial social transformation to be developed. First, universities house the largest concentration of youth, science, and innovation potential in the country. Most importantly, universities are one of the few organized bodies capable of forming professional attitudes repeatedly through the process of education. As a result, current educational policies are aimed not only at universities' role in providing students with knowledge but also in creating entrepreneurial universities that would teach students to innovate, think in commercial terms, and initiate ventures (Guerrero & Urbano, 2012; Perkmann, Salandra, Tartari, McKelvey, & Hughes, 2021; Tunalioglu, Karatas-Ozkan, Costanzo, & Baruch, 2024). Indeed, the Pakistani Higher Education Commission initiated the

development of ORICs, business incubation centers, entrepreneurship promotion, and other programs aimed at preparing universities for functioning in the knowledge economy (Higher Education Commission, 2024, 2026; Minute Mirror, 2025). Nevertheless, the presence of such facilities does not guarantee success by itself.

The main factor involved here is the university academic faculty because these are the individuals that will be responsible for interpreting and translating the entrepreneurial values in ways that can be acted upon. Entrepreneurial orientation of students is not based on the availability of incubation centers at the campus but rather depends on the consistency with which respected academics have convinced students that entrepreneurship is legitimate, socially valued, and professionally attainable. Faculty members act as interpreters of the possibility of entrepreneurship as a career path for students (Munir et al., 2024; Naseer, Taha, & Hasan, 2023). Therefore, the success of universities in nurturing entrepreneurial ventures will not depend on how conspicuous the incubation centers are, but rather on how committed faculty members are.

Academic Entrepreneurial Enthusiasm (AEE) will become key to our analysis from here. AEE refers to the prolonged impact, passionate engagement, and persistent psychological excitement exhibited by faculty in relation to entrepreneurial activities such as mentoring ventures, promoting commercialization, encouraging entrepreneurship in startups, collaborating with firms, and supporting innovation (Fenters, Balven, Ashforth, Waldman, & Siegel, 2025; Sendra Pons, 2022). Unlike the mere willingness of faculty towards taking part in entrepreneurial actions (entrepreneurial intention) or the transient motivation triggered by sporadic incentives, excitement represents a stronger affective arousal associated with enjoyment, interest, energy, and active participation in entrepreneurial behavior. In organization psychology literature, enthusiasm is viewed as a highly aroused positive state that leads to proactive behavior, innovation, and discretionary efforts above and beyond one's formal job expectations (Luthans, 2002; Salanova, Llorens, & Schaufeli, 2011). In other words, the use of AEE in academia indicates that enthusiasm is the very affective force responsible for sustaining continued faculty interest in entrepreneurship once initial curiosity about the subject matter fades away.

This distinction is vital since universities in developing countries cannot afford to have faculty merely participating in entrepreneurial activities out of compliance for some time in the future. Universities need enthusiastic faculty who can persist in their entrepreneurial endeavors despite the presence of recurring challenges, failures, and setbacks. The shift of any educational institution towards entrepreneurial orientation entails an accumulative process. Entrepreneurial culture among students does not emerge overnight or in just one class dedicated to business incubation. It takes many conversations, much encouragement of ventures, lots of mentoring, and a steady flow of entrepreneurial experimentation through different semesters. Cultural engineering over long periods of time is impossible without persistent enthusiasm.

As is apparent from the research in the literature, entrepreneurial effect tends to be a better predictor of persistence than intentions in entrepreneurship because while intentions can spark action, enthusiasm keeps people going when things get difficult (Cardon & Kirk, 2015; Obschonka, Moeller, & Goethner, 2019). Professors who have high levels of entrepreneurial enthusiasm will be more willing to mentor their students voluntarily, facilitate connections between their students and industry representatives, stick to their emerging businesses despite their flaws, and continuously infuse entrepreneurship into conventional courses. On the other hand, professors who do what they do out of mere procedural compliance might show up at entrepreneurial sessions yet become mentally disengaged as organizational resistance increases. This implies that for universities in developing nations to create an entrepreneurial ecosystem, they need to ask whether they have enough entrepreneurial enthusiasm among their staff to implement their entrepreneurship policy in action.

It is essential that the importance of placing emphasis on AEE be heightened further when considering the situation in Pakistan. In that environment, scholars who practice entrepreneurship face an institutional context that is quite difficult to navigate. They encounter problems such as delayed commercialization, shortage of seed money, bureaucratic practices, inadequate collaborations between the university and industry, negative attitudes toward non-conventional teaching, and suspicion against non-conventional academics (Farrell et al., 2024; Ullah & Asghar, 2024). As a result, the process is emotionally tiring for those involved rather than satisfying. The academic could start off enthusiastically but eventually experience a decline from excitement to tiredness, tiredness to apathy, and finally to giving up entirely. This process is especially dangerous in terms of the university losing access to its only channel through which to influence students with entrepreneurship.

In the realm of academic entrepreneurship, however, attributes such as the entrepreneurial self and the ability to learn from failure will not lead to entrepreneurial enthusiasm unless the academics can withstand adversities and derive lessons from difficult situations. The concept of frustration tolerance within entrepreneurship involves withstanding uncertainties, rejections, and obstacles without giving up on their entrepreneurial efforts, whereas learning from failure involves transforming one's failures into opportunities (Cannon & Edmondson, 2001; Cope, 2011; Shi et al., 2021). These are thus the processes through which personal assets are translated into entrepreneurial enthusiasm among academics in emerging countries.

Recent findings confirm that this apprehension is not purely theoretical. New findings concerning the sphere of entrepreneurial education in Pakistan reveal the link between entrepreneurial practices on the part of young people and their coaches and frustration, demotivation, exhaustion, and fatigue if the institutional support is lacking (Frontiers in Education, 2025). Similar patterns of findings from the general academic research on entrepreneurship show that affective well-being is not likely to be maintained in resource-scarce university settings if faculty members have no sound psychological resources for doing so (Balzano, Bortoluzzi, Bunjak, & Černe, 2024; Coppens & Knockaert, 2025). All the findings lead to a conclusion that enterprise education, as well as entrepreneurship education (AEE), should be treated as a scarce strategic resource, rather than a self-emerging consequence of entrepreneurship policy implementation. While universities can create incubators, launch commercialization programs, and organize startup contests, all the efforts made will hardly prove to be substantial in case of non-entrepreneurial academics at campuses.

For this reason, Academic Entrepreneurial Enthusiasm is chosen to be the main dependent variable because it is regarded as the most behaviorally important indicator of entrepreneurial dynamism among universities. The reasoning behind this research hypothesis is that the future entrepreneurial path of Pakistani universities depends not only on whether the staff members are familiar with entrepreneurial processes and structures but also on whether they remain emotionally excited enough to constantly push for entrepreneurship among students, co-workers, and other institutional components. In general terms, Entrepreneurial Frustration Tolerance represents an important psychological component, while Entrepreneurial Self-Identity and Learning from Failure become supporting individual antecedents of the same category. The reason for choosing all these variables lies in the ability to explain the main phenomenon of Academic Entrepreneurial Enthusiasm.

Therefore, the key thrust of this research will be to appreciate the fact that, in the case of developing nations, any form of academic entrepreneurship transformation is first and foremost an issue of affection before it can become an organizational issue. The fact is that universities do not become entrepreneurial just because of statements of policy but become entrepreneurial only after faculty members consistently display their entrepreneurial behavior to such an extent that they change the ambitions of their students. It is therefore crucial to understand the elements that

help maintain, nurture, and sustain Academic Entrepreneurial Enthusiasm.

1.2 Theoretical Gap, Black-Box Contribution, and Study Positioning

Despite many developments in academic entrepreneurship, a significant number of previous investigations have paid attention to entrepreneurial intentions, hindrances in commercialization, institutional support, technology transfer processes, or broad factors related to academics' involvement in entrepreneurship (Naseer et al., 2023; Perkmann et al., 2021). Undoubtedly, such research has greatly contributed to our knowledge concerning reasons for academics' involvement in entrepreneurial activity, but not enough attention has been given to another, more difficult issue – why some academics keep their entrepreneurial spirit, whereas others lose it despite being equally involved in the institution?

This is theoretically important because the successful performance of the entrepreneurial role by universities does not lie in one-time faculty involvement but rather lies in prolonged, emotional, and enduring faculty involvement. Faculty entrepreneurship has often been described in literature as an activity, while entrepreneurial role performance by universities can be more appropriately described as an endurance activity that requires positive emotions to sustain. Therefore, literature adequately addresses the issue of faculty entrepreneurship in terms of participation but fails in addressing enduring enthusiasm toward faculty entrepreneurship. This is especially true in developing country contexts where faculty entrepreneurship involves elements of bureaucratic hassle, resource constraint, and frustration, among other factors.

The current study highlights the unexplored internal transformation within academic entrepreneurship as a psychological black box. Specifically, previous literature has failed to explore the process through which personal entrepreneurial resources get converted into long-term Academic Entrepreneurial Enthusiasm (AEE) when entrepreneurial activities become emotionally taxing. This paper fills the gap by focusing on AEE, not intent or a single experience of entrepreneurship but rather entrepreneurial enthusiasm, in the analysis. Entrepreneurial Frustration Tolerance serves as the psychological mediator, whereas Entrepreneurial Self-Identity and Learning from Failure act as constrained yet relevant precursors.

In this manner, therefore, the distinctive contribution made by this study consists in the rethinking of the literature on academic entrepreneurship in terms of affective rather than structural visibility, and in shifting the focus away from questions concerning faculty involvement in entrepreneurship to questions concerning the potential for faculty to maintain an enthusiastically entrepreneurial spirit over time. Given that universities in Pakistan face such unusually heavy burdens in terms of development, this change cannot simply be regarded as one of theory but rather must be considered a necessity for gauging the possibility of achieving sustainable transformation.

2. Literature Review

2.1 Entrepreneurial Self-Identity and Academic Entrepreneurial Enthusiasm

As academic entrepreneurship has become an increasingly salient topic of research in recent years, more attention has been paid to how the shift of the university professor from a knowledge producer to an entrepreneur cannot solely be explained in terms of incentive structures at work. Instead, the process of academic entrepreneurship entails a profound psychological transformation, where the researcher adopts a certain psychological disposition, leading him to perceive himself as having legitimate reasons to act in a particular way and adopt a specific role (Giunti & Duberley, 2023; Hayter, Fischer, & Rasmussen, 2022). Even though academic entrepreneurship appears externally manifest in such activities as the commercialization of research results, obtaining patents, consulting, spin-off activities, and collaboration with companies, it is primarily about identity, as being an entrepreneur at a university means going beyond the traditional perception of professors as researchers concerned with teaching and publication activities (Jain, George, &

Maltarich, 2009; Miao Wang, Soetanto, Cai, & Munir, 2022).

Entrepreneurial self-identity (ESI) can be described as the level of internalization by individuals of their own entrepreneurial identity as a core element of their personal and occupational identities (C. Murnieks & Mosakowski, 2007; Obschonka, Goethner, Silbereisen, & Cantner, 2012). Different from temporary entrepreneurial intentions, which normally indicate situational openness to engaging in entrepreneurship activities, ESI involves deep cognitive processes where the actions that the entrepreneurs take are perceived as something real rather than experiments in professions (Farmer, Yao, & Kung–Mcintyre, 2011; Radu-Lefebvre, Lefebvre, Crosina, & Hytti, 2021). People who exhibit high levels of ESI perceive themselves as entrepreneurs in their thoughts, as they consider themselves to be opportunity seekers and problem solvers (P. Burke & Stets, 2009; Fauchart & Gruber, 2011). Self-verification takes place in situations where individuals act entrepreneurially, since they believe that what they do corresponds to their identity as entrepreneurs. This kind of self-identity formation process is especially important since the theory of identity indicates that people have intrinsic motivation to have their inner and outer identities be congruent (Stets & Burke, 2000).

In this regard, the significance of this identity congruence identity process in achieving congruency cannot be overstated, especially in the context of the higher education environment, which has traditionally socialized university faculty into a professional script of being non-commercial and valuing scientific rigor, publication output, and teaching over business activity (Giunti & Duberley, 2023; Lam, 2011). Considering such a phenomenon, entrepreneurial engagement usually causes confusion and role conflict because unless the university faculty cognitively aligns the two aspects of his/her identity as a university faculty and an entrepreneur, such activity will be viewed as ambiguous for this person (Klofsten et al., 2019; Mäkinen & Esko, 2023). Research into identity processes demonstrates that the key success factors for successful business engagement of university academics is not about having necessary skills and/or opportunities but being able to carry out the necessary identity work to create identity alignment between being an academic and a successful entrepreneur(Klofsten et al., 2019; Mäkinen & Esko, 2023). In other words, being involved in entrepreneurial activity requires more than just resources; what counts is being perceived as "something people like me do." The importance of ESI is more pronounced when it is seen in connection with academic entrepreneurial enthusiasm (AEE), which is described as an energetic and affective predisposition to engage in entrepreneurial activity within the university context (Pattnaik, Mmbaga, White, & Reger, 2024). Unlike entrepreneurial intentions, AEE is superior to intentions, as an intention is simply a planned decision while enthusiasm includes an energized emotional state, perseverance, and behavioral willingness to stay engaged in entrepreneurial activities despite their difficulties and uncertainties (Cardon, Gregoire, Stevens, & Patel, 2013; Gielnik, Cardon, & Frese, 2021). According to Pattnaik et al. (2024), enthusiasm is a driving force that turns potential entrepreneurship into actual entrepreneurship in the academic community, especially when entrepreneurial activities require extended efforts and adjustments. Thus, to understand the reasons behind some academics' high levels of energy for entrepreneurial activities and others' reluctance or detachment from them, it is important to look at the phenomenon beyond structural factors and explore its identity-driven emotional foundations.

The relationship between entrepreneurial self-identity (ESI) and entrepreneurial effort and effectiveness (AEE) may be considered in terms of the congruency between identity and affect. According to identity theory, when people act in accordance with salient identities, they enjoy feelings of authentic self-presentation, competence, and positive emotions. Consequently, people develop a stronger sense of motivation to engage in activities associated with those identities (P. J. Burke, 1991; C. Y. Murnieks, Mosakowski, & Cardon, 2014). For example, when an academic whose self-identity is strongly

marked by entrepreneurship performs an entrepreneurial behavior, he/she does not only complete the task but enjoys self-reinforcement. Professors consider actions like commercialization, partnering with a venture, transferring technologies, and mentoring entrepreneurs as a sign of "being the type of scholar I think myself." The self-verification process leads to positive excitement, intrinsic enjoyment, and absorption of motivation, all of which result in entrepreneurial enthusiasm (Cardon, Wincent, Singh, & Drnovsek, 2009; Gielnik et al., 2021). On the other hand, in situations where ESI is relatively weaker or less developed, entrepreneurial acts may be viewed as tasks that have been forced upon individuals by institutions as a peripheral or even disruptive activity relative to real academic work.

This dichotomy has been further validated through empirical evidence gathered from the current body of research on academic entrepreneurship. Specifically, Miao Wang et al. (2022) reveal that identity centrality plays a pivotal role in affecting the entrepreneurial orientation of university scientists because it helps gauge the perceived relevance of the entrepreneurial opportunities that arise in their minds. In addition, the work by Hayter, Nelson, Zayed, and O'Connor (2018) reveals that engagement in entrepreneurial activities among university scientists comes after they have formed an entrepreneurial identity, indicating that the adoption of such behaviors arises after an identity is acquired. More directly, Pattnaik et al. (2024) show that increased congruence between the entrepreneurial self-guide and one's true self makes people more interested in engaging in academic entrepreneurship. In sum, the results indicate that the enthusiasm to engage in entrepreneurship cannot be dissociated from consistency in one's identity.

Additionally, research based on the concept of identity-based motivation supports this assertion since the theory suggests that identities function as interpretive frames used to interpret problems, difficulties, and demands (Oyserman, Elmore, & Smith, 2012). With entrepreneurship being compatible with one's identity, difficulties are seen as challenges related to the meaningful process of engaging in entrepreneurial behavior rather than signals of identity misalignment. Hence, researchers who possess strong ESI will be more willing to see delays in funding, unsuccessful negotiation, bureaucracies, or difficulties associated with commercializing research as implementation issues rather than reasons for withdrawal. Such a positive attributive frame will help in preserving emotional resources and sustaining enthusiasm. However, researchers with weak ESI are more inclined to view these difficulties associated with entrepreneurship as signals that participation in entrepreneurial activity is not their responsibility. Thus, ESI can not only motivate academics to engage in entrepreneurial activity, but it also helps sustain the necessary emotional resources for maintaining commitment (Oyserman et al., 2012).

This relevance of the connection between identity and enthusiasm becomes even more crucial when considering the institutional ecosystems of entrepreneurship in developing nations like Pakistan, which tend to be relatively immature, poorly organized, and often ill-equipped for supporting academic entrepreneurship. The problems experienced by academics working within such environments include scarcity of infrastructure for technology transfer, poor connections between universities and industry, lack of venture capital, strict bureaucracy, and unclear reward structures for their entrepreneurial efforts. Such circumstances make extrinsic motivation not sufficient for fostering entrepreneurial drive. For this reason, the source of motivation for maintaining involvement in entrepreneurial activities should derive from internal resources of a psychological nature. Due to ESI being an intrinsic motivator, the effect of identity on enthusiasm is expected to be much more pronounced among academics in less developed nations, since external motivation and entrepreneurial success cannot always be guaranteed in such circumstances.

Analyzing the connection between entrepreneurial self-identity and academic entrepreneurial enthusiasm on an accumulative level of analysis reveals that it is theoretically

consistent and empirically validated. An individual's entrepreneurial self-identity transforms the concept of entrepreneurship from being a marginal institutional norm to a relevant self-constructing profession. Once individuals have transformed the institution of entrepreneurship into a relevant self-constructing profession, performing entrepreneurial activities provides them with self-validation, positive emotion, intrinsic motivation, and psychological energy. The resultant emotional arousal is identical to academic entrepreneurial enthusiasm. Hence, professors who consider themselves entrepreneurial researchers are supposed to be more eager and persistent towards academic entrepreneurship than those who only identify themselves as traditional scholars.

Hence, the following hypothesis is suggested:

H1: *Entrepreneurial Self-Identity has a significant positive effect on Academic Entrepreneurial Enthusiasm***.**

2.2 Learning from Failure and Academic Entrepreneurial Enthusiasm

The concept of learning from failure (LFF) has evolved into a psychologically significant and yet theoretically underdeveloped phenomenon in the literature on entrepreneurship, especially in situations marked by pervasive uncertainty, repeated failures, and poor institutional backing (Cope, 2011; Ucbasaran, Shepherd, Lockett, & Lyon, 2013). Unlike in more formal settings of management, where mistakes can be prevented through established organizational practices, entrepreneurship subjects people to the experience of failure, which is highly visible, costly, and emotional, resulting in possible consequences ranging from damage to reputation, loss of money, and diminished self-confidence (Byrne & Shepherd, 2015; D. A. Shepherd, 2003). For academic entrepreneurs, these threats are intensified because university scholars not only work in an uncertain business environment but are also engaged in entrepreneurial activities beyond their usual areas of scientific authority, often being unskilled in terms of commercialization, unfamiliar with the market, and unsupported institutionally (Jain et al., 2009; Lam, 2011). As a result, the ability to derive lessons from such failures is the key distinguishing factor between academics who gradually become discouraged about entrepreneurship and those who adopt a resilient attitude towards their engagement in such activities.

Theoretically, learning through failure refers to the mental process whereby people reflect on their failed business experience, analyze the underlying causes of such failure, gain valuable lessons, and then modify their future strategic actions accordingly (Jenkins, Wiklund, & Brundin, 2014; Politis, 2005). This conceptualization goes beyond the oversimplified notion that failure always brings knowledge. The existing literature has long stressed that failure can only become developmental when people take time to reflect rather than avoid emotional processing of it (Cope, 2011; Rawal & Sarpong, 2024). Put differently, while failure as such represents nothing more than an unfortunate occurrence, it is only through the reflection on the experience of failure that one learns valuable lessons and turns failure into an important source of personal growth in terms of skills and business acumen (Amankwah-Amoah, Khan, Ifere, Nyuur, & Khan, 2022; Minniti & Bygrave, 2001). This theoretical point is especially crucial for the current research since students' interest in entrepreneurship cannot possibly depend on their experience of failures; rather, it relies on their interpretation of such experience.

Understanding the importance of LFF can be greatly enhanced by looking into this issue through the lens of experiential learning theory. According to this theory, an individual tends to acquire knowledge deeply and sustainably in situations where previous ideas are challenged through experiences that require him/her to reflect on and revise action modes (Kolb, 2014; Politis, 2005). Entrepreneurs, as learners, encounter many instances where their past experiences are confronted. In the process, they realize how inadequate their previous assessments have been, discover underlying restrictions imposed by the environment, and are forced to consider the discrepancy between expectations and facts (Cope, 2011; Eggers & Song, 2015). For

academic entrepreneurs, examples of such learning opportunities include having a commercialization idea turned down, ending a business cooperation with universities, the lack of investors' interest in their patient-related initiatives, and failure in launching faculty-led spin-offs. In each case, the person receives highly targeted feedback on either mistaken assumption about the market, obstacles imposed by institutions, difficulties in communicating with stakeholders, or issues related to resource mobilization. By analyzing carefully those failures, academics learn lessons beyond frustration and gain important insights. They serve to minimize uncertainties in future entrepreneurial activities and build confidence among academics in solving similar commercialization challenges (Fust, Jenert, & Winkler, 2018; Yuan, Hui, Min, & Xionghui, 2024).

In addition to its cognitive utility, LFF serves as a powerful tool for emotional recovery. Research on entrepreneurship failure consistently indicates that entrepreneurial failures result in the experience of grief, shame, frustration, helplessness, and self-doubt, all of which may significantly reduce the likelihood of engaging in entrepreneurship again (Jenkins et al., 2014; D. A. Shepherd, 2003). If not addressed properly, these negative emotions may lead to what can be called an entrepreneurial withdrawal psychology—an adaptive defense mechanism aimed at avoiding further involvement in entrepreneurship for the purpose of protecting one's self-respect. Reflective learning fundamentally changes the nature of the failure event. Instead of perceiving failure as a sign of incompetence, individuals learn to interpret their failure experience as information about improper strategy alignment, contextual unpreparedness, or poor process management (Byrne & Shepherd, 2015; D. A. Shepherd, Williams, Wolfe, & Patzelt, 2016). It should be noted that reinterpreting a failure experience has several motivational effects on individuals. In particular, the psychological discomfort associated with the negative experience may become more manageable once individuals realize that they have obtained some valuable insights from this experience (Rawal & Sarpong, 2024; Tedeschi & Calhoun, 2004).

Such emotional coding has a significant bearing on entrepreneurial enthusiasm in an academic setting (AEE). AEE refers to a persistent condition characterized by being motivated, energized, and optimistic about being involved in entrepreneurship-related activities in universities, despite delays and difficulties associated with them (Cardon et al., 2013; Pattnaik et al., 2024). While the concept of entrepreneurial enthusiasm starts with the idea that is exciting to an individual, it encompasses a more psychological component, referring to vigor that keeps mental energy going during times of no progress, failures, and unclear benefits (Gielnik et al., 2021). The problem with such a psychological state is that it is easily eroded when failure is viewed as evidence of incompetence and futility. On the other hand, the stronger the long-term feasibility orientation (LFF) of faculty members is, the more failures help increase their strategic skills and thus convince them of the likelihood of further success. Attainability plays an essential role in maintaining such a situation because, as noted above, enthusiasm is maintained not by the absence of setbacks but their usefulness.

The connection at issue holds special importance for the academic environment of developing nations. In Pakistan, for instance, academics involved in entrepreneurial endeavors often face numerous structural challenges, which include restricted seed money, immature infrastructure for intellectual property commercialization, poor industry connections, insufficient mentoring, and bureaucratic red tape within universities(Asif Iqbal, Shakur, & Hashim, 2024); Frontiers in Education, 2025). Given such circumstances, failure experiences are common features of academic entrepreneurship. Academics unable to learn from such common failures tend to consider them as further proof that entrepreneurship is meaningless both in institutional and emotional terms. Such a mindset gradually eats away one's motivation and causes disengagement with the activity. However, a learned failure-oriented academic tends to derive valuable practical knowledge from every failure experience in terms

of improving the way proposals are put together, negotiating with university administration, dealing with different investors, or planning more realistic timeframes for commercializing innovations. The continuous cycle of improvement keeps the person feeling like moving forward despite the lack of obvious positive results. It is the progress perception that serves as the motivating power in such a case.

Indeed, there is growing empirical evidence for this cognitive–affective approach. In their study of entrepreneurs in a developing country such as Pakistan, (Asif Iqbal et al., 2024) reveal that people with more regulated emotions, resilience, and reflective recovery skills learn much more from failure experiences. These results suggest that lessons learned from failure experiences are linked to positive adaptation and the maintenance of entrepreneurship activities rather than psychological breakdowns. Similarly, in their research on entrepreneurs in China, Zhao, Lu, Wang, and Pang (2024) prove that entrepreneurs who see challenges as informative experiences gain more strategic insights and persist in their entrepreneurial endeavors. Likewise, Cope (2011) argues that failure can be one of the most valuable sources of entrepreneurial development when people reflect deeply instead of protecting themselves against failure. Therefore, these scholars reach a common conclusion that an entrepreneur who has learned from failure is well-informed but also psychologically ready to stay involved in entrepreneurial activities.

From a theoretical standpoint, the relationship between LFF and AEE may be explained by three interrelated mechanisms. Firstly, LFF improves cognitive competence through decreased uncertainty because of strategic knowledge that is gained by the learner throughout the process (Fust et al., 2018; Politis, 2005). Secondly, LFF supports emotional resilience through changing the way of perceiving obstacles by viewing them as an opportunity to gain knowledge instead of being an obstacle to achieving one's goal (Byrne & Shepherd, 2015; D. A. Shepherd, 2003). Thirdly, LFF strengthens future orientation as entrepreneurs have acquired a realistic attitude toward entrepreneurship and are confident in pursuing their business ventures (Amankwah-Amoah et al., 2022; Asif et al., 2024). Under all the mechanisms working together, failure does not serve as the end point of motivation, but as a steppingstone to entrepreneurial maturity, which contributes to maintaining AEE.

In effect, this paper claims that the consistent level of enthusiasm toward academic entrepreneurship will not be created due to consistent successes, because success is rare in the university milieu of developing countries. Instead, a sustainable level of enthusiasm is developed due to the researcher's ability to continually withstand failures, understand their meanings, and use these understandings to improve his or her entrepreneurial decision-making skills in the future. Scholars who learn from failures develop a mental link to entrepreneurial opportunities, while those who just suffer from these failures lose their emotional connection to entrepreneurship.

Thus, learning from failure must be viewed not as an ancillary coping strategy but as an essential antecedent to further, enthusiastic involvement in entrepreneurial activities on the part of scholars.

Hypothesis H2: *Learning from Failure has a significant positive effect on Academic Entrepreneurial Enthusiasm*.

2.3 Entrepreneurial Self-Identity and Entrepreneurial Frustration Tolerance

Transition from the former pattern of scholarly practice to engaging in entrepreneurship is not only a change in conduct but a radical transformation of the way one defines one's professional self. The entrepreneur sees commercialization, venture formation, and knowledge commercialization as natural manifestations of his/her academic efforts. It is this internal redefinition that defines Entrepreneurial Self-Identity (ESI) concept, denoting the extent to which the individual incorporates the entrepreneur's role into the core structure of his/her self-concept (Farmer et al., 2011; Mmbaga, Mathias, Williams, & Cardon, 2020). Entrepreneurial self-identity is especially important in the context of academic entrepreneurship due to the fact that university scientists are usually immersed in an environment

where their scholarly activities cannot be considered traditionally entrepreneurial – they have to psychologically reconcile science and business in order for entrepreneurial behavior to become sustainable (Jain et al., 2009; L. Wang & Jiang, 2022). Modern research on academic entrepreneurship demonstrates that once the identity aspect is activated, scholars consider entrepreneurial activities as personal actions, rather than institutional obligations, and engage in entrepreneurial actions driven by their inner selves rather than external factors. Thus, entrepreneurial self-identity performs more functions than motivational – it helps interpret and resolve entrepreneurial issues at a cognitive and emotional levels.

This role of interpretation centered on identity acquisition becomes highly significant in the face of interruptions and delays experienced frequently during commercialization processes by entrepreneurial actors. These frustrations lead to what is defined as Entrepreneurial Frustration Tolerance (EFT), which refers to an ability to sustain oneself psychologically without withdrawing from entrepreneurial engagement due to goal-blockers within entrepreneurial events. Given the nature of entrepreneurship being full of uncertainties and mismatches between intended and actual outcomes, experiencing frustration is seen as a regular part of the process and not an occasional phenomenon (D. A. Shepherd, 2003; Ucbasaran et al., 2013). In the case of universities, this frustration can be intensified further because academic entrepreneurs may face institutional hurdles not only from the market but also within universities. Specifically, bureaucratic processes, control over intellectual property, technology transfer process hurdles, and the issue of legitimacy can discourage entrepreneurial actions (Bercovitz & Feldman, 2008; McAdam, Miller, McAdam, & Teague, 2012). Indeed, recent studies have shown that many academic entrepreneurs attempt to circumvent technology transfer process within universities due to these institutional challenges causing discouragement and procedural fatigue. Considering all of these issues, the success or failure of academics to engage in entrepreneurial activities will depend largely on their psychological capacity to cope with frustration.

From a theoretical standpoint, the influence of ESI on EFT can be justified through the lens of Identity Theory, which states that people attribute different levels of centrality to role identities and, thus, structure their cognitions and behaviors to ensure the continuity of their identities (P. Burke & Stets, 2009; Stets & Burke, 2000). If entrepreneurship occupies the center of the identity landscape of a person instead of being marginal, then failure experiences in business will be less perceived as signs of incongruent role behavior and more likely seen as expected challenges during identity performance. Hence, the experience of frustration undergoes identity centrality transformation. For an academic who perceives himself or herself as an entrepreneur at low levels, a negative reaction on the funding application, failed negotiations with the industry, and delays in patent approval are signals indicating that his or her entrepreneurial behavior is not congruent with one's academic identity, causing frustration and decreasing perseverance. However, for an academic who possesses high ESI, the same situations would appear as temporary obstacles to overcome during the already legitimized entrepreneurial identity performance (Farmer et al., 2011; Radu-Lefebvre et al., 2021). As no threat arises to the self of being entrepreneurial, the degree of emotion is greatly reduced.

The second explanation comes from Self-Regulation Theory, according to which the maintenance of perseverance towards challenging targets is possible only when the pursuit of these targets is inseparable from highly valued self-conceptions (Bandura, 1991; Carver & Scheier, 2001). The state of frustration reaches an unacceptable psychological level once the continuous inconsistencies between one's efforts and results raise questions regarding the usefulness and value of making further investments. On the other hand, if the target associated with being an entrepreneur is closely connected to one's identity, then disengagement from it will come with high cognitive costs, since ceasing to pursue it would imply giving up an important aspect of who one is. Therefore, in this

situation, the level of frustration at which one gives up the goal is much higher than usual. As a result, having a strong entrepreneurial self-identity (ESI) means having identity-induced stamina – the ability to stay perseverant not merely because it makes sense to do so rationally, but due to the necessity of keeping self-consistent by staying true to oneself both in terms of "who I am" and "what I do" (C. Y. Murnieks et al., 2014; Pattnaik et al., 2024). In fact, current studies on entrepreneurial identity highlight its role in stabilizing behavior in face of prolonged uncertainty and ambiguity due to being a psychological anchor of sorts.

Third, the contribution of Entrepreneurial Self-Identity (ESI) to Entrepreneurial Field Theory (EFT) is achieved via the cognitive processes of reappraisal and emotion regulation. In the context of entrepreneurship, frustration can be detrimental not merely because the objectives have been frustrated but, most importantly, because these setbacks lead to negative affective experiences such as feelings of helplessness, incompetence, or futility. According to emotion-regulation literature, people with a self-defining commitment to the domain tend to be able to regulate their emotions using adaptive cognitive reappraisals that reframe the situation as informative, exploratory, or necessary for development (Gross & John, 2003; Gross, 2015). Within the scope of entrepreneurial activities, this skill enables the actor to persist despite setbacks whereas those entrepreneurs who lack it will eventually give up their pursuit (Cope, 2011; Gielnik et al., 2021). From the standpoint of academic researchers, the existence of a strong entrepreneurial self-identity will reduce existential frustration arising due to the nature of the entrepreneurial role as it provides a meaning-making mechanism in terms of which failure can be conceptualized as an inseparable part of the process. Alternatively, one might say that the entrepreneur will find meaning and a rationale for what happens to them. This point is well supported by emerging literature on higher education, which demonstrates how entrepreneurial passion and entrepreneurial identity serve as moderators in overcoming the effect of academic frustration on future entrepreneurial actions. Hence, ESI strengthens EFT by facilitating the cognitive processing of entrepreneurial failures and minimizing psychological costs involved (Pfeifer, Šarlija, & Zekić Sušac, 2016).

The positive relationship between ESI and EFT becomes even more significant in developing countries' universities, which often lack robust entrepreneurship ecosystems, resulting in faculty members facing an abnormal amount of bureaucratic and market frustrations. For instance, in such universities, entrepreneurial support can be disorganized, seed money is rare, university-industry relationships are undeveloped, and entrepreneurial successes have not been legitimized in the promotion system. Hence, academics are unable to depend on external institutions to continue their entrepreneurial behavior, but self-generated commitment becomes the key factor. Identity serves as a replacement motivational system for academics in unfavorable circumstances, implying that the higher ESI academics have, the less they need external institutional confirmation to maintain their motivation (Powell & Baker, 2014; Tunalioglu et al., 2024). In contrast, in situations where academics have a lower sense of entrepreneurship, each new frustration reinforces their perception that being an entrepreneur is detrimental to their professional success and personally unsatisfactory. As a result, in developing country universities, like those in Pakistan, ESI and EFT are expected to have a core relationship rather than peripheral one because of their extensive frustration and identity being the fundamental psychological factor affecting whether academics engage in entrepreneurial activities despite ongoing obstructions.

All the above arguments taken together constitute a logical causal framework. The ESI construct improves the centrality of the entrepreneur's objectives, alters the meaning of the blocked results, increases the threshold for disengaging from an activity through self-regulation, and promotes adaptive appraisal of the negative emotions associated with entrepreneurship failure. By virtue of such interconnected processes, scholars who adopt the entrepreneurial role in

their identity to a higher degree are significantly more resilient to the frustration associated with research commercialization compared to scholars who develop an entrepreneurial orientation due to external factors.

Hypothesis H3: *Entrepreneurial Self-Identity has a significant positive effect on Entrepreneurial Frustration Tolerance.*

2.4 Learning from Failure and Entrepreneurial Frustration Tolerance

Today, in the context of entrepreneurship, failure is no longer seen as an unfavorable termination of a business project but rather as a valuable source of experience, where an individual acquires critical skills necessary for his/her future entrepreneurial activity (Cope, 2011; Politis, 2005). The issue of learning from failure is especially relevant within academic entrepreneurship, which is associated with multiple setbacks, extended uncertainty, bureaucratic barriers, resource deprivation, and institutional ambiguity (Jain et al., 2009; Lam, 2011). In such a situation, experiencing a failed venture does not necessarily mean that there will be no further attempts made at entrepreneurial activity; rather, what counts is one's ability to make sense out of this failure, to draw appropriate conclusions, and use it to develop a new set of entrepreneurial skills. Such processes are usually described as Learning from Failure (LFF): a phenomenon, according to which an entrepreneur critically examines failed experiences of entrepreneurship, identifies shortcomings, revises his/her assumptions about them and formulates ways for improving the situation in the future (Cope, 2011; D. A. Shepherd, 2003). Moreover, recent research suggests that failure-oriented learning may significantly increase an individual's thriving and adaptation post-failure experience (Coppens & Knockaert, 2025).

However, the importance of learning from failure (LFF) becomes even more evident when considering academic ecosystems in developing countries, whereby entrepreneurial initiatives often entail a series of predictable structural failures, rather than one-off events. Entrepreneurial faculty members in such environments often find themselves hindered by nascent structures supporting commercialization, poor connections between universities and businesses, operational inefficiencies, lack of entrepreneurship funding, and organizational cultures that persistently prioritize academic achievements over business engagement (Farrell et al., 2024; Ullah & Asghar, 2024). The case of Pakistani higher education institutions is emblematic of such an environment, in which entrepreneurial faculty members find themselves operating in a high-resistance institutional setting, characterized by lengthy bureaucratic processes, inadequate mechanisms for technology transfer, and inconsistent implementation of policies (Frontiers in Education, 2025). In such circumstances, failure experiences become almost unavoidable outcomes of entrepreneurial behavior. Nonetheless, academics who consciously choose to learn from their failures gradually acquire a contextual understanding of institutional blockages, reasons behind stalled commercialization efforts, and ways of strategic adjustment in the next project cycle (Asif Iqbal et al., 2024). Therefore, apart from serving as a generator of entrepreneurial insights, LFF also represents a psychological preparation tool for approaching future challenges.

Considering the above logic, a direct relationship between LFF and Entrepreneurial Frustration Tolerance (EFT) can be formulated. Within the framework of REBT, frustration tolerance is seen as the ability of an individual to endure blocked goals, postponement of results, and ongoing difficulties without viewing them as unbearable or demoralizing (Ellis & Dryden, 2007). According to (Harrington, 2005, 2006), low levels of frustration tolerance arise because of catastrophic appraisals of challenges, during which people perceive their challenging situations as unbearable and, thus, refrain from putting any efforts towards resolving them. In the realm of entrepreneurship, frustration tolerance tends to be low when obstacles faced by entrepreneurs are interpreted as indicators of hopelessness and are followed by emotional exhaustion and withdrawal (Caniëls & Motylska-Kuźma, 2023; Liu, 2025). Entrepreneurial Frustration Tolerance stands for the ability of entrepreneurs to exhibit behavioral

persistence and emotional control despite repeated entrepreneurship-related obstacles, uncertainties, and absence of prompt outcomes. Especially in academic entrepreneurship with coexistence of barriers within institutions and the market environment, EFT proves to be a crucial psychological condition for entrepreneurs' continuation in entrepreneurship (Balzano et al., 2024).

The theoretical foundation provides strong support for the claim that Learning from Failure (LFF) is an important antecedent of Effectuation (EFT), especially since failure learning has been shown to alter the entrepreneur's emotional and cognitive architecture in response to adversities. First, LFF reduces the sense of novelty and fear associated with potential difficulties. By repeatedly examining one's previous failures, individuals begin to realize that the difficulties experienced in entrepreneurship are not exceptional occurrences but rather a routine part of the entire entrepreneurial experience (Ucbasaran et al., 2013). The repetitive nature of such experience leads to a desensitizing effect, meaning that subsequent adversities will be viewed with less emotional intensity and greater psychological readiness (Barlow, Allen, & Choate, 2020; Foa & Kozak, 1986). In other words, what used to be seen as insurmountable becomes normal. And this in turn allows for a better tolerance of delays, rejections, and obstructions.

Second, Failure helps entrepreneurs cognitively reframe their frustrations, a process that plays a key role in developing frustration. Meaningful processing of failure involves more than just remembering the mistakes committed by entrepreneurs but also modifying the interpretation of those mistakes (Gross & John, 2003; Troy, Shallcross, & Mauss, 2013). It involves changing perceptions from seeing failure as personal incompetence or uncooperative environment to understanding setbacks as information related to strategy, timing, lack of resources, or organizational fit (Cope, 2011; D. A. Shepherd, 2003). The shift from catastrophic reframing to developmental reframing is consistent with REBT's definition of shifting from irrational tolerance beliefs to rational tolerance beliefs (David, Lynn, & Ellis, 2009; Dryden, 2021). Thus, LFF uses cognitive reframing of frustrations to train entrepreneurs how to see frustration as an impetus for adaptation, not disengagement. As such, entrepreneurs can tolerate frustrations better because they will no longer see any frustrated goal as a threat to their existence.

Third, LFF facilitates the gradual accumulation of psychological capacities that foster frustration tolerance. According to previous research, successful management of failure is associated with higher resilience, an internal locus of control, greater self-efficacy as an entrepreneur, and recovery, all of which increase the person's ability to tolerate stress under entrepreneurial circumstances (Bullough, Renko, & Myatt, 2014; De Hoe & Janssen, 2022). Scientific studies conducted in Pakistan show that entrepreneurs with higher emotion regulation and recovery skills can learn from their failures and maintain adaptability after experiencing entrepreneurial collapse (Asif Iqbal et al., 2024). As tolerance for frustration requires the capacity for emotion regulation along with task commitment, these psychological capabilities provide the foundation that facilitates the conversion of LFF into frustration tolerance. In other words, when an entrepreneur learns from past experiences, he or she develops both task-related confidence and frustration tolerance.

Fourth, by implementing LFF, the behavior-based coping mechanisms of entrepreneurs are increased. In each instance of analyzed failure, insights will be obtained in relation to non-working procedures, lack of resources, poor judgment, and additional actions that could have been taken (Eggers & Song, 2015; Jenkins et al., 2014). As a result, future incidents causing frustrations will not be handled based on helplessness, but through various possibilities that arise. Such flexibility decreases the intensity of entrepreneurs' problems by allowing them to become aware of numerous possibilities of overcoming them (Hayward, Forster, Sarasvathy, & Fredrickson, 2010). With the presence of coping alternatives, one becomes less trapped in

his/her situation, and thereby frustration tolerance increases.

This connection is particularly salient in the context of academic entrepreneurship, where academics experience a double pressure of being both scientists and entrepreneurs. Apart from experiencing the frustration that comes with market denial and uncertainties, they are faced with an additional layer of institutional suspicion, misalignment of incentive schemes, and concerns regarding the role of peer review in legitimizing their work (Balzano et al., 2024) (Frontiers in Education, 2025). Under such cumulative stress, academics who do not derive any positive lesson from failed past experiences are at greater risk of becoming emotionally exhausted and disengaged completely. On the other hand, academics that interpret failed experiences as entrepreneurial learning are more likely to tolerate delayed approvals, failed commercialization attempts, poor responses to stakeholders, and lack of cooperation better. It is also evident from recent research that learning from venture-related stress helps mitigate its negative psychological implications by enabling entrepreneurs to continue working efficiently under such conditions (Coppens & Knockaert, 2025). Thus, in the context of university-based entrepreneurial environment, learning from failures (LFF) can not only improve the quality of knowledge gained but also enhance the ability of academics to endure psychological challenges posed by recurrent entrepreneurial frustration.

Collectively, the above theoretical propositions lead to a unified cause-and-effect relationship: Learning through failure improves emotional regulation, reduces catastrophic views of problems, normalizes ongoing entrepreneurial challenges, builds psychological resources, and expands options for dealing with problems strategically. All these causes lead to one common effect: Increased tolerance for entrepreneurial frustrations without behavioral withdrawal. As such, researchers who devote themselves more to learning through failures in their entrepreneurial endeavors should, theoretically, have higher Entrepreneurial Frustration Tolerance when engaging in commercial activities. Thus, it is hypothesized that:

Hypothesis H4: *There is a significant positive relationship between Learning from Failure and Entrepreneurial Frustration Tolerance*.

2.5 Entrepreneurial Frustration Tolerance and Academic Entrepreneurial Enthusiasm

The current stream of research on entrepreneurship has shown that the maintenance of engagement within entrepreneurship is not achieved only due to the intentionality of cognition; instead, it is highly dependent on the ability of entrepreneurs to control aversive emotions produced through repeated failure at achieving their goals and the uncertainty and institutional barriers involved (Portocarrero, Newbert, Young, & Zhu, 2025; D. A. Shepherd, 2003). Entrepreneurs are constantly facing obstacles like being rejected, facing delays, dealing with a shortage of resources, and attempting failed commercialization's; all these factors are likely to affect their willingness to keep going because they are known to cause depletion of motivational energy and positive affect (Cope, 2011; Ucbasaran et al., 2013). This problem is particularly acute for academic entrepreneurship since faculty members need to engage in entrepreneurship ventures while also contending with university bureaucracy (Balzano et al., 2024; Pattnaik, Mmbaga, White, & Reger, 2023; Pattnaik et al., 2024).

Herein, Entrepreneurial Frustration Tolerance (EFT) has become a psychologically important resource for strategic use. Being based on the frustration tolerance framework, EFT refers to one's ability to tolerate entrepreneurial difficulties, hindrances, frustrations without being emotionally crippled or giving up their entrepreneurship-related endeavors (Ellis & Dryden, 2007; Harrington, 2005). Contrary to general resilience, which focuses on post-adversity recovery, EFT is concerned with entrepreneurs' capacity to cope with behavioral functioning under conditions of perpetual frustrations. The importance of such a theoretical distinction stems from the fact that entrepreneurial activity is rarely associated with single adversities but consists of accumulated micro-reversals, uncertainties, and constant interruptions during expected success (Caniëls & Motylska-Kuźma, 2023; Liu, 2025). As

a result, people who score highly in EFT tend to see commercialization obstacles as controllable rather than overwhelming elements of entrepreneurship.

The applicability of Entrepreneurial Feelings Theory (EFT) is enhanced by its connection to Academic Entrepreneurial Enthusiasm (AEE), which is considered a positively charged affective disposition characterized by the energetic, positive, and sustained drive to participate in entrepreneurial endeavors within universities, including inventions, consulting, commercialization, and business creation (Pattnaik et al., 2023). The concept of academic entrepreneurial enthusiasm must be viewed beyond just a positive attitude and instead be seen as an activated state of emotion that facilitates motivation, effort, and continuous investment in entrepreneurial behavior amid uncertainties. Earlier research in entrepreneurship theory has found that positive emotional states, including enthusiasm, passion, and energetic engagement, are crucial for providing the necessary impetus to pursue entrepreneurial opportunities and sustain entrepreneurial persistence over time (Cardon et al., 2009; Gielnik et al., 2021). However, there are studies warning about the high susceptibility of positive emotions to adverse events in entrepreneurial contexts due to the lack of proper emotional regulation mechanisms (Balzano et al., 2024; Portocarrero et al., 2025).

In line with the Conservation of Resources Theory (COR), this association can be explained by means of the process of psychological resource protection. According to (Hobfoll, 1989, 2001), people seek to protect their important personal resources, and since repeated stressors cause continuous resource losses, it leads to emotional exhaustion and disengagement. Entrepreneurs' frustration from rejection of their proposals, approval delays, lack of interest from investors, or administrative complications, for instance, are indeed resource-depleting experiences in that they require emotional energy, attentional resources, and motivation. Low levels of EFT mean that faculty members will find any setbacks very taxing, thus expending their resources much faster and reducing their emotional involvement in the activities. In turn, faculty members with high EFT will be able to take these frustrations psychologically easier without expending much emotional energy, thus maintaining their energy balance (De Hoe & Janssen, 2022). This way, EFT does not serve only to tolerate negative experiences but acts as a protective factor in terms of entrepreneurs' motivational resources.

A second potential explanation originates from the emotion regulation literature. Entrepreneurship has been increasingly framed as an emotion-infused journey whereby the entrepreneur encounters multiple instances of emotional disturbances, which in turn influence cognition and behavior (Portocarrero et al., 2025). Whether enthusiasm persists or is extinguished has more to do with the extent to which the individual can cognitively appraise a disruption without catastrophizing rather than the objective severity of the disruption itself. A person who is highly tolerant of frustration will not see any momentary disruptions as signs of personal inadequacies or unalterable failures but rather view them as situational, fleeting, and improvable. Such a reframing process helps minimize negative emotions following frustration and stops the progression from disappointing to disenchanted (Gross & John, 2003; Troy et al., 2013). On a practical level, this means that while a frustrated academic entrepreneur with high EFT will see a failed patent application as a call to improve, another frustrated academic entrepreneur with low EFT may regard this experience as evidence that all attempts to commercialize the invention would be fruitless.

Furthermore, emerging research on entrepreneurship suggests that psychological abilities related to toleration play an essential role in maintaining entrepreneurial activities amid unfavorable situations. According to X. Li, Ding, Wang, and Yu (2025), tolerance for failure positively impacts entrepreneurs' capacity to recover from failures and proceed with their plans. Similarly, Nguyen, Matta, Hasnaoui, Lodorfos, and Matta (2025) report that resilience coping skills allow entrepreneurs to maintain their entrepreneurial activities amid resource limitations. Even though the current body of

knowledge does not investigate academic entrepreneurial enthusiasm, it is evident that the ability to tolerate entrepreneurial frustration without quitting is a prerequisite for continuous entrepreneurial success. The latter statement becomes particularly relevant when considering that the pace of entrepreneurial activity is much slower in academia compared to traditional enterprises, as the former entities involve a greater number of bureaucratic obstacles and delays in rewards (Ahmed & Rashid, 2025; Farrell et al., 2024). Therefore, it can be stated that professors without EFT are more susceptible to frustration-driven affective depletion.

This perspective gains more relevance within developing countries' university systems like Pakistan, where academic entrepreneurs regularly face institutional voids, lack of proper commercialization structures, poor industry connectivity, and inconsistent policy backing. In such situations, frustration becomes more of an inherent feature than an isolated experience. Hence, not only innovation, but also the ability to mentally cope with frustration is essential for an entrepreneur teacher. The determination of a lecturer to maintain enthusiasm will depend upon his/her perception of institutional hindrances either as a problem that cannot be solved or an entrepreneurial challenge (Ahmed & Rashid, 2025; Ullah & Asghar, 2024). Hence, the EFT becomes crucial as it determines whether repetitive entrepreneurial challenges would result in emotional exhaustion or renewed energy.

When all of these theoretical considerations are taken into account, it becomes clear that there emerges a causal chain: entrepreneurial frustration is an intrinsic element of academic entrepreneurship; lack of management of frustration leads to the depletion of mental energy and reduced positivity; yet those scholars who have high levels of tolerance for entrepreneurial frustration cope better with this frustration, save their motivational energy, and maintain a more positive attitude towards entrepreneurial activities. Hence, entrepreneurial frustration tolerance (EFT) can significantly enhance the likelihood that scholars will stay passionate about and committed to entrepreneurial activities despite unfavorable circumstances.

Hypothesis H5: *Entrepreneurial Frustration Tolerance has a significant positive effect on Academic Entrepreneurial Enthusiasm*.

2.6 The Mediating Role of Entrepreneurial Frustration Tolerance between Entrepreneurial Self-Identity and Academic Entrepreneurial Enthusiasm

A simple motivational theory may not suffice to understand the relationship between Entrepreneurial Self-Identity (ESI) and Academic Entrepreneurial Enthusiasm (AEE), particularly against the background of the structural limitations associated with higher education systems in developing nations. Although it has been well established through previous studies into academic entrepreneurship that identity centrality is crucial for entrepreneurial cognition, perseverance, and behavior, recent developments in knowledge suggest that identity alone fails to ensure continuous affective involvement if entrepreneurial activity is repeatedly hampered due to institutional opposition, lack of resources, and uncertainty (Pattnaik et al., 2023; K. Wang, Zhao, & Peng, 2024). This issue is especially salient in the context of developing-country academia, where entrepreneurial aspirations are frequently confronted with bureaucratic inertia, underdeveloped commercialization systems, weak university-industry linkages, and inadequate psycho-institutional support, thereby producing repeated episodes of frustration that can erode the motivational consequences of identity unless buffered by strong internal coping capacities (Frontiers in Education, 2025; (Farrell et al., 2024; Ullah & Asghar, 2024). Consequently, the present study contends that the positive influence of ESI on AEE is not merely linear but is psychologically transmitted through Entrepreneurial Frustration Tolerance (EFT), which functions as the critical self-regulatory mechanism enabling identity-based motivation to survive and remain emotionally energized under repeated entrepreneurial adversity.

This mediating proposition is theoretically grounded first in Identity Theory, which posits

that individuals are motivated to behave in ways that verify and maintain salient role identities embedded within their self-concept (P. Burke & Stets, 2009; Stets & Burke, 2000). When academics internalize the entrepreneurial role as an important dimension of who they are professionally, entrepreneurial activities such as commercialization, patenting, venture creation, consulting, and industry collaboration are no longer perceived as optional external tasks, but become identity-consistent expressions of self-verification (Farmer et al., 2011; Hoang & Gimeno, 2010). Such identity salience strengthens commitment, persistence, and psychological ownership toward entrepreneurial action because disengagement would create internal inconsistency between self-definition and enacted behavior (C. Y. Murnieks et al., 2014; Radu-Lefebvre et al., 2021). However, Identity Theory simultaneously implies that when identity-relevant actions are repeatedly blocked, the actor experience's identity strain and psychological disequilibrium, thereby threatening continuity of engagement unless compensatory adaptive resources are available (Pattnaik et al., 2023; D. Shepherd & Haynie, 2009). In academic entrepreneurship, particularly in low-resource university systems, entrepreneurial initiatives are rarely smooth; rather, they involve delayed approvals, funding rejection, weak technology transfer offices, and low societal legitimization of commercialization as authentic scholarly work (Ahmed & Rashid, 2025; Tunalioglu et al., 2024). Under such conditions, entrepreneurial identity may initiate action, yet identity alone cannot prevent repeated blocked-goal experiences from producing frustration fatigue. Therefore, a salient ESI becomes affectively productive only when the academic possesses sufficient tolerance to endure the frustrations generated during identity enactment.

This is where Entrepreneurial Frustration Tolerance (EFT) acts as the key mediating conduit. EFT is defined as one's ability to cognitively process, emotion regulation, and behavioral continuation despite the repetitive experience of entrepreneurial setbacks, frustrations, and failures (Harrington, 2005). Instead of catastrophizing, draining, or giving up due to entrepreneurial obstacles, people who have high EFT regard these experiences as surmountable, temporary, and valuable learning experiences (Ellis & Dryden, 2007; Gross, 2015; Gross & John, 2003). According to Social Cognitive Career Theory, this attitude correlates with the proposition that person-cognitive attributes do not automatically equate with continuous actions unless there are self-regulation tools to ensure the sustainability of efficacy beliefs and motivation amidst environmental hindrances (Lent, Brown, & Hackett, 2002). In this regard, ESI is the source of person-cognitive identity that drives entrepreneurial orientation, whereas EFT is the framework of self-regulated coping mechanisms that makes it possible to sustain orientation despite delayed or frustrated entrepreneurship outcomes. Hence, researchers who identify themselves strongly as entrepreneurs will view difficulties in commercialization as being role-consistent, hence increasing their tolerance for frustration with entrepreneurship gradually (Mmbaga et al., 2020; Zhang, Wang, & Zhao, 2022).

Furthermore, the role of emotion-focused coping in the mediation effect of entrepreneurial self-efficacy on entrepreneurship is reinforced by the concept of conservation of resources (COR) theory. This theoretical model suggests that ongoing participation in strenuous activities requires one to have a pool of psychological resources that can endure depletion through persistent engagements (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014; Hobfoll, 1989, 2001). As such, the act of academic entrepreneurship entails significant expenditure of cognitive efforts, emotions, time, and reputation, yet in the setting of developing country's universities, such endeavors often lack any immediate tangible benefits (Yuanyuan Chen, Liu, Sindakis, & Aggarwal, 2023); Frontiers in Psychology, 2025). In case the entrepreneur perceives each failure as an insurmountable problem, his or her pool of psychological resources deplete steadily resulting in demotivation, withdrawal, and ultimately in the loss of enthusiasm for entrepreneurial undertakings

(BMC Psychology, 2025; (Kim, Zhang, Seong, & Hong, 2025). Entrepreneurial resilience through emotion-focused coping becomes a protective factor against such psychological exhaustion because it minimizes the emotional toll of each frustrating experience by allowing entrepreneurs to cope with their frustration while not perceiving themselves as incompetent entrepreneurs (Caniëls & Motylska-Kuźma, 2023; Liu, 2025). Therefore, whereas entrepreneurial self-efficacy acts as the motivational factor for entrepreneurial activity, emotion-focused coping allows one to sustain the gained motivation and preserve it from emotional exhaustion.

The mediating power of EFT in such a situation is analytically more plausible from the perspective of affective regulation. In contrast to other definitions of entrepreneurship, academic entrepreneurial enthusiasm (AEE) does not imply merely an intention to pursue entrepreneurial activities; rather, it denotes being in a state of excited affect, passion, and emotional commitment to continue with entrepreneurial endeavors over the long term (Balzano et al., 2024; Cardon et al., 2013). AEE, therefore, entails intrinsic vulnerability as entrepreneurs' careers are marked by emotional fluctuations of hopes and frustrations, delays, rejections, and uncertainties (Cope, 2011; D. A. Shepherd, 2003). Without appropriate management of emotional experiences, frustrations lead to the exhaustion of entrepreneurs' positive emotional energy, which results in demotivation and disillusionment. Empirical research suggests that entrepreneurial passion might be not enough for sustaining actions against frustration accumulating beyond tolerance levels; too much frustration might even cause passion to turn into withdrawal intentions (Balzano et al., 2024) Hence, despite his or her strong enthusiasm fueled by professional identity at the beginning of the engagement process, the professor is not likely to sustain it in the long run without regulating negative effects that emerge because of the institutional resistance to entrepreneurial efforts. EFT serves precisely the purpose of affect regulation by preventing frustration from transforming into a chronic condition that depletes positive emotions associated with AEE (Asif Iqbal et al., 2024; Gross, 2015).

Yet another explanation comes from literature on entrepreneurial learning and metacognitive reflection. It is true that entrepreneurial failures do not necessarily reduce motivation if people have sufficient psychological ability to learn from them (Jenkins et al., 2014; Politis, 2005). For effective learning from entrepreneurial failures, it is necessary to have a certain degree of reflective distancing from the emotions associated with failure; instead, one should be capable of asking questions as to what lesson can be learned from rejections, delays, or unsuccessful collaboration with partners (Flavell, 1979; Pintrich, 2002). This kind of reflection is provided by emotional-facilitated thinking (EFT). In that, since high frustration tolerance reduces the probability of strong negative emotions, an academic entrepreneur can reflect, reframe his or her view of the problem, and make something beneficial out of this experience (Cope, 2011; De Hoe & Janssen, 2022). Similarly, Pakistani studies show that emotion regulation, resilience, recovery capacity, and self-efficacy are the key factors which help entrepreneurs learn from failures and remain motivated for further entrepreneurial initiatives (Asif Iqbal et al., 2024). Accordingly, the entrepreneurial survey index (ESI) may provide the motivational desire to persevere as entrepreneurship fits well with identity, while EFT decides whether frustrating experience results in learning or leads to psychological escape.

Entrepreneurial frustration tolerance (EFT) can be seen as a manifestation of psychological capital with respect to entrepreneurial activities, because coping with entrepreneurial frustration demands resilience so as to avoid emotional exhaustion, optimism to overcome temporary setbacks, and efficacy to continue making efforts irrespective of their delayed outcome (De Hoe & Janssen, 2022); Frontiers in Psychology, 2025). Crucially, the literature in entrepreneurial psychology emphasizes that psychological capital serves as an important protective factor against burnout and promotes positive mood states in high-demand entrepreneurial environments (BMC Psychology, 2025; The relationship between entrepreneurial

psychological capital and entrepreneurial persistence: evidence from China, 2025). Hence, rather than being an indicator of passive tolerance towards frustration, EFT should be understood as a psychological transformation process, through which each frustrating entrepreneurial experience can be turned from an energy-draining event into a skill-enhancing mastery event. As a result, entrepreneurial researchers with a strong combination of high entrepreneurial self-efficacy (ESI) and high EFT will develop increasing psychological readiness to maintain entrepreneurial enthusiasm in the wake of each encountered difficulty (Bullough et al., 2014; Luthans, 2002).

This mediating process assumes even greater significance in the context of Pakistan and comparable developing-country university ecosystems. Recent evidence from Pakistani higher education demonstrates that entrepreneurial activity among faculty is strongly associated with lack of access to funding, low institutional encouragement, workforce skill deficiencies, administrative delays, and significant mental strain, including frustration and burnout (Frontiers in Education, 2025). Similar findings from emerging-market academic entrepreneurship indicate that institutional voids substantially intensify the emotional burden of commercialization efforts and make personal psychological coping resources more decisive than in mature entrepreneurial ecosystems (Ahmad & Bashir, 2023; Ying Chen, Klyver, & Zhang, 2024). In such environments, ESI may indeed stimulate academics to perceive themselves as entrepreneurial actors, yet the harsh entrepreneurial terrain repeatedly tests whether such self-perception can remain affectively alive. It is precisely under these conditions that EFT becomes the psychological black box connecting entrepreneurial identity to entrepreneurial enthusiasm. Academics do not remain enthusiastic merely because they think entrepreneurially; they remain enthusiastic because they can tolerate the frustrations that entrepreneurial thinking inevitably produces in a hostile institutional environment (McSweeney, McSweeney, Allison, & Webb, 2025; Nething, 2025).

Taken together, the foregoing theoretical and empirical arguments establish a coherent mediation mechanism. Entrepreneurial Self-Identity furnishes the motivational self-definition that predisposes academics toward entrepreneurial engagement; however, the enactment of this identity repeatedly generates frustration in institutionally constrained academic systems. Entrepreneurial Frustration Tolerance (EFT) identifies whether frustration drains or preserves the psychological energy of academics. If EFT is high, then academics will be able to cognitively cope with difficulties, manage emotions, preserve psychological energy, learn from their entrepreneurial experiences, and keep the passion for entrepreneurship alive. In doing so, the drive associated with Entrepreneurial Self-Identity (ESI) is translated into enduring Academic Entrepreneurial Enthusiasm (AEE). On the other hand, when EFT is not sufficiently developed, motivation driven by entrepreneurial self-identity will get continuously drained due to ongoing frustrations, and entrepreneurs will feel entrepreneurial enthusiasm temporarily. Therefore, EFT stands out as the most reasonable psychological mediating variable for transforming entrepreneurial self-identity into entrepreneurial enthusiasm. This leads to the formulation of the following hypothesis:

Hypothesis H6: *Entrepreneurial Frustration Tolerance mediates the relationship between Entrepreneurial Self-Identity and Academic Entrepreneurial Enthusiasm.*

2.7 The Mediating Role of Entrepreneurial Frustration Tolerance in the Relationship between Learning from Failure and Academic Entrepreneurial Enthusiasm

The problem of explanation in entrepreneurship studies among academics is no longer whether scholars learn from failure, but rather the hidden psychological mechanisms behind transforming learning from failure into a lasting entrepreneurial urge. While the concept of Learning from Failure (LFF) has become known as an important experiential process, enabling a person to adjust

their perceptions and expectations, and improve future entrepreneurial reactions, current academic literature tends to demonstrate that LFF does not have affective effects per se (Cope, 2011; McSweeney et al., 2025). Hence, learning from failures in terms of business venture development might enrich an academic's cognitive experience, although cognitions by themselves do not guarantee the maintenance of enthusiasm in the face of institutional adversity experienced repeatedly. In developing countries, for instance, the process of incubation of ventures by academics is typically hindered due to bureaucracy, poor technological transfer services, inconsistent funding, and contradictory policies on innovation, thus resulting in academics experiencing frequent frustration. The problem for academic entrepreneurship research is not whether academics learn from failure but how lessons learned from failure transform psychologically into the desire to stay engaged in entrepreneurship. It is argued here that learning from failure in developing countries is psychologically processed through Entrepreneurial Frustration Tolerance (EFT), the key mediating psychological channel through which learning and academic entrepreneurial enthusiasm are connected.

The rationale behind the mediation process hinges on the idea that failure learning occurs primarily at a cognitive level, whereas entrepreneurial passion stems from an affective standpoint. Hence, a mediating self-regulation tool becomes essential to integrate both qualitatively divergent aspects. The research literature on experiential learning shows that entrepreneurial failures contribute significantly to providing valuable information about poor strategy, stakeholder disconnection, overly optimistic projections, and execution problems (Cope, 2011; K. Wang et al., 2024). With the help of reflective thinking, individuals learn to replace their primitive notions of entrepreneurship with more practical perceptions about commercial activities, enabling them to develop effective adaptation strategies in future ventures (Ahmed & Rashid, 2025; McSweeney et al., 2025). Nevertheless, the process of integrating cognitive maturity into affective terms is anything but straightforward. According to the literature available, the academic pursuit of entrepreneurship entails a significant psychological burden because each business venture, including patent applications, industry partnerships, licensing deals, and spin-offs, involves bureaucratic complications and legitimacy hurdles (Khan et al., 2024; Tunalioglu et al., 2024). Thus, even though LFF allows scholars to acquire greater insights into actions needed to be taken differently, it fails to protect them from the psychological distress brought about by systemic obstacles.

At this very moment, the concept of Entrepreneurial Frustration Tolerance (EFT) has become theoretically critical. EFT represents the ability that the scholar acquires in terms of being able to put up with entrepreneurial frustration, delayed results, administrative barriers, and repeated goal blockades without experiencing significant motivational disintegration and affective withdrawal (Trevelyan, 2011). Current findings show that frustration tolerance is not an inherent quality of the personality but a skill that can be learned and improved due to negative entrepreneurial experiences if they are cognitively interpreted as informative instead of harmful (Kim et al., 2025). In other words, scholars who learn from mistakes are not only gaining practical knowledge; they are also increasing the level of their frustration tolerance threshold regarding future frustrations. Through explaining what has led to the failure of certain commercialization initiatives, innovations or collaboration projects, researchers will be less susceptible to the psychological shock when such obstacles appear again since the unexpected is becoming predictable (Hayter et al., 2022; Radu-Lefebvre et al., 2021). In this regard, Longitudinal Frustration Fitness (LFF) will help to increase EFT through normalizing failure by making it expected within the framework of the entrepreneurial journey.

The dynamics are especially characteristic of the academic settings of developing countries, where the entrepreneurship process is subject to constant, rather than episodic, interference due to institutional resistance. In this ecosystem,

researchers are regularly faced with permanent non-market impediments, such as administrative rigidity, inadequate development of technology transfer centers, lack of legal guarantees, and scarcity of sources of innovation financing. All these factors systematically frustrate the development of any innovation regardless of its inherent value (Ying Chen et al., 2024; Tunalioglu et al., 2024). In such an environment, a researcher who learns how to cope with setbacks on the informational level may yet suffer from affective exhaustion because of insufficient emotional resilience to withstand continuous institutional disappointment. Conversely, a researcher who increases his/her frustration tolerance through successive learning experiences becomes increasingly immune to "administrative affective erosion," which is described as the gradual dissipation of enthusiasm for innovation due to constant exposure to bureaucratic challenges (Ahmed & Rashid, 2025). Hence, EFT functions as a buffer that shields LFF-induced cognitive benefits from the negative effects of affective exhaustion caused by the environment.

The second stage of the mediation chain considers how frustration tolerance can support Academic Entrepreneurial Enthusiasm (AEE). In other words, academic entrepreneurial enthusiasm refers to an excited energetic state characterized by intellectual arousal, interest in business matters, and motivation toward turning science into social and economic success (Wang et al., 2024; Xu & Zhang, 2026). Such excitement tends to be prone to frustration as academia-related entrepreneurship unfolds over long periods of time with uncertain financial gains and losses. If every unsuccessful project, unobtainable approval, and failed attempts to commercialize the findings can be viewed as another defeat in scholars' career, their entrepreneurial effect can turn from enthusiasm into skepticism and apathy (Balzano et al., 2024; Cardon & Kirk, 2015). However, Episodic Frustration Tolerance (EFT) helps scholars cope with frustration by viewing obstacles as normal inconveniences rather than a threat to the researchers' capabilities or legitimacy. The ability to tolerate frustration allows academics to view entrepreneurial barriers as mere process issues and not a challenge to their capacity and legitimacy, which prevents their emotional attachment to the venture-related tasks (Tantawy et al., 2026).

In other words, the mediating mechanism suggests that the influence of the legitimate entrepreneurial fervor (LFF) depends only on the extent to which the learning process had previously increased the tolerance of the academic for future entrepreneurial frustrations. While the academic with prior experience in the unsuccessful licensing process may develop a greater awareness of strategic issues, it may happen that unless that experience simultaneously improves his ability to tolerate yet another wave of bureaucratic sluggishness, that awareness would be psychologically useless. The same could be said about the reflection on the disintegration of the industrial partnership, which might make the academic better aware of the market situation, although it could also cause him to lose the entrepreneurial fervor because the psychological cost of being involved in another inefficient bureaucratic process is simply too high. Thus, the process of transmitting learning into enthusiasm is not driven by learning itself, but rather by the ability to cope with frustration through learning (Lent et al., 2002; McSweeney et al., 2025).

Current research on academic entrepreneurship increasingly favors such cognitive-affective sequencing. Scholars maintain that academic entrepreneurs stay engaged in their activities not only because they possess strong skills in recognizing business opportunities but also due to their ability to regulate emotions with resilience so that they can persevere in face of uncertainties associated with their commercialization (Balzano et al., 2024; Kim et al., 2025). In entrepreneurial situations taking place in developing countries, it was found that the capability to cope with the lack of institutional structures and repeated failures is a significant factor determining whether previous failure experiences result in entrepreneurial persistence or exit from entrepreneurial endeavors (Ahmed & Rashid, 2025; Tantawy et al., 2026). Taken together, these findings imply that the relationship between learning from failure and

entrepreneurial excitement is unlikely to be straightforward and automatic.

Entrepreneurial frustration tolerance is proposed as the missing link between Learning from Failure and Academic Entrepreneurial Enthusiasm. Although Learning from Failure is important for providing understanding to academics, entrepreneurial frustration tolerance is important for providing emotional resilience. Only if these two activities happen one after another will entrepreneurial enthusiasm last; otherwise, it will be sporadic. Thus, learning from past failures is expected to lead to lasting entrepreneurial enthusiasm mainly because it improves one's ability to cope with future frustrations.

Hypothesis H7: *Entrepreneurial Frustration Tolerance mediates the positive relationship between Learning from Failure and Academic Entrepreneurial Enthusiasm.*

3. Conceptual Framework of the Study

3.1 Preamble to the Conceptual Framework

The rising expectation that universities serve not only as centers for knowledge creation but also as agents of socio-economic change has significantly increased the importance of academic entrepreneurship within recent debates on higher education (Guerrero & Urbano, 2012; Perkmann et al., 2021; Perkmann et al., 2013). This is particularly true in developing nations, where universities must convert their scientific research output into innovations for commercial use to overcome their underdeveloped industrial research and development (R&D) environments and poor absorptive capacity within the business community (Bruton, Ahlstrom, & Li, 2023; Estrin, Korosteleva, & Mickiewicz, 2013; Farrell et al., 2024). However, while the entrepreneurial university model enjoys wide support within institutions of higher learning, one key scholarly enigma has not been fully unraveled: how come some academics feel affectively attached to entrepreneurial activities while others remain detached despite having similar entrepreneurial orientations and access to commercialization possibilities (Hayter et al., 2022; Hayter et al., 2018; Jiang, Yin, Liu, & Johnson, 2023)?

This unaccounted difference implies that there must be some psychological transmission mechanism—a "black box" linking personal entrepreneurial propensities and entrepreneurial affect in the long run. Previous academic entrepreneurship research has concentrated on the role of various cognitive determinants of entrepreneurial behavior, such as entrepreneurial intentions, entrepreneurial self-efficacy, motivations for commercialization, and university support (Guo et al., 2019; Lam, 2011; Mingzhe Wang & Zhang, 2023). At the same time, considerably less focus has been dedicated to emotional-regulatory capabilities responsible for the maintenance of antecedents when facing the challenges of entrepreneurial activities, such as failures in securing funding, delays caused by bureaucracy, unsuccessful patent applications, and institutional resistance, all of which appear regularly in university environments of developing countries (Ahmad & Bashir, 2023; Y. Chen et al., 2023; Mars & Rios-Aguilar, 2010). Therefore, the current paper will argue that there is no one-to-one relationship between entrepreneurial capabilities and academic entrepreneurship enthusiasm.

In line with this, this work seeks to explore further the hypothesis that entrepreneurial translation is significantly facilitated by Entrepreneurial Frustration Tolerance (EFT), which refers to an entrepreneur's ability to endure entrepreneurial frustrations through absorbing and processing such frustrations cognitively and behaviorally without leading to motivational breakdown (Carver & Scheier, 2001; Harrington, 2005; Zhang et al., 2022). Within this context, ESI and LFF are argued to be distal individual-level antecedents while EFT represents the proximal self-regulatory channel in the transformation of these antecedents into AEE. It is worth noting that the mediational model is especially relevant in a country like Pakistan, where the academic entrepreneurship process rarely flows smoothly with frustrations being experienced daily (Balzano et al., 2024; Munir et al., 2024; Tantawy et al., 2026).

Therefore, the framework is built upon the assumption that the difference between persistent entrepreneurs and psychologically disengaged

individuals does not stem from their natural qualities or experiences alone but rather hinges on their ability to cope with frustration and use entrepreneurial thinking to generate entrepreneurial enthusiasm.

3.2 Theoretical Foundation and Conceptual Logic of the Framework

In this regard, the suggested framework combines elements of SCCT, Identity Theory, and learning approaches to explain how personal qualities turn into academic entrepreneurial enthusiasm in the context of universities in developing countries. According to the theoretical assumptions of SCCT, entrepreneurial accomplishments should be achieved not on account of personal traits but through the regulation of emotions, motivation maintenance, and ability to cope with situational pressures (Brown & Lent, 2023; Lent et al., 2002). Similarly to this idea, ESI provides stable motivational basis due to the integration of entrepreneurial actions into the core of identity, thus ensuring the willingness and determination to pursue an entrepreneurial agenda in face of the possible challenges associated with this role (P. Burke & Stets, 2009; Radu-Lefebvre et al., 2021; Stryker & Burke, 2000; Miao Wang et al., 2022). At the same time, learning from failure contributes to the ability of academics to use their negative experience for the improvement of coping strategies and building adaptive skills, which will help them cope with further difficulties (Cope, 2011; Lattacher & Wdowiak, 2020; McSweeney et al., 2025; Politis, 2005). Nevertheless, in the case of developing-country academic settings characterized by inefficient institutions, shortage of resources, uncertainty in commercialization, and bureaucracy, the combination of learning and identity is not sufficient to sustain entrepreneurial endeavors (Bruton et al., 2023; L. Chen, Xiaohu, Mengze, & De'en, 2023; Estrin et al., 2013). This leads to the recognition of EFT as the main psychological construct through which the process of translating commitment based on identification and learning lessons from failure transforms into entrepreneurial enthusiasm. In other words, tolerance for frustration helps scholars cope with adverse conditions, control their emotions, and stay committed to their goals (Obschonka et al., 2019; Shi et al., 2021). As a result, EFT is used to convert entrepreneurial identity and learning from failure into enthusiasm, expectancies, and vigorous entrepreneurial commitment. Based on the above discussion, the model considers Academic Entrepreneurial Enthusiasm as the main affective outcome of the suggested sequential process.

3.3 Integrated Schematic Representation of the Framework

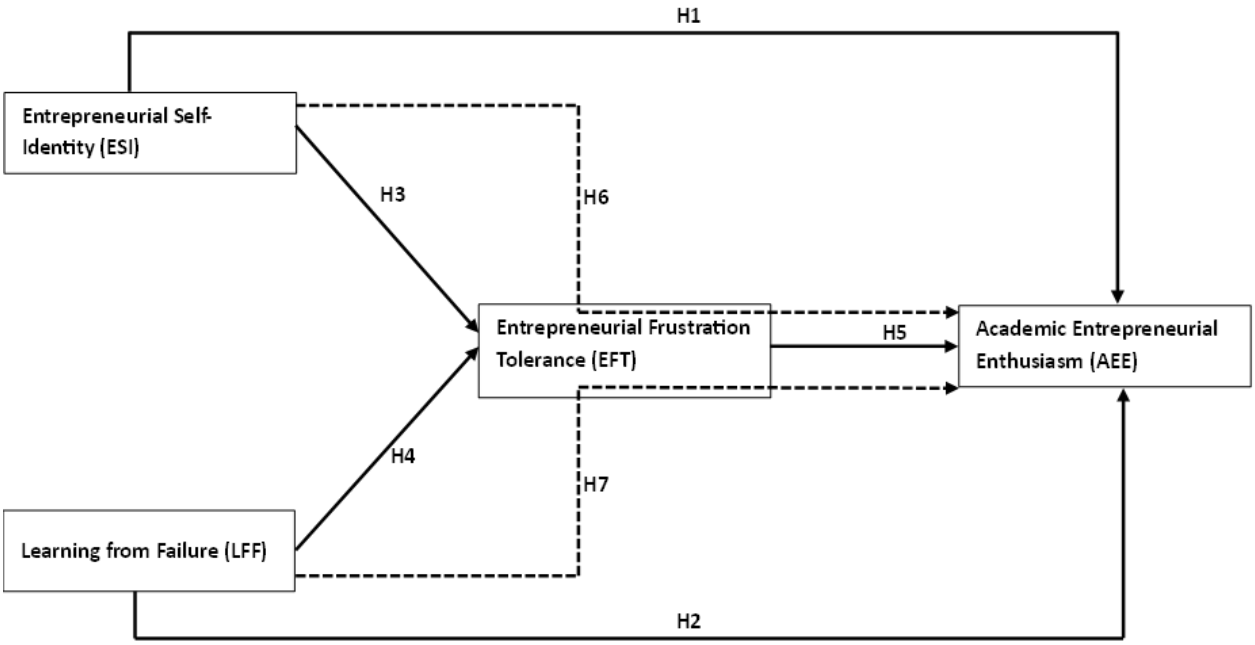

Figure 3.1 Research Model

3.4 Scholarly Significance of the Framework

The framework can make three contributions to theory in this regard. Firstly, it shifts research on academic entrepreneurship from an analysis based on static intentions to the concept of psychological endurance as a dynamic phenomenon that explains how the entrepreneurial spirit of scholars remains resilient or breaks down due to institutional pressure (Perkmann et al., 2021; Zhang et al., 2022). Secondly, the concept of Entrepreneurial Frustration Tolerance represents a novel type of self-regulation, thus enriching the literature on entrepreneurial resilience, entrepreneurial passion, and commercialization persistence (Tantawy et al., 2026; Trevelyan, 2011). Thirdly, by placing the framework in the context of university ecosystems in developing countries, it directly responds to the need for context-dependent entrepreneurship research (Ahmed & Rashid, 2025; Bruton et al., 2023; Ying Chen et al., 2024).

To conclude, the framework suggests that the key factor behind academic entrepreneurship is not the possession of entrepreneurial qualities by the scholars but rather whether they have the psychological equipment to endure frustration and develop such qualities that would eventually result in their enthusiasm for the endeavor.

4. Research Methodology

In this study, a quantitative, explanatory, cross-sectional survey design is adopted to explore the relationship between ESI, LFF, EFT, and AEE among the faculty members working in the public-sector universities of Punjab, Pakistan. A quantitative method can be used for systematic investigation into the correlation between various psychological and entrepreneurial measures through objective measurement and statistical analysis (Bougie & Sekaran, 2025; Frankfort-Nachmias & Nachmias, 2007; Sekaran, 2016). As per the previous literature on academic entrepreneurship and entrepreneurial cognition, this design allows us to make accurate estimates about behavioral relationships while ensuring a higher level of generalizability of results (Doanh, Bernat, Hieu, Ngoc, & Linh, 2021; J. Li & Wang, 2022; Miao Wang, Cai, & Munir, 2021). The population of interest includes all full-time faculty members who teach in five entrepreneurship-related subjects: Sciences, Agriculture, Engineering, Commerce and Management

Sciences, and Computer Science because these individuals are more involved in innovation and commercialization practices as well as university-industry collaboration (J. Li & Wang, 2022; Pattnaik et al., 2023). A list of such faculty members across the public-sector universities of Punjab was prepared using the information available at the HEC, university registrars, and departments, totaling 9,860 faculty members.

A proportional stratified random sampling technique was adopted to improve the representation of all universities and disciplinary strata to boost the generalizability of results (Agbonifoh & Yomere, 1999; Bougie & Sekaran, 2025). Following the recommendation of Krejcie and Morgan (1970), the required sample size for a population of this kind is 380 respondents when a confidence level of 95% and a margin of error of 5% are considered. The primary data collection method involved administering a multimodal questionnaire in both print and electronic forms to increase the response rate (Babbie, 2020; Sekaran, 2016). All items were measured on a seven-point Likert scale that ranges from 'strongly disagree' (1) to 'strongly agree' (7). To measure Academic Entrepreneurial Enthusiasm, scales developed by J. Li and Wang (2022) and Pattnaik et al. (2023) were adopted; Learning from Failure was measured via an instrument developed by Shirshitskaia, Zhou, and Zhang (2021); Entrepreneurial Frustration Tolerance was measured using a scale designed by J. Li and Wang (2022); and Entrepreneurial Self-Identity was captured using a valid instrument developed by (Pattnaik et al., 2023).

A measurement table of the variables will follow this section.

Table No. 4.1
Scale Items (Number of Items Developed for Variables)

Sr. No.	Variables	Items	Source	HEC category	Scopus	Web of science	Journal Name	Impact factor
1.	Academic Entrepreneurial Enthusiasm (AEE)	5	(J. Li & Wang, 2022; Pattnaik et al., 2023)	W	Yes	Yes	The Journal of Technology Transfer	6.3
2.	Learning from failure (LF)	7	(Shirshitskaia et al., 2021)	Y	Yes	Yes	Quality & Quantity	1.5
3.	Entrepreneurial frustration tolerance (EFT)	4	(J. Li & Wang, 2022)	W	Yes	Yes	The Journal of Technology Transfer	6.3
4.	Entrepreneurial Self-Identity (ESI)	7	(Pattnaik et al., 2023)	W	Yes	Yes	The Journal of Technology Transfer	6.3
	Total	**23**						

5 Data Analysis Tool

For the empirical testing, PLS-SEM will be used with the help of software called SmartPLS.

5.1 Data Analysis & Results

The current section conducts the empirical examination of the proposed model, investigating how individual-level characteristics of entrepreneurship affect AEE through the mediating role of EFT. To obtain the required data, a sampling frame of all full-time faculty working in public-sector universities located in Punjab before 2016 was adopted. As far as methodological considerations are concerned,

there was no point in collecting data from newly created universities because at least ten years of their operation were considered sufficient to develop any entrepreneurial culture, including incubators and discussions on commercialization of research as well as exposure to entrepreneurial activity among faculty members. Two ways of surveying participants were chosen to increase the response rate. First, more than 500 paper-based surveys were personally distributed among faculties of selected organizations. Second, a total of over 2,000 emails containing personalized invitations to fill out the survey using Google Forms were sent to all potential respondents. To encourage the latter to participate in the study, the respondents received follow-up calls and messages via WhatsApp. This resulted in 547 questionnaires being returned. However, some questionnaires had to be disregarded since their content appeared irrelevant to the study or due to incomplete answers provided by their authors. In total, 47 papers needed to be filtered out. Thus, 500 respondents completed the survey, which is sufficient for PLS-SEM estimation.

5.2 Demographic Profile of Respondents

The demographic profiling process assumes great significance in the entrepreneurship research that utilizes surveys, since it ensures that the sample is representative of its population and provides the necessary context for ensuring that the respondents are experienced enough and have sufficient knowledge about institutions to evaluate the entrepreneurship phenomenon effectively. The reason is that the orientation toward entrepreneurship among academics may be affected by elements such as disciplinary identity, professional maturity, qualifications, and institutional standing.

Table 5.1
Demographic Characteristics of Respondents (N = 500)

Demographic Variable	Category	Frequency	Percentage
Department	Agriculture	98	19.6
	Business	90	18.0
	Computer Science	80	16.0
	Engineering	110	22.0
	Natural Science	122	24.4
Age	25–35	173	34.6
	36–45	251	50.2
	46–55	73	14.6
	56–65	3	0.6
Gender	Male	283	56.6
	Female	217	43.4
Qualification	M.Phil.	155	31.0
	PhD	299	59.8
	Post Doc	46	9.2
Designation	Lecturer	202	40.4
	Assistant Professor	208	41.6
	Associate Professor	73	14.6
	Professor	17	3.4
Experience	Less than 5 years	126	25.2

Demographic Variable	Category	Frequency	Percentage
	5–15 years	245	49.0
	16–25 years	90	18.0
	26–35 years	28	5.6
	Above 35 years	11	2.2

The distribution of the demographic data provides evidence for the well-balanced research design in terms of the respondent selection process. Participation among the faculty in each of the five entrepreneurship-related fields is relatively equally distributed, as the Natural Sciences and Engineering constitute the most significant proportions (24.4%, 22.0%, respectively). These percentages reflect an emphasis on the technical nature of the study. Many respondents belong to the 36-45 years age group (50.2%), which can be considered a professional age group associated with the successful implementation of academic ambitions. Furthermore, nearly 60% of the total sample possesses doctoral degree qualifications, and more than half of the sample is comprised of assistant or associate professors. Thus, this sample can be defined as academically well-established and not peripherally involved in teaching activities.

5.3 Measurement Model Assessment

Measurement model assessment was conducted prior to the evaluation of the structural associations. The measurement model phase is guided by the PLS-SEM approach and establishes whether the observable variables are valid representations of the theoretical constructs through the investigation of internal reliability, convergent validity, and discriminant validity (Hair et al., 2022; Henseler, Ringle, & Sarstedt, 2015).

5.4 Construct Reliability and Convergent Validity

The reliability of a construct depends on how consistently the scale items represent the latent variable that is being studied. Convergent validity pertains to the degree to which the measures of one construct have many common variables. The guidelines for research methodologies suggest that ideal thresholds would be a factor loading of more than 0.70, an alpha of more than 0.70, and AVE values greater than 0.50 (Fornell & Larcker, 1981; Hair et al., 2021; Sarstedt, Ringle, & Hair, 2021).

Table 5.2
Construct Reliability and Convergent Validity

Variable	Code	Items	Loading	Cronbach Alpha	Composite reliability (rho_c)	AVE
Academic Entrepreneurial Enthusiasm (AEE)	AEE1	Would you consider yourself enthusiastic about the idea of academic entrepreneurship	0.860	0.897	0.924	0.709
	AEE2	I enjoy exploring new opportunities and advancements in academic entrepreneurship.	0.846			
	AEE3	I am eager to acquire new skills and participate actively in entrepreneurial activities.	0.859			
	AEE4	I feel passionate about contributing to academic entrepreneurship and innovation.	0.842			
	AEE5	I am outgoing and enjoy interacting with others to foster entrepreneurial initiatives.	0.803			
Entrepreneurial Frustration Tolerance (EFT)	EFT1	I am resilient and bounce back quickly from setbacks.	0.749	0.838	0.892	0.674
	EFT2	Failures do not discourage me from pursuing my goals.	0.846			
	EFT3	I enjoy taking on new challenges and tasks.	0.839			
	EFT4	I am good at finding ways to motivate myself when things get tough.	0.846			
Entrepreneurial Self-Identity (ESI)	ESI1	Overall, being an academic entrepreneur has very little to do with how I feel about myself	0.727	0.869	0.898	0.559
	ESI2	In general, being an academic entrepreneur is an important part of my self-image	0.787			
	ESI3	My destiny is tied to the destiny of other academic entrepreneurs	0.709			
	ESI4	Being an academic entrepreneur is unimportant to my sense of what kind of person I am	0.635			
	ESI5	I have a strong sense of belonging to the academic entrepreneurship community	0.809			
	ESI6	I have a strong attachment to other academic entrepreneurs	0.795			

Variable	Code	Items	Loading	Cronbach Alpha	Composite reliability (rho_c)	AVE
Learning from Failure (LFF)	ESI7	Being an academic entrepreneur is an important reflection of who I am	0.758	0.903	0.923	0.632
	LFF1	There is a clearer understanding of the benefits of engaging in academic entrepreneurial activities within the university.	0.800			
	LFF2	There is a clearer understanding of the challenges associated with academic entrepreneurial activities within the university.	0.841			
	LFF3	There is a clearer understanding of the future development and direction of academic entrepreneurial ventures within the university.	0.802			
	LFF4	When there is a lack of resources to pursue entrepreneurial activities, academic staff will immediately propose solutions and inform the university administration.	0.768			
	LFF5	Academic staff will learn from the mistakes of other academic entrepreneurs within the university.	0.814			
	LFF6	Academic staff will learn to stop and reflect on their entrepreneurial processes and outcomes.	0.772			
	LFF7	The university encourages academic staff to ask questions such as 'Is there a better way to develop and implement entrepreneurial ventures?	0.763			

The results show the adequacy of the measurement model clearly. The item loadings in all constructs have been found to be either of an acceptable range or in a very strong range. Thus, it can be concluded that each individual indicator has made significant contributions towards its respective construct. Cronbach's alphas range between 0.838 and 0.903, whereas composite reliability has been found in the range of 0.892 and 0.924. Both are way above the acceptable level. Moreover, all values for AVEs exceeded 0.50, thus proving that each construct can explain more than half of the variance of its indicators.

5.5 Discriminant Validity

Discriminant validity measures whether different constructs are empirically non-redundant even though they are theoretically unrelated. In PLS-SEM research, this is usually done through HTMT and Fornell-Larcker criteria. An HTMT value of

less than 0.85 or 0.90 confirms good discriminant validity. The square root of AVE for each construct must be larger than the correlation with other constructs in the model according to the Fornell-Larcker criterion (Fornell & Larcker, 1981; Henseler, Ringle, & Sarstedt, 2015; Henseler, Ringle, & Sinkovics, 2009).

5.5.1 HTMT Ratios

Table 5.3

HTMT Ratios

	AEE	EFT	ESI	LFF
AEE				
EFT	0.728			
ESI	0.563	0.626		
LFF	0.594	0.587	0.681	

All HTMT values are greater than none of the conservative cutoff point of 0.85, suggesting that none of the latent variables suffer from conceptual redundancy. This result is methodologically relevant since although these four variables have theoretical linkages in the entrepreneurial cognition process, they are empirically distinct and can be analyzed concurrently using structural equation modeling.

5.5.2 Fornell–Larcker Criterion

Table 5.4

Fornell–Larcker Criterion

	AEE	EFT	ESI	LFF
AEE	0.842			
EFT	0.633	0.821		
ESI	0.514	0.543	0.748	
LFF	0.546	0.515	0.598	0.795

Diagonal entries, which represent the square roots of AVE, always surpass the off-diagonal correlation entries. It again reinforces the fact that every construct explains the variance of itself better than it does with any other constructs. Thus, discriminant validity is empirically proven.

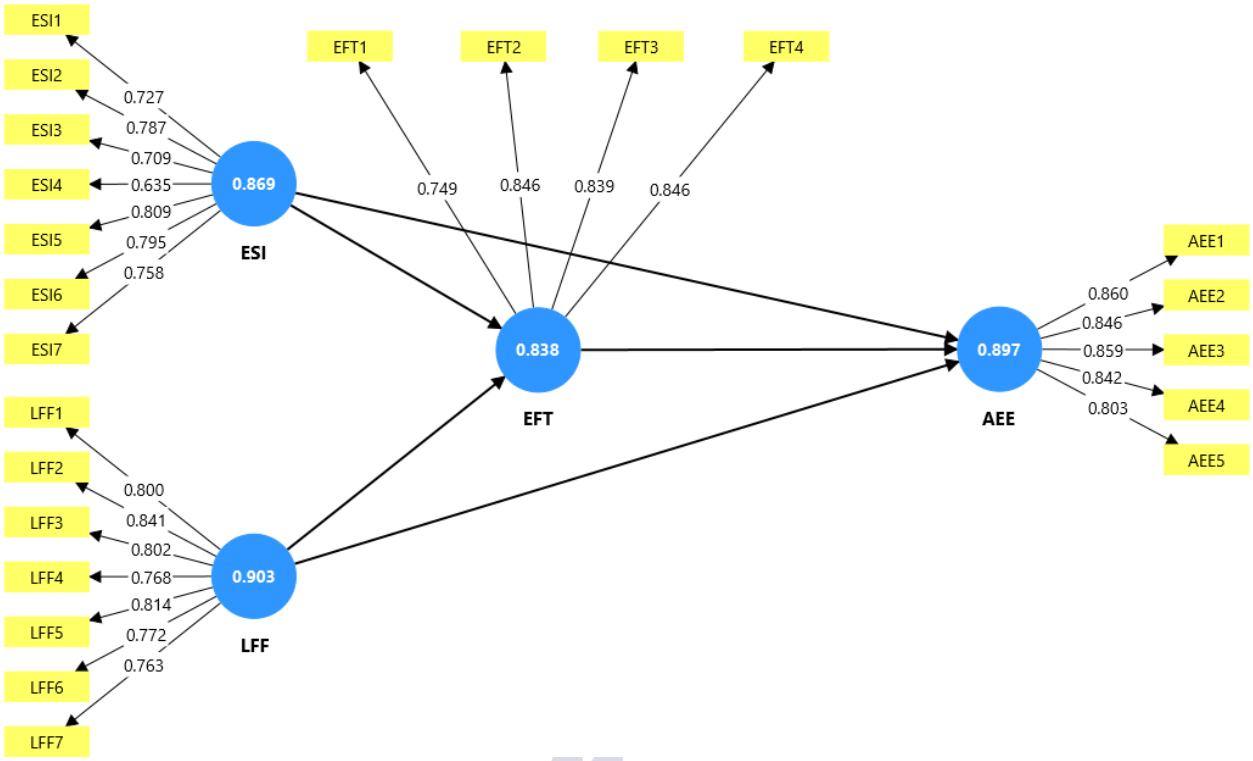

Figure 5.1 Outer loadings and Cronbach's Alpha

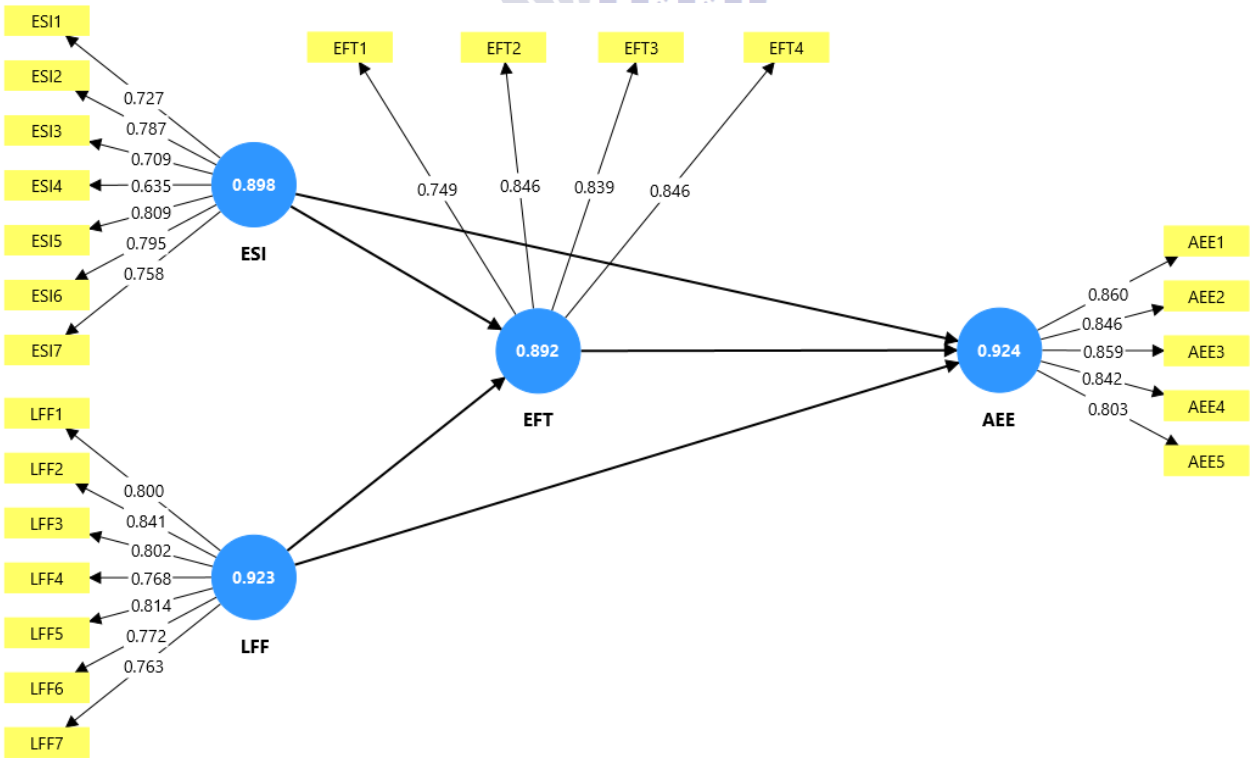

Figure 5.2 Outer loadings and Composite reliability (rhoc)

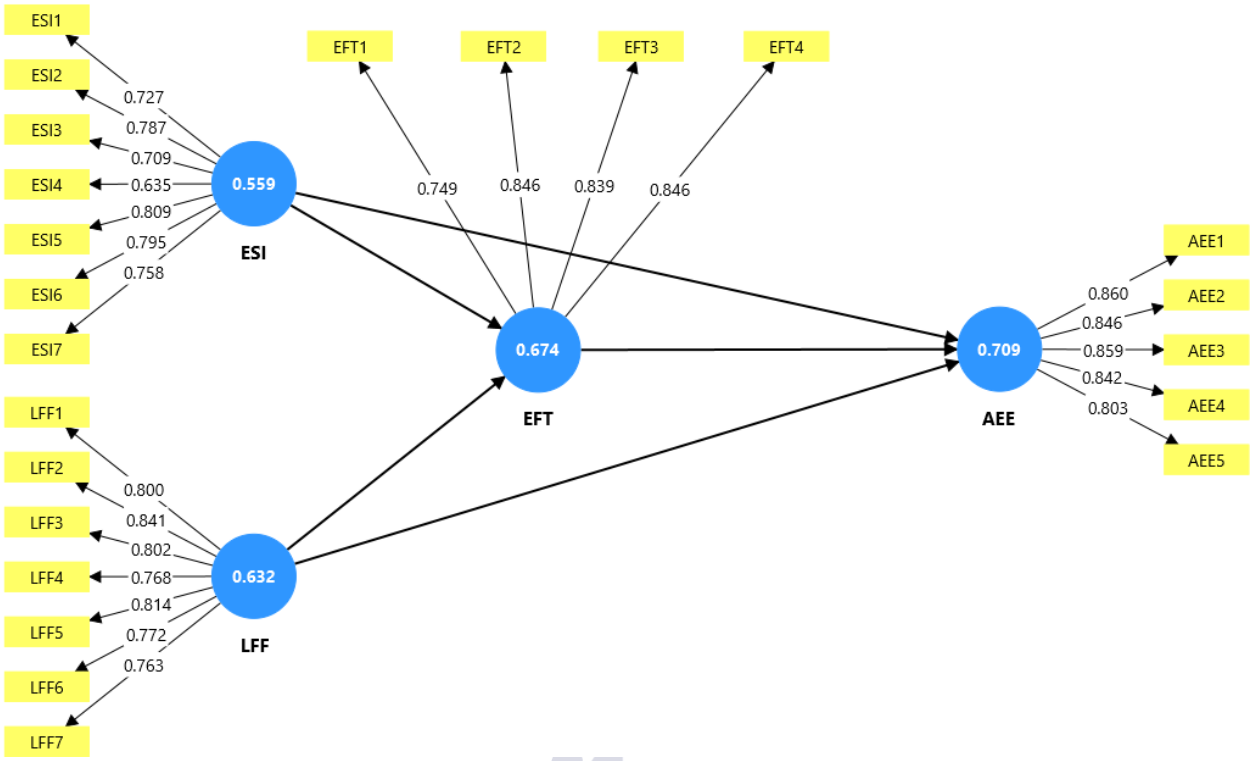

Figure 5.3 Outer loadings and Average Variance extracted (AVE)

5.6 Model Fit

Whereas PLS-SEM has a primary concern about prediction, measures of model fit give additional information regarding how well the model fits the data. According to (Hair et al., 2021; Sarstedt et al., 2021), an SRMR less than 0.08 shows that the residuals fit well, while an NFI of at least 0.80 demonstrates good comparative fit.

Table 5.5
Model Fit Indices

	Saturated model	Estimated model
SRMR	0.061	0.061
d_ULS	1.017	1.017
d_G	0.304	0.304
Chi-square	930.739	930.739
NFI	0.863	0.863

The figure for SRMR is still under the permissible limit of 0.061, which implies that there is a minimal difference between the actual and theoretical correlation values. On the other hand, the score for NFI is 0.863, which means that the model fits well when compared to others.

5.7 Structural Model Results

Once the adequacy of measurements had been established, the suggested causal chains were analyzed using bootstrapped structural equation modeling. At this point, the strength, direction, and significance of direct and indirect relationships between the constructs were examined.

5.7.1 Direct Effects

A one-sided test of significance was adopted due to the theoretical nature of the hypotheses, which indicates an expected direction beforehand. For a one-sided test, t-statistics greater than 1.645 and p-statistics less than 0.05 signify statistical significance at the 95% confidence interval (Hair et al., 2021; Sarstedt et al., 2021).

Table 5.6
Direct Effects

		Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decision
H1	ESI -> AEE	0.058	0.059	0.055	1.067	0.286	Not Accepted
H2	LFF -> AEE	0.242	0.241	0.058	4.175	0.000	Accepted
H3	ESI -> EFT	0.366	0.368	0.061	5.966	0.000	Accepted
H4	LFF -> EFT	0.296	0.295	0.061	4.821	0.000	Accepted
H5	EFT -> AEE	0.436	0.438	0.055	7.961	0.000	Accepted

Three statistically and analytically interesting points emerge from the direct effects analysis. Firstly, Entrepreneurial Frustration Tolerance is found to have the highest effect on Academic Entrepreneurial Enthusiasm (β = 0.436). This finding reveals that faculty members with high psychological frustration tolerance capabilities in entrepreneurship will exhibit significantly higher levels of enthusiasm towards academic entrepreneurship. Secondly, Learning from Failure directly contributes positively to both AEE and EFT, meaning that the process of reflection upon negative experiences contributes positively both to optimism and tolerance to entrepreneurial frustrations. Lastly, Entrepreneurial Self-Identity positively affects Entrepreneurial Frustration Tolerance but is not found to be a significant predictor of AEE.

5.7.2 Mediation Analysis

An indirect effects test was conducted to determine if the psychological mediator is involved when converting individual entrepreneurial traits into academic entrepreneurial excitement. The indirect effects were tested using bootstrapping on specific indirect paths.

Table 5.7
Specific Indirect Effects

		Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Mediation Type
H6	ESI -> EFT -> AEE	0.160	0.162	0.035	4.506	0.000	Full Mediation
H7	LFF -> EFT -> AEE	0.129	0.130	0.033	3.910	0.000	Partial Mediation

Mediation analyses provide the greatest theoretical contribution to this research. Entrepreneurial Self-Identity influences AEE via EFT completely, thus reflecting complete mediation. In other words, self-identification with entrepreneurial aspects does not automatically stimulate enthusiasm, but

only when one can deal with entrepreneurial frustration. On the contrary, Learning from Failure affects the enthusiasm directly and indirectly, thus revealing partial mediation. As a result, the process of learning from failures independently stimulates the entrepreneur's enthusiasm, although the effect increases significantly if learning allows an individual to overcome frustrations. Overall, these findings theoretically prove the black-box concept.

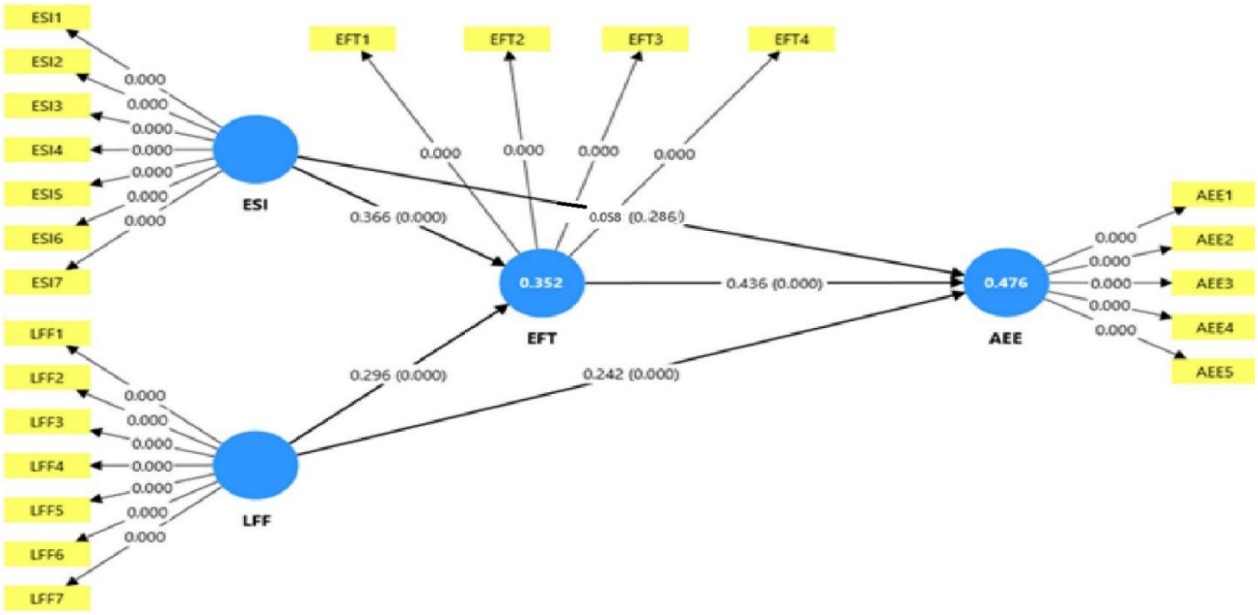

Figure 5.4 Path Coefficients and P values, p values, and R square

5.8 Model Explanatory Power

R-squared coefficient represents the amount of variance for each endogenous variable that is accounted for by its explanatory variables. Generally, an R^2 value of 0.25, 0.50, and 0.75 is considered to represent weak, moderate, and high explanatory strength, respectively (Hair et al., 2021; Sarstedt et al., 2021).

Table 5.8
R-square Values

	R-square	R-square adjusted	Interpretation
AEE	0.476	0.473	Moderate
EFT	0.352	0.349	week

The model explains 47.6% of the variability in Academic Entrepreneurial Enthusiasm and 35.2% of the variability in Entrepreneurial Frustration Tolerance. This shows that the model can explain moderately to highly the behavioral entrepreneurship model that operates within the socially complicated environment of universities, hence validating that the selected antecedents can explain the variability in entrepreneurial attitudes.

5.9 Effect Size (f^2)

The effect size captures the extent of the contribution of each exogenous construct to the variation explained by the endogenous variable. Based on the effect size values set by Cohen, an effect size of 0.02 is considered small, 0.15 medium, and 0.35 large.

Table 5.9
Effect Size (f^2)

	f-square	Effect Size
EFT -> AEE	0.235	Medium to large
ESI -> AEE	0.019	Small
ESI -> EFT	0.133	Medium
LFF -> AEE	0.066	Small to medium
LFF -> EFT	0.087	Small to medium

The effect of Entrepreneurial Frustration Tolerance on AEE is also of moderate level. Hence, it can be said that Entrepreneurial Frustration Tolerance is important for the study due to its substantive importance. Similarly, ESI and LFF have a small to moderate effect on EFT. LFF has a small effect on AEE.

5.10 Predictive Relevance (Q^2)

Out-of-Sample Predictive Relevance gauges the predictive ability of the model. Values of Q^2 greater than zero demonstrate that the model shows predictive relevance for the endogenous variables (Hair et al., 2021; Sarstedt et al., 2021).

Table 5.10
Predictive Relevance

	Q^2predict	RMSE	MAE
EFT	0.340	0.817	0.596
AEE	0.342	0.817	0.643

The Q^2 results for both endogenous variables show substantial positive figures that are considerably higher than zero. These results prove that the developed model does not only have explanatory power but also predictive validity.

6 Discussion and Conclusion

6.1 Discussion

H1: Entrepreneurial Self-Identity and Academic Entrepreneurial Enthusiasm

Hypothesis H1 stated that ESI had a positive influence on AEE. There were no empirical findings which confirmed this hypothesis (β = 0.058, t = 1.067, p = 0.286). Therefore, H1 was not supported. It means that self-identity as an entrepreneur cannot be enough for stimulating entrepreneurial enthusiasm in universities in emerging economies. Although self-identity can enhance the aspiration towards entrepreneurship, it is unlikely that it will lead to enthusiasm in academics who continually face challenges such as red tape, lack of finance, and uncertainty of the market. This result adds to identity-based entrepreneurship research by demonstrating that entrepreneurial identity in isolation does not contribute to entrepreneurial enthusiasm without the help of other psychological attributes that can manage environmental threats.

H2: Learning from Failure and Academic Entrepreneurial Enthusiasm

The second hypothesis H2 states that LFF has a positive effect on AEE. Based on the empirical evidence presented, it is evident that this hypothesis (β = 0.242, t = 4.175, p < 0.001) is supported and can thus be accepted. From the analysis, it is apparent that academic scholars who learn from their failures in entrepreneurial ventures become enthusiastic in embarking on subsequent entrepreneurial ventures. Learning from failure increases cognitive readiness by allowing faculty members to form real expectations, procedures, and good judgment concerning the venture.

H3: Entrepreneurial Self-Identity and Entrepreneurial Frustration Tolerance

Hypothesis H3 suggested that ESI positively influences EFT. The findings offer robust evidence validating this connection ($\beta = 0.366$, $t = 5.966$, $p < 0.001$). Thus, hypothesis H3 is accepted. This suggests that academics with a high level of entrepreneurship identity have more potential to cope with frustration associated with entrepreneurial ventures. It seems that an entrepreneurial identity gives academics psychological robustness, allowing them to stay committed even despite failures and institutional opposition. This finding strengthens the idea that identity is a psychological basis required for academics' perseverance in entrepreneurial pursuits.

H4: Learning from Failure and Entrepreneurial Frustration Tolerance

In relation to Hypothesis H4, there exists a positive relationship between LFF and EFT. This is supported by the empirical evidence ($\beta = 0.296$, $t = 4.821$, $p < 0.001$), which indicates the acceptance of Hypothesis H4. Based on the findings, it can be stated that through constructive self-reflection on past failures, lecturers are able to increase their ability to manage entrepreneurial frustration. Due to the repetition of learning processes, professors are better prepared to cope with frustration and thus have higher expectations about the actual outcome of an entrepreneurial process.

H5: Entrepreneurial Frustration Tolerance and Academic Entrepreneurial Enthusiasm

In hypothesis H5, the effect of Entrepreneurial Frustration Tolerance (EFT) on Academic Entrepreneurial Enthusiasm (AEE) was tested, with the expectation that EFT positively affected AEE. This effect is highly significant ($\beta = 0.436$, $t = 7.961$, $p < 0.001$); therefore, the null hypothesis was rejected, while H5 was accepted. Among all the direct relationships examined by this research model, this link exhibited the strongest effect size. Thus, this study revealed that EFT is the most important determinant of academic entrepreneurial enthusiasm. Academicians who are tolerant of difficulties, uncertainties, and other frustrations associated with entrepreneurship will find it easier to maintain their enthusiasm regarding entrepreneurial endeavors. Therefore, this finding has redirected attention to emotional tolerance in the study of academic entrepreneurship.

H6: Mediating Role of Entrepreneurial Frustration Tolerance between Entrepreneurial Self-Identity and Academic Entrepreneurial Enthusiasm

Hypothesis H6 indicated that EFT served as a mediator between ESI and AEE. A significant mediation effect ($\beta = 0.160$, $t = 4.506$, $p < 0.001$) was observed, suggesting a full mediation effect. Thus, hypothesis H6 was confirmed. The non-significant direct effect mentioned above and a significant indirect effect suggest that entrepreneurial identity impacts enthusiasm only via developing entrepreneurial frustration tolerance. This is one of the key theoretical contributions of the paper. That is, entrepreneur self-identity does not lead to enthusiasm directly and serves as a psychological tool, which has to be translated into the ability to tolerate entrepreneurial frustration first.

H7: Mediating Role of Entrepreneurial Frustration Tolerance between Learning from Failure and Academic Entrepreneurial Enthusiasm

As for Hypothesis H7, it stated that EFT mediates the relationship between LFF and AEE. In this case, an important indirect effect was found ($\beta = 0.129$, $t = 3.910$, $p < 0.001$), indicating partial mediation. Consequently, Hypothesis H7 was found to be supported by the findings. The implication is that learning from failure leads to greater enthusiasm towards entrepreneurship as it is a result of two mechanisms: first, it contributes to the development of one's entrepreneurial skills and confidence; second, LFF makes individuals more tolerant to frustration. Hence, Learning from Failure may serve not only as a cognitive but also as an emotional resource in the process of learning.

Overall Interpretation

In summary, these findings suggest that the "psychological black box" of academic entrepreneurship in developing universities can best be understood using the construct of Entrepreneurial Frustration Tolerance. While Entrepreneurial Self-Identity and Learning from Failure are still significant antecedents, their influence on Academic Entrepreneurial Enthusiasm occurs wholly or partly via the faculty member's tolerance for entrepreneurial frustrations. In other words, the implication of these results is that successful academic entrepreneurship is contingent not only on entrepreneurial intentions or prior exposure to entrepreneurial activities, but on the faculty member's ability to persevere in the face of institutional uncertainties and frustrations.

6.2 Conclusion

It is intended that this research project should be able to explain the different paths taken by the entrepreneurial enthusiasm of faculty in universities in developing countries. That is, the research will explain why certain people maintain their entrepreneurial enthusiasm even when they are functioning in a very high-friction institutional setting while others drift away from their entrepreneurial activities even though they have the entrepreneurial orientation and innovation capabilities. The findings clearly show an answer. The maintenance of academic entrepreneurial enthusiasm does not only depend on the recognition of entrepreneurship in oneself or past entrepreneurial experience, but also on the ability of the academic to bear with and manage the frustration caused by the act of venturing into academic entrepreneurship.

As for results of the study, Entrepreneurial Self-Identity does not seem to directly affect Academic Entrepreneurial Enthusiasm but only affects this variable indirectly after converting into a frustration tolerance endurance. However, Learning from Failure seems to affect entrepreneurial enthusiasm in two ways: first, directly through cognitive preparedness and secondly, indirectly by increasing the ability to tolerate frustrations. Notably, the strongest direct predictor of entrepreneurial enthusiasm is Entrepreneurial Frustration Tolerance, which is proof that emotional strength despite frustration is the main factor that sustains entrepreneurial optimism among faculty members.

In essence, the main lesson here is unequivocal: the process of academic entrepreneurship in public universities in developing nations can never be understood based on structural, motivational, or policy-based approaches alone. Rather, this process needs to include the psychological dimension, which helps explain why faculty members continue to be motivated to keep up their efforts despite continuous failure, delays, and disappointments associated with commercialization. This hidden mechanism, otherwise known as the "black box," involves psychological endurance. To be able to keep commercialization alive in entrepreneurial universities in developing nations, entrepreneurial faculty members need frustration tolerance.

6.3 Theoretical Contributions

The current study represents an insightful contribution towards understanding academic entrepreneurship because it goes beyond the conventional focus on the relationship between entrepreneurial predispositions and outcomes to investigate in depth the internal psychological process of transformation from entrepreneurial predispositions into sustainable entrepreneurial passion within developing country universities. Although previous research has provided compelling evidence showing the strong relationship between entrepreneurial orientation, self-efficacy, salience of identity, institutional support, and commercialization motivations in driving academic entrepreneurship, the theories behind such relationships fail to explain how entrepreneurial predispositions withstand repeated frustrations in poor entrepreneurial contexts (Hayter et al., 2022; Perkmann et al., 2021). In today's entrepreneurship studies, it is widely believed that the entrepreneurial process is more than just a rational one; rather, it is a highly emotional experience where the emotional stamina plays a critical role in sustaining motivation (Portocarrero et al., 2025). The

explanation of this issue constitutes the most significant theoretical contribution of the current study.

First, Empirically, the research supports the notion of Entrepreneurial Frustration Tolerance (EFT) as the key self-regulatory mechanism responsible for mediating the relationship between the distant entrepreneurial traits and Academic Entrepreneurial Enthusiasm (AEE), thereby meeting recent pleas for more affect-sensitive and endurance-oriented models of entrepreneurship. According to structural results, EFT emerges as the most influential predictor of AEE ($\beta = 0.436$, $p < .001$) and possesses the largest magnitude effect within the model ($f^2 = 0.235$), which means that endurance plays an important role in the sustainability of academic entrepreneurs' enthusiasm since it depends not only on their cognitive entrepreneurial traits but also on their ability to psychologically withstand their frustration about failed attempts to commercialize their discoveries and overcome bureaucratic delays, long decision-making processes, and the constant risk involved in venture development. This result contributes to existing evidence suggesting that entrepreneurial tolerance of frustration represents an important psychological resource for entrepreneurs working in highly uncertain environments and must be considered as a core mechanism rather than a secondary emotional variable (Kim et al., 2025).

Second, the absence of evidence of a direct link from Entrepreneurial Self-Identity to AEE, in addition to the statistically significant finding of complete mediation through EFT ($\beta = 0.160$, $p < .001$), provides an identity-based rationale for AEE that goes beyond existing uses of identity theory. Identity theory generally argues that entrepreneurial identification leads to the development of the role of the entrepreneur as central and, consequently, increases entrepreneurial enthusiasm and commitment. In contrast, the current results suggest that the process is not necessarily a simple one, since the identification process may not generate enough motivational power to ensure entrepreneurial enthusiasm without other factors coming into play. Rather than being motivating, the identification process is a source of frustration in the first place, and the key factor here is the ability of individuals to cope with that frustration. Specifically, identity becomes productive only when it triggers frustration tolerance. Hence, the main implication for identity theory in the context of academic entrepreneurship is that entrepreneurial identity requires additional self-regulation mechanisms for sustainability. This implication is consistent with recent evidence that entrepreneurial motivations derived from identity become unstable unless they are combined with some resilient coping resources (Arenius & Brough, 2022; Guerrero & Walsh, 2024; K. Wang et al., 2024). Thus, from "identity produces enthusiasm," we move on to "identity produces enthusiasm only if it tolerates entrepreneurial obstructions.

Third, However, Learning from Failure has emerged as a partial mediator of the relationship between entrepreneurial antecedent (ESI) and AEE because it shows both a strong direct effect ($\beta = 0.242$, $p < .001$) as well as an indirect effect via Emotional Frustration Tolerance ($\beta = 0.129$, $p < .001$). Hence, researchers studying Learning from Failure as an entrepreneurial experience demonstrate that it not only serves as a source of information but also builds up frustration tolerance among entrepreneurs. It allows them to better handle emotionally taxing entrepreneurial experiences and retains positive entrepreneurial effect when confronted with adverse situations. As recent literature suggests, reflective learning from failure is an important source of emotion regulation competence, besides being instrumental in the generation of strategy knowledge. Therefore, it makes entrepreneurs better capable of re-engaging themselves in uncertain entrepreneurial situations (McSweeney et al., 2025); entrepreneurial learning from failure evidence in Pakistan, 2025). The above discussion makes it evident that reflective learning from failure has a twofold role in entrepreneurship as it serves as both a psychological and informational asset for entrepreneurs. In doing so, it adds to the theoretical value of Social Cognitive Career Theory by proving that self-regulatory change in entrepreneurial ventures is multidimensional and

depends on the kind of psychological resource added to the model.

Fourth, on a wider and more general theoretical plane, the current research is a valuable contribution to placing academic entrepreneurship within the institutionally void contexts. Most theories related to entrepreneurship within academia have been developed based on successful cases in mature commercialization contexts. By contrast, the present study demonstrates that in developing countries academia, where institutional friction is structurally high, psychological endurance becomes disproportionately explanatory. The full mediation pattern identified here indicates that under weak institutional buffering, the relationship between entrepreneurial attributes and entrepreneurial enthusiasm is no longer direct but psychologically contingent. This empirically substantiates the institutional theory proposition that individual-level entrepreneurial outcomes are fundamentally reshaped by contextual voids, not only structurally but psychologically as well (Bruton et al., 2023; Ying Chen et al., 2024). Hence, the study contributes a context-sensitive "frustration-conditioned conversion model" of academic entrepreneurship, offering a more realistic explanatory template for emerging economies where entrepreneurial enthusiasm is tested continuously rather than episodically.

Collectively, these contributions establish that the decisive explanatory issue in academic entrepreneurship is not whether academics possess entrepreneurial identity or entrepreneurial learning experiences, but whether they possess the frustration-bearing psychological architecture capable of preserving those resources long enough to sustain entrepreneurial enthusiasm.

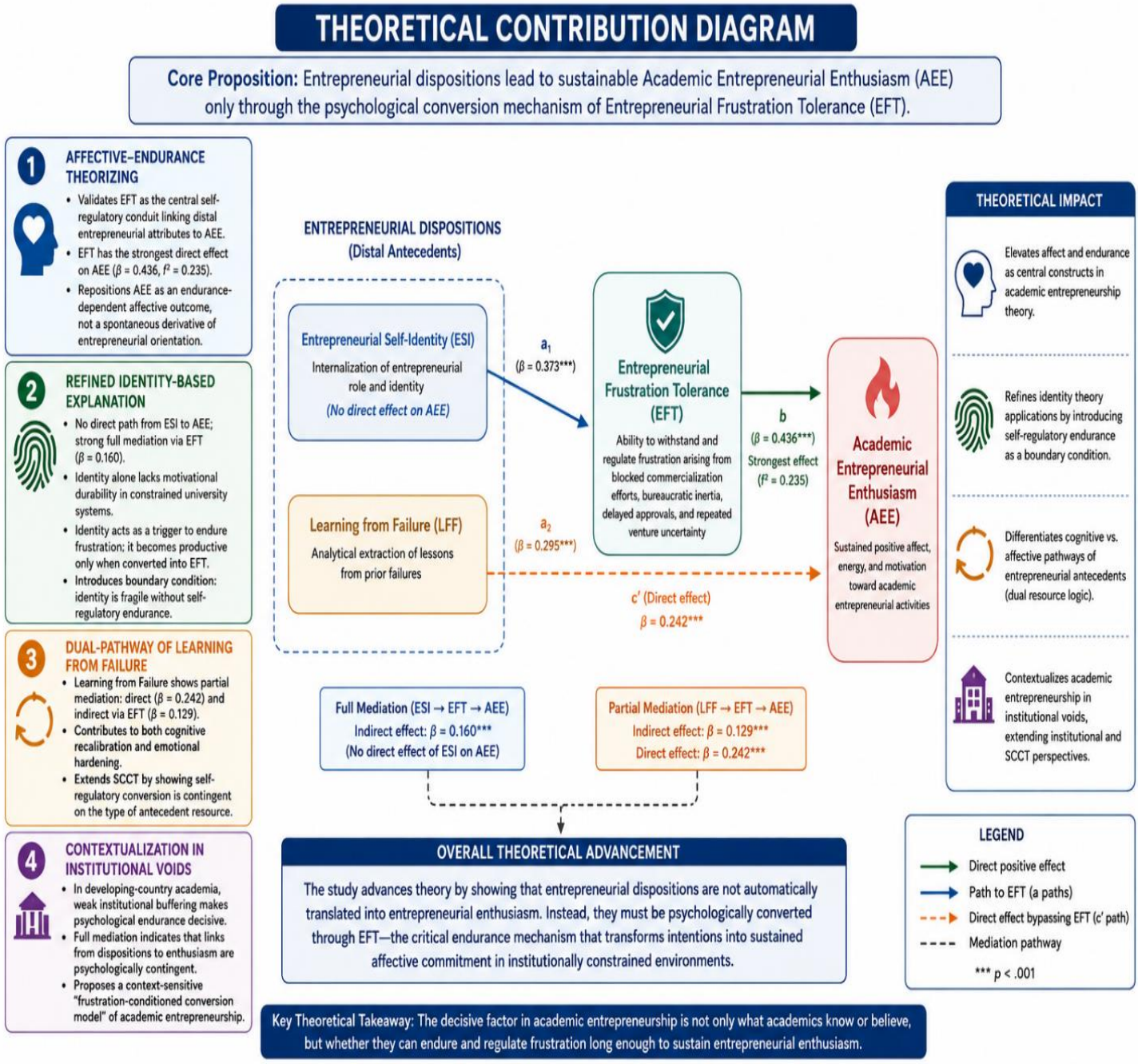

Figure 6.1 Theoretical Contribution

6.4 Practical Implications

These empirical findings generate a host of implications that are highly actionable by university administrations, faculty professional development programs, university technology transfer and commercialization offices, and policy makers at universities, especially those located in developing nations, where entrepreneurship is likely to succeed not because there are no good ideas, but because people remain motivated.

First, Given the importance of EFT, it can be concluded that the existing policies for entrepreneurship at the university level are overly

dependent on infrastructure development while paying insufficient attention to the psychological aspect of entrepreneurship promotion. In many of the emerging universities, support around entrepreneurship has been linked solely to establishing incubators, ORICs, patent offices, competitions, and grant-facilitation units. Although the mentioned infrastructure plays an essential role, the findings reveal that without addressing psychological capacity, the system fails to keep the entrepreneurs motivated as their ability to withstand frustration is crucial. As it has been established that EFT turned out to be the most powerful predictor of AEE, the psychological aspect should become a core component of university entrepreneurship policies. Similar findings were also provided by the recently conducted studies which indicated that support systems for entrepreneurship produce insufficient results without addressing entrepreneurial frustration (Balzano et al., 2024; Portocarrero et al., 2025). Therefore, a transition from establishing entrepreneurship facilities to building frustration resilience should be made.

Second, Faculty entrepreneurship development programs ought to be reengineered from scratch to include frustration management modules in the training curriculum, since interventions in the form of business planning, patent submission, proposal writing, and venture pitching are too narrow an approach to address the issue. The complete findings about the mediators between the independent and dependent variables in the study of ESI reveal that neither motivation nor reinforcement of the identity of being an entrepreneur will yield desirable results if scholars lack the ability to cognitively deal with the frustrations of unmet goals, institutional deafness, and failed commercialization attempts. It is thus recommended that the university implements frustration deconstruction and stress inoculation, alongside emotional regulation and cognitive reappraisal, into ORIC and incubation training programs. Recent studies show that entrepreneurship emotion-regulation training makes academics persist and come back after failure because of their ability to interpret adverse entrepreneurial experiences as diagnosable experiences and not self-defeating ones (Arenius & Brough, 2022; Coleman, 2025).

Third, Learning from Failure's strong direct and indirect impact suggests that universities should develop formal means of learning about failures rather than allowing entrepreneurial failures to continue as isolated and private instances of frustration. Instances like failed grant proposals, patents turned down, deals in industry falling through, and efforts at spinning off failing should be developed into repositories for learning through post-project debriefings, reflective discussions among peers, and "lessons from commercialization" workshops. Such learning processes not only help reduce the shame that comes with failure but also turn individual shame into organizational entrepreneurial memory. It is clear from recent scholarly literature that those organizations who have succeeded at fostering entrepreneurial participation in their ranks are those who make intelligent failure a normal part of their culture (McSweeney et al., 2025; Murphy, Heinze, & Platt, 2024). Thus, Pakistani universities need to move away from cultures of secret failure towards cultures of pedagogic failure.

Fourth, reducing institutional policy is crucial. The results obtained from the research suggest that many policies at universities serve to increase frustration levels of academic personnel. Extended hierarchy of approval, lack of clarity regarding ownership of intellectual property, delays in compensation, criteria of promotion that discourage commercialization activities, and lack of clarity altogether increase the level of frustration that is felt by entrepreneurial academics. Taking into consideration the evidence that entrepreneurial spirit is greatly influenced by the degree of frustration, overcoming unnecessary hurdles at universities becomes both an important administrative issue and an essential strategy for encouraging entrepreneurship. Academic institutions need to conduct systematic reviews of entrepreneurial friction to detect any problematic procedures that contribute to decreased levels of motivation among professors. Recent context-based research conducted in emerging entrepreneurial university environments confirms that role conflict, procedural ambiguity, and

bureaucracy prevent entrepreneurs from continuing their work in academia (Tunalioglu et al., 2024; Yin, Jiang, & Tong, 2025).

Finally, the results of this study imply important policy recommendations for national higher education policymakers, especially for the Higher Education Commission and the ministries responsible for innovation and commercialization. While existing entrepreneurship policies focus more on financing schemes, expanding incubators, and measuring venture creation, there is little attention paid to the psychological and social sustainability of the entrepreneurs themselves. As illustrated by the current research, without corresponding efforts being made in building resilience, providing mentorship, offering emotional assistance, and developing methods for dealing with failures, a lot of entrepreneurship programs might attract participants at first but fail to sustain their interest. Therefore, national policy should obligate university-based entrepreneurial centers receiving public funding to include faculty resilience mentoring, entrepreneurial counseling, and post-failure programs in their commercialization initiatives. In developing countries, where organizational deficiencies cannot be addressed in the short run, increasing entrepreneurial frustration tolerance would become a crucial policy instrument to maintain entrepreneurial involvement.

Overall, the paper clearly demonstrates one obvious implication for practice: higher education institutions should not only create the necessary opportunities but also foster mental resilience that will help academics to survive through those opportunities amidst frustration.

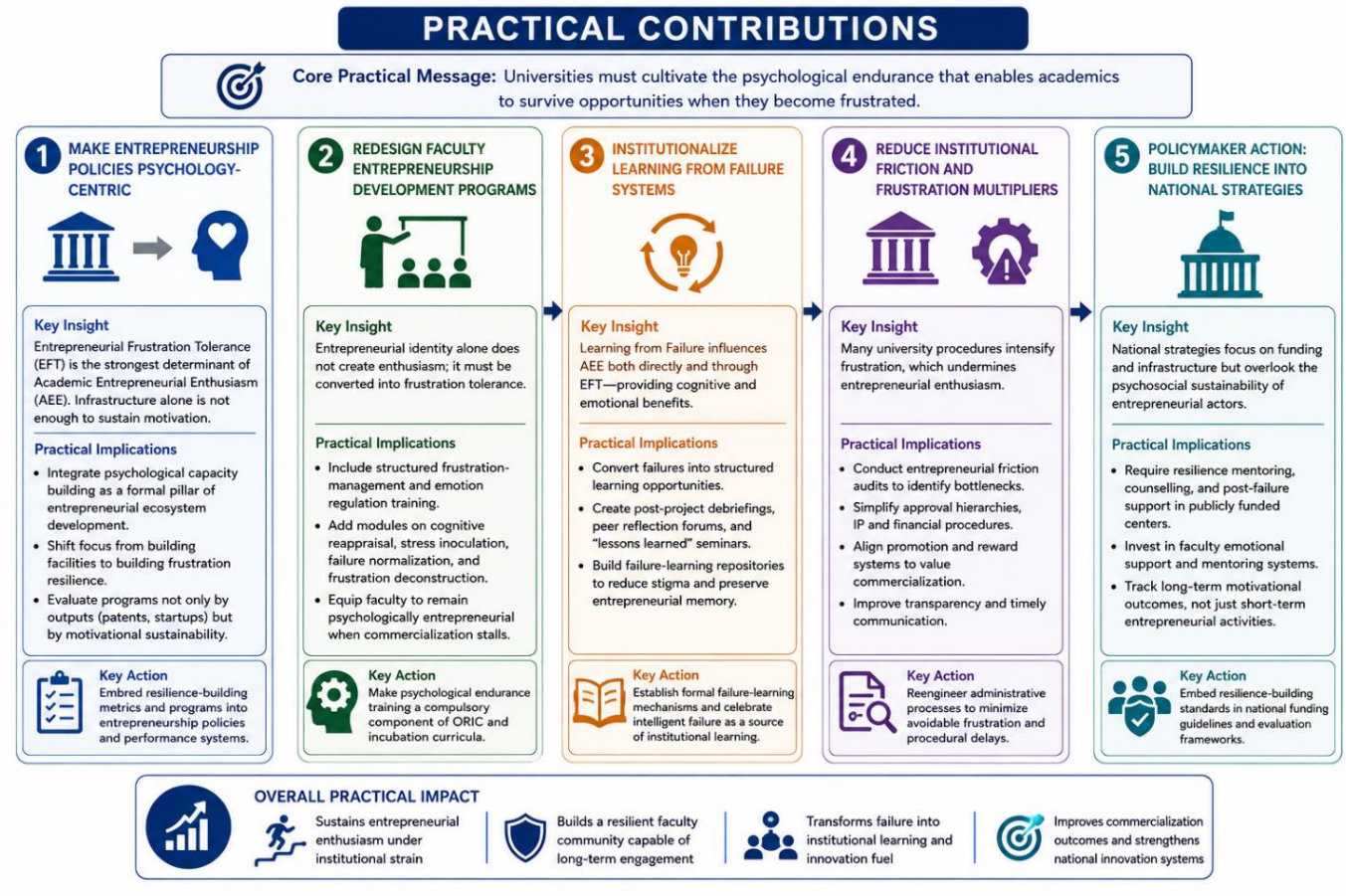

Figure 6.2 Practical Contribution

6.5 Recommendations

In the case of academic motivation within the university environment, it is often misunderstood that academic entrepreneurship involves periodic enthusiasm; rather, it involves persistent hard work and involvement in research. The case of Pakistani universities reveals that the burden of increased administrative tasks placed on academics reduces their focus on research and innovation. The more academics become involved in the governing process, committee work, and university politics, the less they contribute to academic entrepreneurship.

Since there are certain rules designed to prevent the involvement of academics in excessive administrative tasks, the weak implementation of such policies makes it easier for senior academics to assume the roles of governance, which is another factor that weakens research activities.

This means that by making academics involved in administrative work, universities are losing their innovative character and becoming administratively centered institutions. Thus, placing administrative burdens on academics results in low research productivity and prevents the creation of an entrepreneurial university. Academics must be focused on teaching and research.

7 Limitations and Future Research

7.1 Study Limitations

Despite the study's significant theoretical contribution to the growing body of literature on entrepreneurial activities by academics in developing countries, there are some limitations in terms of methodology and context that may restrict the interpretation of the results. Nevertheless, such limitations are not considered to undermine the study's significance in explaining a phenomenon; instead, they can be viewed as useful guidelines for future theoretical developments.

First, this study utilized a cross-sectional research design, which allowed for a simultaneous evaluation of Entrepreneurial Self-Identity (ESI), Learning from Failure (LFF), Entrepreneurial Frustration Tolerance (EFT), and Academic Entrepreneurial Enthusiasm (AEE). Although the hypothesized causal sequence builds upon Social Cognitive Career Theory, Identity Theory, and studies on entrepreneurial cognition, a cross-sectional design does not allow for definitive conclusions regarding temporal precedence (Hair et al., 2021; Sarstedt et al., 2021). Psychological processes underlying entrepreneurial involvement are dynamic, recursive, and unfold over time. This means that there is still room to suppose that entrepreneurial enthusiasm could, in turn, enhance frustration tolerance by repeatedly encountering entrepreneurial challenges, thus generating reciprocal effects and feedback loops. As Davidsson (2006) explain, entrepreneurial cognition and emotional reactions emerge through an adaptive process that requires longitudinal research designs.

Second, an exclusive focus on self-report measurement could create problems with respect to common method variance, exaggeration, and social desirability effects. While appropriate procedures and statistics were used to minimize these problems, it is possible that faculty members working in the more entrepreneurial environment of universities have exaggerated their entrepreneurial orientation, resiliency, and frustration tolerance considering university aspirations in their role as third mission's agents (Munir et al., 2024). Additionally, constructs like frustration tolerance and entrepreneurial excitement are emotional by nature; hence, they can be easily subject to distortion through subjective interpretation (Yao & Xu, 2024).

Third, the situational focus of the study means that generalizability is less likely beyond the setting of Pakistani higher education institutions. Pakistan provides a high-friction entrepreneurship environment characterized by institutional voids, red tape, inadequate commercialization infrastructures, and insufficient technology transfer mechanisms. Although this makes Pakistan an ideal location for researching the resilience of academic entrepreneurs from a psychological perspective, the relative importance of EFT in understanding the experience may depend on the degree to which established innovation environments are able to offer institutionalized supports that significantly reduce

entrepreneurial uncertainty (Ying Chen et al., 2024).

Fourth, the current model places heavy emphasis on mediation effects and therefore does not consider several potentially important moderator contingencies that might either enhance or reduce the suggested links. Entrepreneurial thinking rarely happens in a vacuum independent of external factors. Factors such as the perception of institutional backing, an environment conducive to entrepreneurial leadership, psychological safety, mentoring opportunities, conflict with job roles, previous experiences with entrepreneurship, and departmental attitudes toward commercialization could have a significant impact on how academics convert entrepreneurial identity and failure experience into entrepreneurial passion (Tantawy et al., 2026; K. Wang et al., 2024).

Finally, As the study follows a quantitative approach, it inevitably reduces entrepreneurship experiences to measurable latent variables. In other words, the methodology limits access to the rich experience of scholars who engage in entrepreneurial activities in developing countries. Even though the proposed structural model reveals that frustration tolerance is an important psychological factor in entrepreneurial endeavors, it fails to shed light on the ways scholars perceive failure in entrepreneurship, bureaucratization, uncertainty, or any other obstacle that might stand in the way of success in their work.

7.2 Future Research Directions

Expanding from these constraints, a number of fruitful areas of investigation can be pursued. First and foremost, subsequent research must adopt longitudinal and experience-sampling methodologies that will enable them to explore the dynamics associated with the entrepreneurial affective state over time. For instance, the study can explore the fluctuations in entrepreneurial enthusiasm when subjected to multiple venture failures, institutional challenges, or failures in commercialization, and how entrepreneurial fear and thrill (EFT) change over time in terms of increasing, decreasing, or stabilizing (Arenius & Brough, 2022). Another direction worth pursuing is the use of cross-lagged panel modeling to uncover the interconnections between entrepreneurial enthusiasm and frustration tolerance.

On an individual basis, future studies can expand the nomological net of entrepreneurial academic traits by exploring other constructs not covered in this study. Constructs like achievement motivation, locus of control, tolerance to ambiguity, proactiveness, resilience, perseverance, passion for entrepreneurship, autonomy orientation, innovation, risk-taking propensity, and psychological capital can add value to the explanation of the reasons for which some academics are engaged in entrepreneurial activities despite the institutional friction. Similarly, constructs from personality psychology such as openness to experience, conscientiousness, and extraversion can provide insights on dispositional differences between academic entrepreneurs.

Research efforts should focus on creative self-efficacy considering that it can either be viewed as a direct antecedent of Academic Entrepreneurial Enthusiasm or an underlying buffer that enables the sustenance of entrepreneurship in the context of repeated failures and uncertainties. People with high levels of creative self-efficacy view institutional restrictions as something they can overcome cognitively rather than psychologically as a result, continue to recognize opportunities and carry out entrepreneurial experiments regardless of unfavorable contextual settings (Ying Chen et al., 2024). Additionally, future studies should focus on the concept of academic freedom as a strategic institutional antecedent of entrepreneurial enthusiasm. Increased levels of autonomy among university researchers can facilitate experimentation, interdisciplinary cooperation, intellectual risk-taking, and engagement in translational research leading to improved entrepreneurial identity and commercialization intentions.

Future studies should also take into consideration social capital factors in academic entrepreneurship environments. Industrial network centrality, boundary-crossing abilities, availability of entrepreneurial mentorship and dense peer networks may play an important role in shaping the process through which academics learn about

entrepreneurship, access and utilize entrepreneurial resources, as well as cope with commercial uncertainties. The above-listed factors have not been adequately explored in the existing entrepreneurship development theories in developing countries.

Cross-cultural comparative analysis is another important research direction that requires further attention in future studies. Cross-comparative studies between developing countries and developed countries' academic communities would shed light on whether frustration tolerance is crucial in all situations or only becomes more important when there is a lack of efficient institutions (Balzano et al., 2024). Comparative research in South Asian, Southeast Asian, and advanced Western higher education environments would increase the context dependence of academic entrepreneurship theories.

In addition to the focus on faculty members only, future studies need to address the question of whether similar psychological processes take place in students, young researchers, postdocs, and those people who combine academic activities with business ventures. Specifically, students may demonstrate distinct characteristics in terms of entrepreneurial cognition owing to insufficient professional experience and less-developed entrepreneurial self-concept. As a result, the moderating influence of EFT can also differ at various career stages.

Finally, the use of qualitative and phenomenology-based methods is highly encouraged to enhance the descriptive power of modeling using quantification techniques. Qualitative research methods such as in-depth interviewing, narrative inquiry, diary research, and longitudinal qualitative case studies will help to provide insight into the ways that academic entrepreneurs cognitively restructure their experiences of failure, manage emotional responses to disappointment and maintain excitement despite institutional opposition. These types of research have the capacity to greatly enhance the comprehension of the micro-level psychological mechanisms that result in entrepreneurial persistence in resource-poor university environments.

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