

PERCEIVED ENTREPRENEURIAL ORIENTATION AND PERCEIVED ACADEMIC ENTREPRENEURIAL INTENTION: A MEDIATING ROLE OF KNOWLEDGE CREATION

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ABSTRACT

The primary objective of the current study is to examine the role of attributes associated with perceived entrepreneurial orientation in influencing knowledge creation and perceived entrepreneurial intentions. Additionally, the study aims to evaluate the mediating role of knowledge creation in the relationship between perceived entrepreneurial orientation and perceived entrepreneurial intentions. Faculty members from public and private sector universities were selected as the unit of analysis, with a final sample of 392 participants obtained through simple random sampling to investigate the relationships among the latent constructs. The findings reveal that attributes such as unconventionality, research mobilization, industrial collaboration, and supportive university policies significantly and positively predict perceived entrepreneurial orientation. Moreover, the results indicate that perceived entrepreneurial orientation significantly and positively influences perceived entrepreneurial intentions among faculty members. The study also establishes a significant positive relationship between perceived entrepreneurial orientation and knowledge creation. Furthermore, the findings confirm that knowledge creation is significantly and positively associated with perceived entrepreneurial intentions. Importantly, knowledge creation is found to mediate the relationship between perceived entrepreneurial orientation and perceived entrepreneurial intentions, highlighting its pivotal role in fostering entrepreneurial activity among university faculty members. This study provides valuable policy implications and insights for faculty members, universities, policymakers, and regulatory authorities. It underscores the importance of fostering an entrepreneurial culture within academic institutions through targeted policies and practices that enhance knowledge creation and entrepreneurial orientation. Future research directions are also outlined, encouraging further exploration of these constructs in different contexts and among diverse populations.

Keywords: *Perceived entrepreneurial orientation, knowledge creation, perceived entrepreneurial intentions, faculty members, psychological empowerment theory, psychological climate theory.*

INTRODUCTION

Academic entrepreneurship refers to the process through which academic institutions contribute to knowledge creation and commercialization

through start-ups, patents, spin-offs, licenses, and collaborative industrial solutions (Guerrero et al., 2016). Increasingly, the literature emphasizes the

pivotal role of individual academics in driving knowledge valorization activities, thereby highlighting the intersection of individual motivation, institutional support, and entrepreneurial engagement in predicting academic entrepreneurship (Wright & Phan, 2018; Al-Tabbaa & Ankrah, 2019). Given this landscape, scholars have turned their attention to identifying predictors and key actors involved in fostering academic entrepreneurial intention. These efforts aim to inform policy design and institutional strategies that encourage entrepreneurial activities among academics (Balven et al., 2018). According to Bird (2002), entrepreneurial intention is a state of mind directing personal attention and behavior toward entrepreneurial goals. These intentions emerge from the interplay of personal and contextual factors, including entrepreneurial orientation and thinking, which together drive the process of knowledge creation as a precursor to entrepreneurial activities (Hasanah et al., 2023; Ozgul & Kunday, 2015).

Economic perspectives also play a significant role in conceptualizing academic entrepreneurial intentions. Literature highlights that economic, organizational, institutional, and psychological factors influence academics' willingness to engage in entrepreneurial activities through pathways outlined in the Theory of Planned Behavior (TPB) (Huyghe & Knockaert, 2016). Faculty perceptions of entrepreneurial orientation are particularly critical, as they influence opportunity recognition and subsequent opportunity exploitation behavior—key components of knowledge creation (Kalar & Antoncic, 2015; Abou-Warda, 2015). Despite this, a significant gap persists in understanding how faculty members with the requisite competencies and institutional entrepreneurial orientation transition from opportunity recognition to participation in entrepreneurial activities.

Knowledge creation, often equated with opportunity exploration behavior, involves identifying opportunities where market needs align with resource availability (Von Krogh et al., 2012). Conversely, commercialization represents opportunity exploitation. Extant literature consistently underscores the importance of individual-level factors in determining who

undertakes entrepreneurial activities, with individual motivation and competence playing a central role (Hayter et al., 2018; Chang et al., 2009). Importantly, not all faculty members who recognize entrepreneurial opportunities engage in commercialization, suggesting that mediating factors, such as knowledge creation, influence this process (Chen et al., 2015).

Faculty members contribute directly to entrepreneurial activities by participating in university-industry collaborations, consulting external entities, licensing intellectual property, and founding new ventures. These activities align with the institutional goal of fostering "entrepreneurial universities," where knowledge creation and exploitation coexist synergistically, a concept referred to as research ambidexterity (Feola et al., 2021). Understanding this dynamic relationship between perceived entrepreneurial orientation, knowledge creation, and entrepreneurial intention is critical for advancing academic entrepreneurship. Thereby, following research questions guided the present study to achieve the research objectives.

Does perceived entrepreneurial orientation significantly link with the perceived entrepreneurial intentions?

Does perceived entrepreneurial orientation significantly link with the knowledge creation?

Does the knowledge creation mediate the relationship between perceived entrepreneurial orientation and perceived entrepreneurial intentions?

Literature Review

Prior studies define entrepreneurship as “a process that occurs over a period of time” (Hisrich et al., 2017). When viewed as a process, intention emerges as a critical precursor to entrepreneurial activities (Yemenici, 2022). Unlike accidental endeavors, entrepreneurship is deliberate, requiring careful planning and intentional choice (Alsafadi & Aljuhmani, 2024). The setting in which individuals operate plays a significant role in shaping entrepreneurial endeavors, a phenomenon substantiated by prior research (Obschonk et al., 2019; Umar et al., 2024).

Higher education institutions serve as critical engines of societal progress, fostering innovation

(Akram & Abdelrady, 2023; Al-Adwan et al., 2022), knowledge dissemination (Li & Akram, 2023, 2024), and skill development (Noor et al., 2021; Abdelrady & Akram, 2022). In the context of economic growth and innovation, these institutions play a pivotal role in nurturing entrepreneurial thinking and orientation, which can eventually translate into entrepreneurial ventures. Teachers and students form the cornerstone of any educational system, shaping the intellectual, social, and emotional development of individuals and communities (Akram & Li, 2024; Akram & Yang, 2021). Their influence extends beyond the classroom, fostering critical thinking, creativity, and a lifelong passion for learning (Akram, 2020; Khanam et al., 2022). Studies suggest that both educational institutions and faculty members engaged in entrepreneurial activities contribute to fostering an entrepreneurial mindset among students. This is achieved by implementing innovative programs and cultivating a research-oriented culture (Cerver Romero et al., 2021; Duong, 2022). Academic entrepreneurial ventures are particularly significant as they often produce industry-specific or related knowledge. Klenner et al. (2022) highlight that scholars involved in consulting activities with private enterprises, government bodies, and organizations aligned with their research areas are frequently engaged in commercialization efforts. These efforts may lead to the establishment of new companies, contributing to economic growth, often supported by advancements in information technology. Furthermore, the decision to initiate a new enterprise is influenced by several factors, including a forward-thinking organizational environment, intrinsic and extrinsic motivational drivers, formal recognition, and an individual's innovative mindset (Nguyen, 2020). Collectively, these elements underline the importance of fostering an entrepreneurial ecosystem within academic and organizational contexts to stimulate innovation and economic development.

Perceived Entrepreneurial Orientation and Academic Entrepreneurial Intentions

Empirical evidence suggests that workplace characteristics significantly influence employees' goal-oriented behavior (O'Shea et al., 2021).

Entrepreneurial orientation, a key organizational trait, is recognized as a driver of effective performance (Kiyabo & Isaga, 2020) and has been linked to positive entrepreneurial outcomes in academia. For instance, studies demonstrate a significant relationship between the perceived entrepreneurial orientation of academic departments and entrepreneurial outcomes among faculty members (Kalar & Antoncic, 2015; Abou-Warda, 2015). According to the Theory of Planned Behavior (TPB), intentions precede actual behavior, but as this study adopts a cross-sectional design, it cannot directly examine the transition from intention to performance. Instead, the focus remains on testing these constructs separately.

While entrepreneurial orientation has been widely studied in corporate settings, its relevance to academia varies due to differing work environments and cultural factors (Todorovic et al., 2011). The degree of entrepreneurial orientation's impact also depends on the level of commercial activity within institutions (Arabeche et al., 2022). In universities, entrepreneurial initiatives such as start-ups, business incubators, and consultancy services are increasingly significant, yet their success often hinges on institutional systems, departmental strategies, and faculty orientation toward entrepreneurship.

Entrepreneurial orientation fosters a conducive environment for knowledge creation and commercialization. Studies highlight that individuals are more likely to engage in entrepreneurial activities when exposed to supportive organizational policies and a workplace culture that values creativity and innovation (Nowiński & Haddoud, 2019). These "role models" in academic departments inspire individuals to pursue entrepreneurial ventures by providing a favorable environment for developing confidence and creativity (Garaika et al., 2019). The alignment of departmental entrepreneurial orientation with faculty intentions is crucial for encouraging academic entrepreneurship.

Furthermore, research underscores the role of individual traits such as self-efficacy and environmental factors in shaping entrepreneurial intentions (Şahin et al., 2019). While some studies suggest that organizational environments have limited influence on entrepreneurial intentions

(Yukongdi & Lopa, 2017), others argue that structured policies and initiatives significantly enhance individuals' propensity for entrepreneurship (Nowiński & Haddoud, 2019). Given these insights, the present study hypothesizes the following:

H1: There is a significant relationship between the perceived entrepreneurial orientation of the department and academic entrepreneurship intention.

Knowledge Creation Behaviour and Academic Entrepreneurship Intentions

Knowledge creation is a dynamic process involving the generation, exchange, and application of knowledge within organizations, contributing to innovation and competitive advantage (Al-Omouh et al., 2020). Employees who actively engage in knowledge-sharing and research activities are more likely to develop entrepreneurial intentions, as their contributions often align with the organization's innovative goals (Eseryel, 2014). It begins when implicit knowledge is shared and refined into explicit, actionable insights. Konno and Schillaci (2021) emphasize that this transformation is central to innovation and entrepreneurship, particularly within research-driven organizations. Employees who participate in knowledge creation are often inspired to pursue entrepreneurial opportunities, as this process fosters continuous learning and problem-solving capabilities.

Technology has revolutionized the landscape of education, transforming the way knowledge is created, shared, and consumed (Akram et al., 2021, 2022; Ma et al., 2024). It bridges gaps in access, enabling students and educators worldwide to connect and engage in meaningful learning experiences irrespective of geographical limitations (Akram & Sohail, 2024). Technological advancements play a significant role in this context. Technology facilitates access to specialized knowledge, enhancing individuals' ability to innovate and align with entrepreneurial objectives. This integration of knowledge and technology boosts intentions to engage in entrepreneurial activities, further driving organizational competitiveness (Eseryel, 2014). Research indicates that knowledge creation is a

precursor to academic entrepreneurship. Studies by Ozgul and Kunday (2015) and Miranda et al. (2017) reveal that knowledge creation sparks research initiatives in universities and organizations, ultimately influencing entrepreneurial intentions. These intentions are shaped by individual behaviors, normative concerns, and the organizational culture surrounding research and innovation. The theoretical framework for an entrepreneurial university integrates both internal and external factors, such as resource availability and institutional capacity, to promote entrepreneurship (Guerrero et al., 2016). The resource-based view underscores the strategic value of knowledge creation as a long-term competitive advantage for institutions and their employees. Studies show that prior research output positively correlates with the likelihood of commercializing academic findings (Scuotto et al., 2022).

Similarly, Blair and Shaver (2020) highlight the complementary nature of knowledge generation and exploitation in fostering entrepreneurial outcomes. Employees who engage in knowledge-sharing contribute to an innovative culture, enabling organizations to achieve perceived competitiveness (Al-Omouh et al., 2020). Based on these insights, the following hypothesis is proposed:

H2: There is a significant relationship between knowledge creation behaviour and academic entrepreneurship intention.

Mediating role of Knowledge Creation

Knowledge creation serves as a critical mediator in fostering entrepreneurial outcomes within academic settings. The proposed hypothesis explores the mediating effect of knowledge creation in the relationship between perceived entrepreneurial orientation and research ambidexterity among faculty in Pakistani universities. Entrepreneurial orientation encompasses behaviors and attitudes that align individuals and organizations with innovative and entrepreneurial activities. Studies indicate that this orientation enhances employees' intentions to engage in entrepreneurship by fostering a conducive environment for research and knowledge-sharing (Nowiński & Haddoud, 2019).

Self-efficacy, coupled with the ability to transfer knowledge, plays a vital role in enhancing entrepreneurial orientation, which, in turn, motivates individuals toward entrepreneurial endeavors.

Huyghe and Knockaert (2016) highlight the importance of a collaborative research culture in shaping entrepreneurial intentions. Department-level research initiatives and orientation activities provide the structure and resources needed to cultivate a research-driven mindset among faculty. Similarly, Peschl et al. (2021) argue that entrepreneurial activities influence employees' psychological and behavioral orientations, steering them toward entrepreneurship. Knowledge creation acts as a bridge that connects entrepreneurial orientation with academic entrepreneurship intentions. The process involves transforming tacit knowledge into explicit knowledge through structured orientation practices (Al-Omouh et al., 2020). These practices equip individuals with the necessary tools and perspectives to apply their knowledge innovatively, thereby fostering entrepreneurship. Research by Paoloni et al. (2020) suggests that entrepreneurial orientation drives research activities, which are further amplified by knowledge creation. Faculty actively engaging in research activities benefit from the knowledge transfer process, which enhances their entrepreneurial capabilities. Al-Omouh et al. (2020) also underscore the role of personality, motivation, and disposition in influencing academic entrepreneurship, emphasizing the interplay between knowledge creation and entrepreneurial intention.

Chang et al. (2009) tested the mediating role of research ambidexterity in the relationship between knowledge creation and academic entrepreneurship behavior, finding partial mediation. This highlights the nuanced role of knowledge creation in linking entrepreneurial orientation to academic entrepreneurship intentions. Similarly, Diáñez-González et al. (2021) demonstrated that knowledge sharing positively influences entrepreneurial outcomes by enabling organizations to harness implicit knowledge and innovate effectively. Knowledge creation is essential for entrepreneurial orientation

to yield significant entrepreneurial outcomes. Factors such as knowledge transfer, idea generation, and employee motivation collectively shape entrepreneurial orientation and facilitate entrepreneurship (Obschonka et al., 2019). These processes are supported by internal factors like organizational structure and external factors like economic conditions (Riviezzo et al., 2019). Based on these insights, the following hypotheses are proposed:

H3: Knowledge creation significantly links with perceived entrepreneurial intentions.

H4: Knowledge creation mediates the association between entrepreneurial orientation and academic entrepreneurship intentions.

Theoretical Framework

The present study is grounded in Psychological Empowerment Theory, which emphasizes managing the balance between "exploitation" and "exploration" based on an understanding of organizational environments, circumstances, and individual characteristics (Zimmerman, 1995). This theory posits that individuals' perceptions of empowerment—rooted in their psychological engagement with their environment—enable them to make effective decisions and take proactive actions.

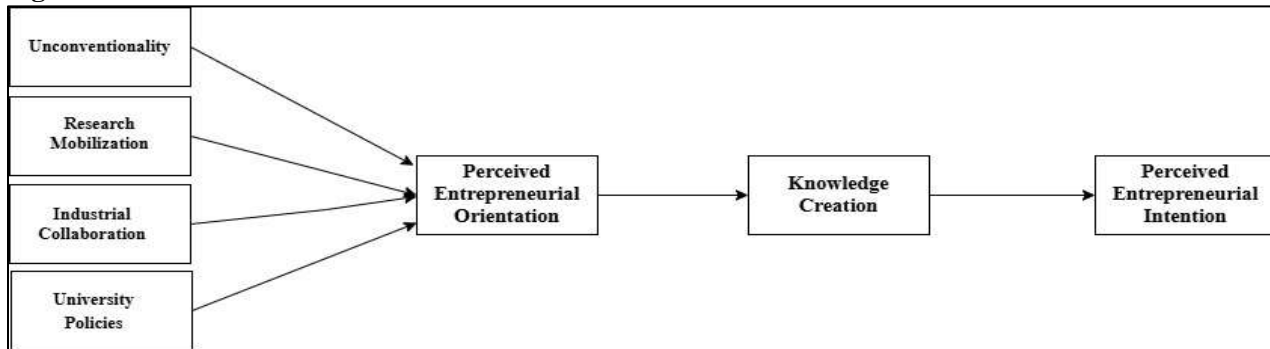
Applying this framework (see Figure 1), the study proposes that academic entrepreneurial intentions are shaped by faculty members' perceptions of entrepreneurial orientation and entrepreneurial thinking. These perceptions are influenced by organizational factors and individual attributes. As highlighted in prior research, entrepreneurial orientation and thinking emerge from an individual's understanding of their organizational circumstances and opportunities for innovation (Peschl et al., 2021).

The study further incorporates Psychological Climate Theory as a supportive framework. This theory asserts that individuals' attitudes and behaviors are influenced by their perceptions of the workplace environment (James et al., 2008). Accordingly, the entrepreneurial environment is introduced as a moderating construct, which impacts the relationship between knowledge creation behavior and academic entrepreneurial intentions. Empirical studies, such as those by

Huyghe and Knockaert (2016) and Obschonka et al. (2019), provide evidence that supportive organizational climates amplify entrepreneurial

outcomes by fostering innovation and collaboration.

Figure 1. Theoretical Framework



Methodology

The methodology of the study was designed to achieve its objectives using a survey-based approach. This method was deemed suitable for examining the causal relationships among the measured constructs or phenomena underpinning the research (Zikmund et al., 2013). According to Guidolin et al. (2021), survey-based methods are ideal for measuring and collecting data on multiple variables and testing hypotheses to achieve research objectives. Prior studies have also endorsed the effectiveness of survey-based strategies (Neneh, 2019). Consequently, the current study employed this method to collect data and test the theoretical model.

Sampling procedure

A random sampling technique was used, facilitated by Microsoft Excel. A complete list of faculty members was entered into an Excel spreadsheet without separating affiliations. The random number command and random weights were applied to select the sample. This method ensured that the sample was representative of the target population.

Population and Sample Size

The study targeted public and private universities in Pakistan. Data were collected through questionnaires distributed to individual faculty members from these universities. Pakistan has 226 recognized universities, with 78 located in Punjab,

64 in Sindh, and 23 in Islamabad. As of 2014-2015, Pakistan's public and private institutions employed 37,397 faculty members (Zeiger, 2021). Approximately 14,000 full-time faculty members worked in public and private universities in Punjab alone (Zeiger, 2021). A comprehensive list of faculty members was obtained from the universities' official websites, and the sample focused on individuals engaged in or interested in entrepreneurial activities. Using Morgan's sample size calculation, 370 observations were required. However, to account for potential non-responses, 685 faculty members were selected through random sampling.

Data Collection Procedure

Data collection relied on self-administered questionnaires, specifically designed to align with the study's objectives and improve reliability and response rates (Collis & Hussey, 2013). The questionnaire employed a five-point Likert scale, which is widely recognized for its ease of use and effectiveness in survey-based research (Nani, 2016).

To ensure relevance and validity, the questionnaire items were adapted from existing literature and tailored to address the current study's research goals. Faculty members' responses were collected and analyzed to test the theoretical model and examine academic entrepreneurial intent.

Table 1. Measurement Model

Variable	Items	Loadings	CA	CR	AVE
Academic Entrepreneurial Intentions	AEI1	0.625	0.866	0.896	0.523
	AEI2	0.643			
	AEI3	0.804			
	AEI4	0.773			
	AEI5	0.834			
	AEI6	0.802			
	AEI7	0.494			
	AEI8	0.744			
Industrial Collaboration	IC1	0.881	0.931	0.946	0.744
	IC2	0.906			
	IC3	0.830			
	IC4	0.885			
	IC5	0.899			
	IC6	0.766			
	IC6	0.802			
	IC6	0.802			
Research Mobilization	RM1	0.851	0.949	0.959	0.796
	RM2	0.910			
	RM3	0.913			
	RM4	0.900			
	RM5	0.884			
	RM6	0.893			
	UC1	0.901			
	UC2	0.843			
Unconventionality	UC3	0.887	0.948	0.957	0.762
	UC4	0.931			
	UC5	0.794			
	UC6	0.856			
	UC7	0.901			
	UP1	0.925			
	UP2	0.828			
UP3	0.901				
KC1	0.851				
Knowledge Creation	KC2	0.839	0.975	0.977	0.663
	KC3	0.776			
	KC4	0.760			
	KC5	0.872			
	KC6	0.894			

The results of assessment of reliability and validity indicate that all the items and responding loadings corresponding to the latent constructs meet the threshold which is 0.50 (see Table 1). In addition

to that Cronbach alpha, composite reliability, and average variance extracted meet the threshold value 0.70, 0.70, and 0.50 respectively.

Table 2. Discriminant Analysis

		1	2	3	4	5	6
1	Industrial Collaboration						
2	Knowledge Creation	0.568					
3	Perceived Entrepreneurial Orientation	0.581	0.610				
4	Research Mobilization	0.651	0.495	0.792			
5	Unconventionality	0.814	0.630	0.458	0.814		
6	University Policies	0.875	0.655	0.547	0.822	0.840	

The present study evaluates the discriminant validity based on the HTMT technique (see Table 2). The findings of current study indicate that all the corresponding values of HTMT technique

indicate the values lower than 0.85 hence there is no issue of discriminant validity hence dataset is suitable for testing of hypotheses.

Figure 2. Measurement Model

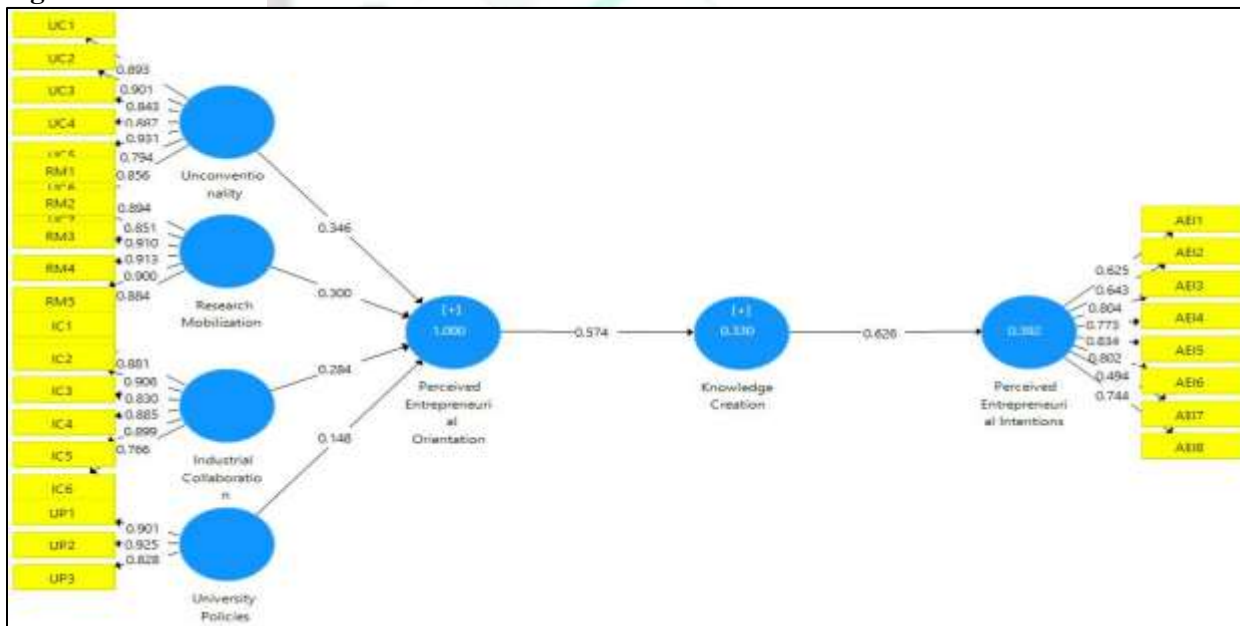


Table 3. Structural Model

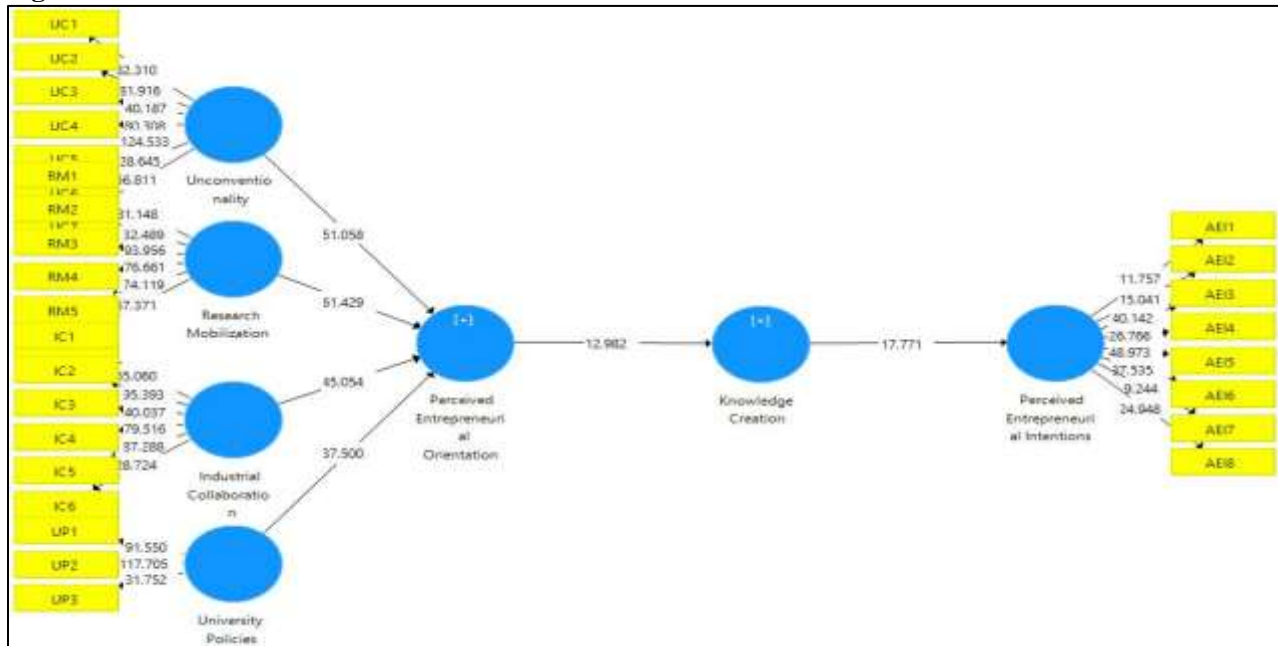
	Coeff.	S.D.	t-value	p-value
Industrial Collaboration -> Perceived Entrepreneurial Orientation	0.284	0.006	45.054	0.000
Unconventionality -> Perceived Entrepreneurial Orientation	0.346	0.007	51.058	0.000
University Policies -> Perceived Entrepreneurial Orientation	0.148	0.004	37.500	0.000
Research Mobilization -> Perceived Entrepreneurial Orientation	0.300	0.005	61.429	0.000
Perceived Entrepreneurial Orientation -> Knowledge Creation	0.574	0.044	12.982	0.000
Knowledge Creation -> Perceived Entrepreneurial Intentions	0.626	0.035	17.771	0.000
Perceived Entrepreneurial Orientation -> Knowledge Creation -> Perceived Entrepreneurial Intentions	0.360	0.043	8.412	0.000

Note: IC= industrial collaboration, UC= Unconventionality, RM= Research mobilization,

UP= university policies, PEO= perceived entrepreneurial orientation, KC= knowledge

creation, and **PEI**= Perceived entrepreneurial intentions.

Figure 3 Structural Model



Findings and Discussion

The findings of the current study reveal several significant insights into the relationships between industrial collaboration, unconventional approaches, supportive university policies, research mobilization, perceived entrepreneurial orientation, knowledge creation, and entrepreneurial intentions. Collaboration with industries has a moderate positive effect on perceived entrepreneurial orientation, underscoring the importance of external partnerships in fostering entrepreneurial mindsets. This finding is significant at the 5% level, with t-statistics greater than 1.96 and p-values less than 0.05. These results align with prior research, which emphasizes the critical role of industrial collaboration in promoting entrepreneurial orientation (Martens et al., 2018).

Moreover, unconventional approaches strongly influence entrepreneurial orientation, suggesting the need for creative and non-traditional methods in fostering entrepreneurial attitudes at 5% level of significance as the value of t-statistics greater than 1.96 and corresponding p-value is less than 0.05. Moreover, prior literature indicates that unconventional approaches for the entrepreneurial

attitudes significantly and positively links with the entrepreneurial orientation hence entrepreneurial attitudes in complex environment need unconventional approaches to follow (Rahimi et al., 2021).

Furthermore, the supportive university policies positively impact entrepreneurial orientation but with a weaker effect compared to other factors at 5% level of significance as the value of t-statistics greater than 1.96 and corresponding p-value are less than 0.05. Earlier literature affirms that the findings of current study which affirms that supportive policies by the universities significantly and positively influence the entrepreneurial orientation among the faculty members in the public and private sector universities (Fichter & Tiemann, 2018). The empirical findings of current study indicate that mobilizing research activities moderately enhances entrepreneurial orientation, highlighting the role of academic research in entrepreneurship at 5% level of significance as the value of t-statistics greater than 1.96 and corresponding p-value is less than 0.05. The empirical findings of current study well aligned with the prior literature which claims that mobilizing significantly and positively associated

with the entrepreneurial orientation (Yang et al., 2019).

The empirical findings of current study reveal that the perceived entrepreneurial orientation significantly and positively associated with the perceived entrepreneurial intentions at 5% level of significance as the value of t-statistics greater than 1.96 and corresponding p-value is less than 0.05. As the entrepreneurial orientation significantly link or increase the chances of entrepreneurial intentions among the faculty members of public and private universities. The finding of current study well aligned with the prior literature which infers that perceived entrepreneurial orientation significantly predict the entrepreneurial intentions among the new venture creators (Hoang et al., 2020).

Moreover, the empirical findings of current study indicate that entrepreneurial orientation strongly drives knowledge creation, suggesting that entrepreneurial thinking fosters innovation and idea generation at 5% level of significance. The findings of current study well aligned with prior literature which affirms that perceived entrepreneurial orientation significantly and positively linked with the perceived entrepreneurial intention (Upadhyay et al., 2023). Knowledge creation is a critical determinant of entrepreneurial intentions, indicating that the ability to generate and apply knowledge motivates individuals toward entrepreneurship at 5% level of significance.

Prior literature supports the empirical findings of current study which claims that knowledge creation significantly predicts the entrepreneurial intentions among the faculty members of public and private universities (Al-Jubari et al., 2019). Furthermore, the empirical findings of current study claims that knowledge creation significantly and positively mediate the relationship between perceived entrepreneurial orientation and perceived entrepreneurial intentions at 5% level of significance. The findings of current research indicate that knowledge creation mediates the relationship between entrepreneurial orientation and entrepreneurial intentions, demonstrating the importance of translating entrepreneurial thinking into actionable knowledge. In addition to that the current study indicates that mediated pathway

through knowledge creation underscores its central role in linking entrepreneurial orientation to intentions.

Conclusions

The underlying objective of current study is to evaluate the role of attributes of perceived entrepreneurial orientation towards the knowledge creation, and perceived entrepreneurial intentions. Furthermore, the present study intent to evaluate the mediating role of knowledge creation between perceived entrepreneurial orientation and perceived entrepreneurial intentions. The present study considered the faculty members of public and private universities as unit of analysis and collected the responses from the individual faculty members of public and private sector universities. The current study used the 392 final responses to evaluate the relationship among the latent constructs. This study used the PLS-SEM technique to evaluate the relationship among the latent constructs. The empirical findings of current study reveals that attributes of perceived entrepreneurial orientation including industrial collaboration, using of unconventional approaches to problem-solving, research mobilization, and universities supportive policies significantly predict the perceived entrepreneurial orientation. Furthermore, the empirical findings of current study indicate that perceived entrepreneurial orientation significantly and positively associated with the perceived entrepreneurial intentions. In addition to that the perceived entrepreneurial orientation significantly and positively associated with the knowledge creation. Moreover, the empirical results of current study indicate that the knowledge creation significantly and positively associated with perceived entrepreneurial intentions. Furthermore, the empirical results indicate that knowledge creation significantly and positively mediate the relationship between perceived entrepreneurial orientation and perceived entrepreneurial intentions.

Implications

The present study outlines the implications for the entrepreneurs, public and private sector universities, policymakers, and regulatory authorities. The universities collaboration with

industries can significantly enhance the chances of entrepreneurial orientation which leads to entrepreneurial intentions among the faculty members. Universities should encourage creative thinking, breaking traditional academic boundaries to foster innovation.

Universities need to adopt the various programs and programs structure to problem solving in unconventional mechanisms that future can stimulate the entrepreneurial orientation among the faculty members. Moreover, the supportive policies of universities can play a vital role in shaping the entrepreneurial mindset among the faculty members. Universities need to design and implement policies that reduce bureaucratic barriers and actively support entrepreneurial initiatives like start-up incubators, funding programs, and intellectual property management. Universities need to focus on the creation of knowledge and prioritize the translational research which can significantly increase commercializing the innovation and entrepreneurial intentions among the faculty members. Universities and regulatory authorities need to understand significance of entrepreneurial orientation, knowledge creation, and should develop a strong entrepreneurial culture which stimulates the entrepreneurial intentions among the faculty members.

Limitations and future directions

Despite the multi-fold contributions, the present study subject to some limitations. The present study considered the perceived entrepreneurial orientation as only predictor hence, future studies need to consider the role of other predictors like entrepreneurial thinking, organizational culture, and further can test the role of other latent constructs. The present study considered the mediating role of knowledge creation however future studies need to consider the other latent construct as mediating factor, in addition to that future studies also incorporate some mediating or moderating variable to improve the predicating power of model.

REFERENCES

- Abdelrady, A. H., & Akram, H. (2022). An empirical study of ClassPoint tool application in enhancing EFL students' online learning satisfaction. *Systems, 10*(5), 154.
- Abou-Warda, S. H. (2015). A standardized marketing audit model for entrepreneurship education in Egypt. *International Journal of Service Science, Management, Engineering, and Technology (IJSSMET), 6*(1), 75-92.
- Akram, H., & Abdelrady, A. H. (2023). Application of ClassPoint tool in reducing EFL learners' test anxiety: an empirical evidence from Saudi Arabia. *Journal of Computers in Education, 1*-19. <https://doi.org/10.1007/s40692-023-00265-z>
- Akram, H., & Li, S. (2024). Understanding the Role of Teacher-Student Relationships in Students' Online learning Engagement: Mediating Role of Academic Motivation. *Perceptual and Motor Skills, 00315125241248709*.
- Akram, H., & Sohail, A. (2024). Role of Goal-Setting and Planning on Students' academic Performance of Computational Mathematics: A Bayesian Inference Approach. *Educational Research and Innovation, 4*(4), 13-22.
- Akram, H., & Yang, Y. (2021). A critical analysis of the weak implementation causes on educational policies in Pakistan. *International Journal of Humanities and Innovation (IJHI), 4*(1), 25-28. <http://dx.doi.org/10.33750/ijhi.v4i1.104>
- Akram, H., (2020). Education Governance in Pakistan: A Critical Analysis of Challenges. *Journal of Social Sciences Advancement, 1*(1), 38-41. <http://dx.doi.org/10.52223/JSSA20-010105-05>

- Akram, H., Abdelrady, A. H., Al-Adwan, A. S., & Ramzan, M. (2022). Teachers' perceptions of technology integration in teaching-learning practices: A systematic review. *Frontiers in psychology, 13*, 920317.
- Akram, H., Yingxiu, Y., Al-Adwan, A. S., & Alkhalifah, A. (2021). Technology Integration in Higher Education During COVID-19: An Assessment of Online Teaching Competencies Through Technological Pedagogical Content Knowledge Model. *Frontiers in Psychology, 12*, 736522-736522. <https://doi.org/10.3389/fpsyg.2021.736522>
- Al-Adwan, A. S., Nofal, M., Akram, H., Albelbisi, N. A., & Al-Okaily, M. (2022). Towards a sustainable adoption of e-learning systems: The role of self-directed learning. *Journal of Information Technology Education: Re-search, 21*, 245-267.
- Al-Jubari, I., Hassan, A., & Liñán, F. (2019). Entrepreneurial intention among University students in Malaysia: Integrating self-determination theory and the theory of planned behavior. *International Entrepreneurship and Management Journal, 15*(4), 1323-13.
- Al-Omoush, K. S., Simón-Moya, V., & Sendra-García, J. (2020). The impact of social capital and collaborative knowledge creation on e-business proactiveness and organizational agility in responding to the COVID-19 crisis. *Journal of Innovation & Knowledge, 5*(4), 279-288.
- Al-Omoush, K. S., Simón-Moya, V., & Sendra-García, J. (2020). The impact of social capital and collaborative knowledge creation on e-business proactiveness and organizational agility in responding to the COVID-19 crisis. *Journal of Innovation & Knowledge, 5*(4), 279-288.
- Alsafadi, Y., & Aljuhmani, H. Y. (2024). The influence of entrepreneurial innovations in building competitive advantage: the mediating role of entrepreneurial thinking. *Kybernetes, 53*(11), 4051-4073.
- Al-Tabbaa, O., & Ankrah, S. (2019). 'Engineered' university-industry collaboration: A social capital perspective. *European Management Review, 16*(3), 543-565.
- Arabeche, Z., Soudani, A., Brahmi, M., Aldieri, L., Vinci, C. P., & Abdelli, M. E. A. (2022). Entrepreneurial orientation, organizational culture and business performance in SMEs: Evidence from emerging economy. *Sustainability, 14*(9), 5160.
- Balven, R., Fenters, V., Siegel, D. S., & Waldman, D. (2018). Academic entrepreneurship: The roles of identity, motivation, championing, education, work-life balance, and organizational justice. *Academy of Management Perspectives, 32*(1), 21-42.
- Bird, B., Welsch, H., Astrachan, J. H., & Pistrui, D. (2002). Family business research: The evolution of an academic field. *Family business review, 15*(4), 337-350.
- Blair, C. A., & Shaver, K. G. (2020). Of horses and jockeys: Perceptions by academic entrepreneurs. *Entrepreneurship Research Journal, 10*(2), 1-21.
- Cerver Romero, E., Ferreira, J. J., & Fernandes, C. I. (2021). The multiple faces of the entrepreneurial university: A review of the prevailing theoretical approaches. *The Journal of Technology Transfer, 46*(4), 1173-1195.
- Chang, Y. C., Yang, P. Y., & Chen, M. H. (2009). The determinants of academic research commercial performance: Towards an organizational ambidexterity perspective. *Research Policy, 38*(6), 936-946.
- Chen, S. C., Hsiao, H. C., Chang, J. C., Chou, C. M., Chen, C. P., & Shen, C. H. (2015). Can the entrepreneurship course improve the entrepreneurial intentions of students? *International Entrepreneurship and Management Journal, 11*(3), 557-569.
- Collis, J., & Hussey, R. (2014). Writing up the Research. In *Business Research* (pp. 297-330). Palgrave, London.

- Diáñez-González, J. P., Camelo-Ordaz, C., & Fernández-Alles, M. (2021). Drivers and implications of entrepreneurial orientation for academic spin-offs. *International Entrepreneurship and Management Journal*, 17(2), 1007-1035.
- Duong, C. D. (2022). Exploring the link between entrepreneurship education and entrepreneurial intentions: the moderating role of educational fields. *Education+ Training*, 64(7), 869-891.
- Eseryel, U. Y., Bakker, D., & Eseryel, D. (2014). Information technology self-leadership and its influence on team level product and process innovation. *Journal of Leadership and Management*, 2, 95-109.
- Feola, R., Parente, R., & Cucino, V. (2021). The entrepreneurial university: How to develop the entrepreneurial orientation of academia. *Journal of the Knowledge Economy*, 12, 1787-1808.
- Fichter, K., & Tiemann, I. (2018). Factors influencing university support for sustainable entrepreneurship: Insights from explorative case studies. *Journal of Cleaner Production*, 175, 512-524.
- Garaika, G., Margahana, H. M., & Negara, S. T. (2019). Self-efficacy, self-personality and self-confidence on entrepreneurial intention: study on young enterprises. *Journal of Entrepreneurship Education*, 22(1), 1-12.
- Guerrero, M., Urbano, D., Fayolle, A., Klofsten, M., & Mian, S. (2016). Entrepreneurial universities: emerging models in the new social and economic landscape. *Small Business Economics*, 47, 551-563.
- Guidolin, K., Wexner, S. D., Jung, F., Khan, S., Deng, S. X., Kirubarajan, A., ... & Chadi, S. (2021). Strengths and weaknesses in the methodology of survey-based research in surgery: A call for standardization. *Surgery*, 170(2), 493-498.
- Hasanah, U., Sukoco, B. M., Supriharyanti, E., & Wu, W. Y. (2023). Fifty years of artisan entrepreneurship: a systematic literature review. *Journal of Innovation and Entrepreneurship*, 12(1), 46.
- Hayter, C. S., Nelson, A. J., Zayed, S., & O'Connor, A. C. (2018). Conceptualizing academic entrepreneurship ecosystems: A review, analysis and extension of the literature. *The Journal of Technology Transfer*, 43, 1039-1082.
- Hisrich, R. D., Peters, M. P., & Shepherd, D. A. (2017). *Entrepreneurship*. McGraw-Hill Education.
- Hoang, G., Le, T. T., Tran, A. T., & Du, T. (2020). Entrepreneurship education and entrepreneurial intentions of university students in Vietnam: The mediating roles of self-efficacy and learning orientation. *Education+ Training*, 63(1), 115-133.
- Huyghe, A., & Knockaert, M. (2016). The relationship between university culture and climate and research scientists' spin-off intentions. *University evolution, entrepreneurial activity and regional competitiveness*, 3-26.
- James, L. R., Choi, C. C., Ko, C. H. E., McNeil, P. K., Minton, M. K., Wright, M. A., & Kim, K. I. (2008). Organizational and psychological climate: A review of theory and research. *European Journal of work and organizational psychology*, 17(1), 5-32.
- Kalar, B., & Antoncic, B. (2015). The entrepreneurial university, academic activities and technology and knowledge transfer in four European countries. *Technovation*, 36, 1-11.
- Khanam, L., Akram, H., & Kamran, M. (2022). Parental Expectations and Students' Academic Interests: A Case Study of the Islamia University of Bahawalpur, Pakistan. *Pakistan Journal of Social Sciences*, 42(1), 61-70.
- Kiyabo, K., & Isaga, N. (2020). Entrepreneurial orientation, competitive advantage, and SMEs' performance: application of firm growth and personal wealth measures. *Journal of Innovation and Entrepreneurship*, 9(1), 12.

- Klenner, N. F., Gemser, G., & Karpen, I. O. (2022). Entrepreneurial ways of designing and designerly ways of entrepreneuring: Exploring the relationship between design thinking and effectuation theory. *Journal of Product Innovation Management*, 39(1), 66-94.
- Konno, N., & Schillaci, C. E. (2021). Intellectual capital in Society 5.0 by the lens of the knowledge creation theory. *Journal of Intellectual Capital*, 22(3), 478-505.
- Li, S., & Akram, H. (2023). Do emotional regulation behaviors matter in EFL teachers' professional development?: A process model approach. *Porta Linguarum: revista internacional de didáctica de las lenguas extranjeras*, (9), 273-291.
- Li, S., & Akram, H. (2024). Navigating Pronoun-Antecedent Challenges: A Study of ESL Academic Writing Errors. *SAGE Open*, 14(4), 21582440241296607. <http://dx.doi.org/10.1177/21582440241296607>
- Ma, D., Akram, H., & Chen, I. H. (2024). Artificial Intelligence in Higher Education: A Cross-Cultural Examination of Students' Behavioral Intentions and Attitudes. *The International Review of Research in Open and Distributed Learning*, 25(3), 134-157.
- Martens, C. P., Machado, F. J., Martens, M. L., & de Freitas, H. R. (2018). Linking entrepreneurial orientation to project success. *International Journal of Project Management*, 36(2), 255-266.
- Miranda, F. J., Chamorro-Mera, A., & Rubio, S. (2017). Academic entrepreneurship in Spanish universities: An analysis of the determinants of entrepreneurial intention. *European Research on Management and Business Economics*, 23(2), 113-122.
- Nani, G. V. (2016). Entrepreneurial education in the school curriculum: in search of positioning in Zimbabwe. *Problems and Perspectives in Management*, 14(3), 85-90.
- Neneh, B. N. (2019). Customer orientation and performance of women-owned businesses: a configurational approach. *Journal of Small Business Management*, 57, 218-243.
- Nguyen, T. T. (2020). The impact of access to finance and environmental factors on entrepreneurial intention: The mediator role of entrepreneurial behavioural control. *Entrepreneurial Business and Economics Review*, 8(2), 127-140.
- Noor, N., Akram, H., & Kamran, M. (2021). Preferred reasons in selecting teaching profession as a life career: a case study of pre-service teachers. *Pakistan Journal of Educational Research*, 4(1).
- Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Czeplédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 44(2), 361-379.
- O'Shea, G., Farny, S., & Hakala, H. (2021). The buzz before business: A design science study of a sustainable entrepreneurial ecosystem. *Small Business Economics*, 56, 1097-1120.
- Obschonka, M., Moeller, J., & Goethner, M. (2019). Entrepreneurial passion and personality: the case of academic entrepreneurship. *Frontiers in Psychology*, 9, 2697.
- Ozgul, U., & Kunday, O. (2015). Conceptual development of academic entrepreneurial intentions scale. *Procedia-Social and Behavioral Sciences*, 195, 881-887.
- Paoloni, M., Coluccia, D., Fontana, S., & Solimene, S. (2020). Knowledge management, intellectual capital and entrepreneurship: a structured literature review. *Journal of Knowledge Management*, 24(8), 1797-1818.
- Peschl, H., Deng, C., & Larson, N. (2021). Entrepreneurial thinking: A signature pedagogy for an uncertain 21st century. *The International Journal of Management Education*, 19(1), 100427.

- Rahimi, N. Z., Rasul, M. S., Yassin, R. M., Rauf, R. A., Zulnaidi, H., & Wegner, D. (2021). Analyzing the influence of the environmental factors, entrepreneurial orientation and entrepreneurship practices on vocational entrepreneurial teaching practices. *Revista Argentina de Clínica Psicológica*, 30(1), 477.
- Riviezzo, A., Santos, S. C., Liñán, F., Napolitano, M. R., & Fusco, F. (2019). European universities seeking entrepreneurial paths: The moderating effect of contextual variables on the entrepreneurial orientation-performance relationship. *Technological Forecasting and Social Change*, 141, 232-248.
- Şahin, F., Karadağ, H., & Tuncer, B. (2019). Big five personality traits, entrepreneurial self-efficacy and entrepreneurial intention: A configurational approach. *International Journal of Entrepreneurial Behavior & Research*, 25(6), 1188-1211.
- Scuotto, V., Lemaire, S. L. L., Magni, D., & Maalaoui, A. (2022). Extending knowledge-based view: Future trends of corporate social entrepreneurship to fight the gig economy challenges. *Journal of Business Research*, 139, 1111-1122.
- Todorovic, Z. W., McNaughton, R. B., & Guild, P. (2011). ENTRE-U: An entrepreneurial orientation scale for universities. *Technovation*, 31(2-3), 128-137.
- Umar, M., Congman, R., & Akram, H. (2024). The role of perceived entrepreneurial thinking towards academic entrepreneurial intentions: moderating role of entrepreneurial environment. *EDUCATIONAL RESEARCH AND INNOVATION*, 4(04), 40-54.
- Upadhyay, N., Upadhyay, S., Al-Debei, M. M., Baabdullah, A. M., & Dwivedi, Y. K. (2023). The influence of digital entrepreneurship and entrepreneurial orientation on intention of family businesses to adopt artificial intelligence: examining the mediating role of business innovativeness. *International Journal of Entrepreneurial Behavior & Research*, 29(1), 80-115.
- Von Krogh, G., Nonaka, I., & Rechsteiner, L. (2012). Leadership in organizational knowledge creation: A review and framework. *Journal of management studies*, 49(1), 240-277.
- Wright, M., & Phan, P. (2018). The commercialization of science: From determinants to impact. *Academy of Management Perspectives*, 32(1), 1-3.
- Yang, H., Dess, G. G., & Robins, J. A. (2019). Does entrepreneurial orientation always pay off? The role of resource mobilization within and across organizations. *Asia Pacific Journal of Management*, 36, 565-591.
- Yemenici, A. D. (2022). Entrepreneurship in the world of Metaverse: Virtual or real?. *Journal of Metaverse*, 2(2), 71-82.
- Yukongdi, V., & Lopa, N. Z. (2017). Entrepreneurial intention: a study of individual, situational and gender differences. *Journal of Small Business and Enterprise Development*, 24(2), 333-352.
- Zeiger, S. J. (2021). Measuring and modeling event-based environmental flows: An assessment of HEC-RAS 2D rain-on-grid simulations. *Journal of Environmental Management*, 285, 112-125.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage learning.
- Zimmerman, M. A. (1995). Psychological empowerment: Issues and illustrations. *American journal of community psychology*, 23, 581-599.