An Empirical Study On The Entrepreneurial Mindset Of Kocaeli Youth
Kocaeli Gençliğinin Girişimci Zihniyeti Üzerine Ampirik Bir İnceleme

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Abstract

This paper explores the entrepreneurial orientations of Kocaeli youth, focusing on gender, academic discipline, and academic performance; through a study conducted at the students of Kocaeli University. The findings reveal significant gender disparities in entrepreneurial orientations, with women showing higher levels of risk-taking and innovativeness compared to men. Additionally, variations in entrepreneurial orientation across academic disciplines were observed, with students in Economics and Business Administration displaying higher innovativeness levels. Surprisingly, no significant relationship was found between academic performance and entrepreneurial orientations. The results of this study suggest implications for entrepreneurship education and policy, emphasizing tailored approaches to education, addressing gender disparities, and integrating entrepreneurship into curricula.

Keywords: ***Kocaeli Youth, Entrepreneurial Mindset, Entrepreneurship, Youth.***

Öz

Bu çalışma kapsamında, Kocaeli gençliğinin girişimcilik eğilimi; Kocaeli Üniversitesi öğrencileri üstünde gerçekleştirilen bir çalışma aracılığıyla, cinsiyet, akademik disiplin ve akademik performans noktalarından incelemektedir. Bulgular, girişimcilik eğilimleri bazında önemli cinsiyet farklılıklarını ortaya koymakta olup, kadınların erkeklere kıyasla daha yüksek risk alma ve yenilikçilik düzeyleri sergilediklerini göstermektedir. Bununla birlikte, girişimcilik yöneliminde akademik disiplinler arasında farklılıklar gözlemlenmiş olup, İktisadi ve İdari Bilimler öğrencilerinin daha yüksek yenilikçilik seviyeleri sergilediği belirlenmiştir. Beklenenin aksine, akademik performans ile girişimcilik eğilimi arasında anlamlı bir ilişki bulunmamıştır. Bu çalışmanın sonuçları; girişimcilik eğitimi ve politikaları için çeşitli öneriler sunmakta, eğitimde özelleştirilmiş yaklaşımların, cinsiyet farklılıklarının ele alınmasının ve girişimciliğin müfredatlara entegre edilmesinin önemini vurgulamaktadır.

Anahtar Kelimeler: Kocaeli Gençliği, Girişimci Zihniyet, Girişimcilik, Gençlik.

1. Introduction

In recent years, scholarly discourse has increasingly highlighted the transformative role of entrepreneurship in stimulating employment and driving economic development, shifting the traditional association of Entrepreneurial Orientation (EO) solely within organizational contexts (Mari et al., 2016; Song and Winkler, 2014; Tödtling and Trippl, 2005; Gorostiaga et al., 2019). This recognition underscores entrepreneurship as a fundamental pillar in local and global market economies, significantly shaping their dynamics and outcomes (Díaz-García et al., 2015; Lindh and Thorgren, 2016; Marques et al., 2018). Moreover, developing entrepreneurial capacities among citizens and organizations has emerged as a critical political agenda for entities such as the European Union and its Member States, with entrepreneurial competence now officially recognized as one of the eight essential competencies for lifelong learning (European Commission, 2019). Aligned with this global trend, the 12th Development Plan of Turkey for 2024-2028 has identified "entrepreneurship and SMEs" as a strategic sector, with a particular emphasis on fostering entrepreneurship (https://onikinciplan.sbb.gov.tr/). This policy focus underscores the crucial role of entrepreneurship in driving economic growth and innovation within national contexts.

The entrepreneurial ecosystem within universities serves as a fertile ground for individual student development and broader economic advancement and innovation. Understanding the EOs of university students holds the potential to cultivate an entrepreneurial culture that benefits individuals, organizations, and society at large (Bacigalupo et al., 2016). Frank et al. (2005) highlight the significant influence of educational processes on EO development, emphasizing the need to cultivate entrepreneurial mindsets among students. In today's dynamic and competitive business environment, nurturing EOs among university students is imperative. With the escalating demand for innovative thinking and entrepreneurial skills, students must acquire theoretical knowledge and gain practical experience in entrepreneurial endeavors to thrive in the evolving landscape of global entrepreneurship.

However, variations in students' perspectives on entrepreneurship are evident within academic settings. While some students aspire to entrepreneurial careers, others hold negative perceptions of entrepreneurship, attributing societal challenges to it (Engle et al., 2010; Taatila and Down, 2012).

Previous research has revealed disparities in EO across academic disciplines. Scholars such as Abou-Warda (2016) and Chen et al. (1998) argue that individuals with entrepreneurship education exhibit higher entrepreneurial intentions or enhanced self-efficacy in entrepreneurial tasks. Moreover, different vocational populations exhibit distinct working cultures, influencing student cohorts (Knafo and Sagiv, 2001; Sagiv, 2002; Myyry and Helkama, 2001). These disparities extend to the inclination toward entrepreneurship, with business administration students demonstrating heightened EO compared to peers in other disciplines (Franco et al., 2010). Notably, creative arts and design courses boast the highest rates of self-employment (Tackey and Perryman, 1999; Taatila and Down, 2012).

Against this backdrop, this paper aims to explore the EOs of university students, examining the factors shaping their entrepreneurial mindset and skills. Through this examination, we seek to illuminate pathways for cultivating a new generation of entrepreneurial leaders capable of driving economic growth and fostering innovation. This endeavor aligns with the current emphasis on nurturing young entrepreneurs among university graduates, equipping them with the necessary skills to create job opportunities. With these objectives in mind, the present study aims to:

i-) Compare students' EO across gender and academic disciplines, and

ii-) Investigate the association between students' EO and academic success.

2. Theoretical Background And Hypothesis Development

2.1. Entrepreneurial Orientation

EO is a pivotal concept at both the organizational and firm levels, encompassing the strategic processes that underpin an organization's entrepreneurial decisions and actions (Rauch et al., 2009; Lyon et al., 2000). It is characterized as "a firm's strategic posture towards entrepreneurship," reflecting its transformative nature aimed at achieving competitive superiority (Anderson et al., 2015; Rauch et al., 2009; Dess and Lumpkin, 2005). EO entails critical adjustments, practices, decisions, and procedures to foster entrepreneurial actions and enhance organizational goals and effectiveness (Rauch et al., 2009; Sabahi and Parast, 2020). Through its competitive, independent, proactive, risk-taking, and innovative structure, EO serves as a conduit for sustainable competitive advantage (Covin and Wales, 2019; Rauch et al., 2009; Dess and Lumpkin, 2005).

Despite being originally conceptualized as a construct at the firm level, recent studies suggest that EO can also be considered as an individual-level construct (Robinson and Stubberud, 2014). When examining the EO of individuals, the central inquiry revolves around identifying the personal characteristics or attitudes that predispose individuals to engage in and excel at entrepreneurial endeavors. Trait research on individuals and their inclination towards entrepreneurial activities gained prominence in the 1980s and 1990s, stemming from personality trait research (Lane and Bolton, 2012). For example, Zhao et al. (2011) highlighted openness to experience and conscientiousness as two personality traits associated with entrepreneurial intentions. Harris and Gibson (2008) identified personal control, innovation, self-esteem, and achievement as fundamental attitudes conducive to entrepreneurship.

Various researchers investigating students utilized diverse measures to assess entrepreneurial attitudes, often incorporating a blend of attitude and trait measures, frequently referencing risk-taking and innovativeness (Domke-Damonte et al., 2008; Levenburg and Schwarz, 2008; Macko and Tyszka, 2009). However, some scholars (e.g., Covin & Lumpkin, 2011; Lane and Bolton, 2012) argue that EO at the individual level reflects dispositional elements. Nonetheless, a behavioral perspective suggests that EO primarily manifests through observable actions rather than inherent psychological profiles (Covin & Lumpkin, 2011). Lane and Bolton (2012) contends that entrepreneurs can be recognized by their actions rather than their traits. This behavioral perspective conceptualizes EO at the individual level as comprising personal characteristics or tendencies that predispose individuals to engage in entrepreneurial activities, particularly in terms of innovativeness, proactiveness, and risk-taking (Kurniawan et al., 2019):

1. **Innovativeness:** Indicates an individual's inclination to introduce novel ideas, products, or services, demonstrating a willingness to challenge existing norms and seek innovative solutions.

2. **Proactiveness:** Refers to the degree to which individuals are proactive in identifying and seizing opportunities, displaying forward-thinking behavior, and taking initiative to effect change.

3. **Risk-taking propensity:** Signifies the willingness to undertake calculated risks in pursuit of entrepreneurial objectives, encompassing a tolerance for uncertainty and a readiness to accept potential failure.

2.2. Gender in Relation to Individual Entrepreneurial Orientation

In recent years, there has been a growing emphasis on exploring the determinants of EO among students, with a particular focus on understanding the impact of gender on this phenomenon. Research investigating the relationship between gender and EO has emerged as a significant area of study, recognizing gender as a salient demographic factor that influences individuals' inclination towards entrepreneurship (Goktan and Gupta, 2015). Gender, intricately linked with self-perception, plays a pivotal role in shaping the EO of both men and women (Covin and Miller, 2014).

However, findings regarding gender differences in EO are mixed. Some studies suggest that men exhibit higher levels of EO compared to women (e.g., Bilić et al., 2011; Kee & Rahman, 2018), while others fail to identify significant gender disparities (e.g., Hunt, 2016; Ogunleye & Osagu, 2014). Moreover, among studies that do report gender differences, variations are observed across different dimensions of EO. For example, many studies indicate that men tend to score higher than women in measures of innovation (Kee & Rahman, 2018; Reyes et al., 2014). Furthermore, research conducted by Marques et al. (2018) and Baliyan & Baliyan (2018) among university students underscores the influential role of gender in shaping EO, highlighting distinct inclinations and tendencies among male and female students. Hence;

H1: The level of EO a) risk taking, b) innovativeness, and c) proactiveness, among university students varies by gender.

2.3. Academic Discipline in Relation to Individual Entrepreneurial Orientation

Concurrently, earlier research has identified significant variations in EOs across different academic disciplines among university students, reflecting the diverse working cultures prevalent in vocational populations. For example, Franco et al. (2010) found that students in business administration exhibit notably higher entrepreneurial tendencies than their peers in other fields, while Tackey and Perryman (1999) observed heightened self-employment rates among students in creative arts and design courses. Moreover, the formation of individual EO (IEO) is intricately linked to entrepreneurial education, with competencies such as innovativeness, risk-taking, and proactiveness recognized as pivotal in shaping students' entrepreneurial mindsets (Bolton and Lane, 2012; Koe, 2016; Covin et al., 2020; Santos et al., 2020; Howard, 2020).

Institutional factors and cultural context also play crucial roles in shaping EO among university students. Business schools are increasingly acknowledged as pivotal institutions for fostering knowledge-based entrepreneurship (Lee and Peterson, 2000). Nevertheless, variations in the extent of entrepreneurial studies across different cultural contexts and disparities between universities and their departments have been identified as influential factors shaping EO (Lee et al., 2005). Despite recent recognition of the impact of cultural differences on EO, there still needs to be a gap in comprehensively exploring this aspect (Abou-Warda, 2015). Addressing this gap is imperative for designing tailored entrepreneurial education programs that account for the unique cultural and institutional contexts of diverse academic disciplines, thereby cultivating an environment conducive to entrepreneurial development among university students. Hence;

H2: The level of EO a) risk taking, b) innovativeness, and c) proactiveness, among university students varies by academic discipline.

2.4. Academic Performance in Relation to Individual Entrepreneurial Orientation

The relationship between university students' academic performance and their EOs represents a crucial area of inquiry, holding significant implications for educational policy and the development of entrepreneurial ecosystems. Despite its importance, relatively few studies have directly investigated the association between EO (EO) and academic performance. Phelan et al. (2013) observed a positive correlation between academic performance and traits such as proactiveness, innovativeness, and autonomy. Conversely, Rivai et al. (2018) reported a positive correlation between academic performance and EO, while Ramesh et al. (2018) found an inverse relationship between these variables. Additionally, Rivai et al. (2018) highlighted the significant impact of students' academic performance on their EO. Similarly, Gorostiaga et al. (2023) noted that students with higher academic grades exhibited higher levels of EO compared to their lower-performing peers.

Despite these scattered findings, there remains a notable gap in empirical research on this topic, highlighting the need for further investigation. Thus, our study aims to address this gap by examining how the EO acquired by students is associated with their academic grades. Through this inquiry, we seek to provide valuable insights into the interplay between entrepreneurial mindset development and academic achievement, contributing to a deeper understanding of the factors influencing both student success and entrepreneurial endeavors. Hence;

H3: There is a significant relationship between the level of EO a) risk taking, b) innovativeness, and c) proactiveness, among university students and their academic performance.

3. Methodology

3.1. Design and Participants

Research data were collected at Kocaeli University, with the initial step involving contacting student clubs to inform their representatives about the study's aims, objectives, and data utilization, thereby ensuring ethical compliance. The online survey was then emailed to the club representatives, who subsequently disseminated the survey link to their members via social media platforms such as WhatsApp, Instagram, or Facebook. A total of 291 participants completed the survey. Subsequently, incomplete responses lacking essential data were excluded from the analysis, resulting in 287 valid responses for further examination.

Analysis of the demographic profile of the participants, who were sampled via convenience sampling, revealed that the majority, constituting 56.1% (n = 161), were female, with an average age of 19 (±0.87). Furthermore, 32.4% (n = 93) of the participants were affiliated with medical-related faculties or vocational schools, such as medicine faculty, dentistry faculty, and nursing school, while 71 participants belonged to the engineering faculty. Additionally, 23.3% (n = 67) were from the Faculty of Economics and Business Administration, with the remaining 19.5% representing other faculties. Only 20.6% of the participants (n = 59) reported having an actual work experience, and 15% (n = 43) indicated having an entrepreneur parent in their family.

3.2. Measures

To assess the EOs of university students, a ten-item EO scale was utilized, developed by Lane and Bolton (2012). This scale comprises three dimensions: risk-taking, innovativeness, and proactivity. Innovativeness encompasses four questions, while risk-taking and proactivity consist of three questions each. Representative items include "I tend to act 'boldly' in situations where risk is involved" (e.g., risk-taking), "I prefer to try my own unique way when learning new things rather than doing it like everyone else does" (e.g., innovativeness), and "I usually act in anticipation of future problems, needs, or changes" (e.g., proactivity).

Moreover, in order to evaluate the academic performance of university students, participants were requested to furnish their overall grade point (GPO), measured on a 100-point scale.

3.3. Reliability And Validity

A principal factor analysis was conducted on the items to discern the underlying dimensions of the instrument. (see Table 1) Bartlett's test of sphericity, yielding a value of 1.19E3 ($p < 0.01$), and the computation of Kaiser-Meyer-Olkin statistics, indicating a value of 0.86, affirmed the suitability of the data for factor analysis. Considering the distribution of the Scree-plot, principal component factors with eigenvalues equal to or exceeding one underwent rotation through varimax analysis. The analysis of approximately ten items resulted in three distinct factor groupings, elucidating 68% of the total variance. The factor loading, with the lowest value at 0.59, suggests a robust correlation between the items and their corresponding factor groupings.

Table 1. *Factor analysis of EO*

	Component		
	1	2	3
Innovativeness			
inno 1	,691		
inno 2	,669		
inno 3	,849		
inno 4	,785		
Risk taking			
rt1			,758
rt2			,750
rt3			,718
Proactivity			
p1		,590	
p2		,864	
p3		,803	

The primary factor, identified as innovativeness, encompasses four items, elucidating 24.97% of the total variance. The secondary factor, termed risk-taking, comprises three items, explaining 22.08% of the total variance. The tertiary factor, denoted as proactivity, encompasses three items, clarifying 21.29% of the total variance.

Furthermore, Cronbach's alpha coefficient was employed to assess the internal consistency of our measures. The results of the alpha test indicate an alpha coefficient of 0.785 for innovativeness, 0.796 for risk-taking, and 0.778 for proactivity.

3.4. Hypothesis Tests

T-tests and ANOVAs were employed to ascertain discrepancies in means for EO (EO) concerning both gender and academic discipline. Initially, an independent samples t-test was conducted to assess potential disparities in EO levels based on gender (refer to Table 2).

The outcomes of the independent samples t-test revealed significant differences in the scores for both risk-taking ($p < 0.05$) and innovativeness ($p < 0.01$) among participants based on gender. However, the results did not yield empirical evidence supporting a statistically significant difference in proactivity levels across genders. So H1a and H1b are supported while H1 c is not. Notably, the findings indicate that women tend to exhibit higher scores in both risk-taking and innovativeness compared to men.

Table 2. *T-test results*

EO	Mean		t	P
	Female	Male		
Risk taking	3,7840	3,6161	1.978	0.047
Innovativeness	3,6268	3,2293	3.857	0.000
Proactivity	4,0305	4,046	0.171	0.864

Subsequently, ANOVA was employed to investigate mean disparities across various academic disciplines. Specifically, the examination focused on the association between the level of innovativeness within EO and academic discipline, revealing statistically significant relationships. So H2b is supported while H2a and H2c are not.

To further dissect the differences in means, a post-hoc LSD test was utilized. This test aimed to discern variations in means among students categorized into four groups: i) medical-related faculties or vocational schools (e.g., Medicine Faculty, Dentistry Faculty, Nursing School), ii) Engineering Faculty, iii) Faculty of Economics and Business Administration, and iv) others.

Table 3. *ANOVA results*

		Sum of squares	df	Mean square	F-ratio	Sign.	Mean	Post-hoc Analysis (LSD) 1	2	3	4
Risk-taking	Between groups	0.382	3	0.127	0.174	0.914	1= 3.7133				
	Within groups	206.65	283	0.73			2= 3.6368				
	Total	207.03	286				3= 3.7371				
							4= 3.7024				
Innovativeness	Between groups	13.502	3	4.501	5.907	0.001	1= 3.6694		**	*	
	Within groups	215.61	283	0.762			2= 3.0821	**		*	*
	Total	229.11	286				3= 3.4085	*	*		
							4= 3.4554	*			
Proactivity	Between groups	2.514	3	0.838	1.448	0.229	1= 3.9713				
	Within groups	163.84	283	0.579			2= 4.1493				
	Total	166.36	286				3= 4.1174				
							4= 3.9167				

Table 3 presents the results of the one-way ANOVA comparison alongside the post-hoc multiple comparison tests (LSD). The analysis reveals notable findings:

- The mean innovativeness scores for students in medical faculties and related schools were significantly lower than those for students in the Faculty of Economics and Business Administration and even Engineering Faculty.
- Conversely, students in the Faculty of Economics and Business Administration exhibited significantly higher innovativeness scores compared to all other student groups.
- Engineering students displayed statistically higher innovativeness scores than medical students; however, their scores were lower than those of students in the Faculty of Economics and Business Administration.
- The remaining students demonstrated statistically lower innovativeness scores compared to those in the Faculty of Economics and Business Administration.

Not: **: p<0.01, *: p<0.05, 1: students of faculty of economics and business aAdministration, 2: students of medical-related faculties or vocational schools, 3: students of engineering faculty, and 4: others

A correlation analysis was additionally carried out to investigate the interrelationships between the academic performance of university students and the dimensions of EO (EO), namely risk-taking, innovativeness, and proactivity. The findings of the Pearson correlation analysis yielded no empirical evidence supporting a correlation between any dimension of EO and academic performance. Consequently, H3 is not substantiated.

Table 4. *Correlation analyses*

Relationship	r	P
Risk-taking<-->Academic perf.	0.007	0.907
Innovativeness<-->Academic perf.	0.013	0.826
Proactivity<-->Academic perf.	-0.007	0.901

4. Discussion

This paper provides valuable insights into university students' EOs (EO), with a particular focus on gender, academic discipline, and academic performance. By examining factors that influence students' entrepreneurial mindsets and skills, the study contributes to understanding how universities can foster entrepreneurship among their student populations. Here, we discuss the essential findings and implications of the research.

First, we examine the role of gender for EO within university students. The results show significant differences in EOs between male and female students. Specifically, women tended to exhibit higher risk-taking and innovativeness levels than men. This finding challenges traditional stereotypes and underscores the importance of addressing gender disparities in entrepreneurial education and support programs. By recognizing and encouraging the entrepreneurial potential of all students, regardless of gender, universities can contribute to creating a more inclusive and diverse entrepreneurial ecosystem.

Second, this research also revealed variations in EOs across different academic disciplines. Students in the Faculty of

Economics and Business Administration demonstrated significantly higher levels of innovativeness than students in other fields. This finding highlights the influence of educational and institutional factors on students' entrepreneurial mindsets. Tailoring entrepreneurship education programs to suit the unique characteristics and needs of students in diverse academic disciplines can enhance their entrepreneurial capabilities and foster a culture of innovation across the university.

Finally, contrary to expectations, the study did not find a significant relationship between students' academic performance and EOs. Academic success may not necessarily correlate with entrepreneurial mindset development. However, further research is needed to explore the complex interplay between academic achievement and entrepreneurial behavior among university students.

4.1. Implications for Entrepreneurship Education and Policy

The findings of this study have several implications for entrepreneurship education and policy. First, universities should adopt tailored approaches to entrepreneurship education that consider students' diverse backgrounds, interests, and aspirations across different disciplines. Universities can better prepare students for entrepreneurial careers and endeavors by providing interdisciplinary and experiential learning opportunities.

Second, initiatives aimed at promoting entrepreneurship should actively address gender disparities and encourage the participation of underrepresented groups in entrepreneurship. This may involve implementing mentorship programs, networking opportunities, and financial support mechanisms specifically designed for women and other marginalized groups.

Third, policymakers and university administrators should prioritize integrating entrepreneurship education into the curriculum and co-curricular activities. By fostering an entrepreneurial mindset among students, universities can contribute to developing a more innovative and resilient workforce, thereby driving economic growth and societal progress.

4.2. Limitations and Future Directions

Despite its contributions, the study has some limitations that warrant consideration. Using convenience sampling may limit the generalizability of the findings beyond the sampled population at Kocaeli University. Future research could employ a more representative sampling strategy to enhance the external validity of the findings.

Additionally, the study focused primarily on individual-level EOs. It did not explore contextual factors influencing students' entrepreneurial behaviors, such as family background, cultural norms, and institutional support structures. Future research could adopt a more holistic approach to examine the multifaceted determinants of entrepreneurial activity among university students.

4.3. Conclusion

In conclusion, this study sheds light on the EOs of university students and the factors that shape them. By understanding students' unique challenges and opportunities, educators, policymakers, and stakeholders can work together to create a supportive ecosystem that nurtures entrepreneurship and innovation, ultimately driving economic and social development.

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