



EFFECT OF EDUCATION, FAMILY, GENDER AND GENERATIONS ON THE ENTREPRENEURIAL INTENTION

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Bu makale "A research of students' entrepreneurship personality and entrepreneurship tendencies in the context of generations: A research on Anadolu University Open Education system students" isimli yüksek lisans tezinden türetilmiştir. Etik Kurul Onayı: Anadolu Üniversitesi Etik Kurulu, 27.11.2019 tarihi ve 88366 sayılı karar

ABSTRACT

This study aims to find the role of gender, education, family, and generations on entrepreneurial intention and its sub-factors to fill the current literature gap. In the study, a model was constructed and evaluated experimentally on a sample of 663 university students in Türkiye. The sub-factors of entrepreneurial intention were determined using factor analysis, and the association between gender, education, parental status, and generations, as well as entrepreneurial intention, was analyzed using Mann-Whitney U and Kruskal Wallis tests. Firstly, our analysis shows no evidence that gender influences entrepreneurial intention in general, but there is a difference in a sub-factor in favour of females. Secondly, there is a statistically significant difference in favour of those who receive entrepreneurship education in terms of general entrepreneur intention, but only innovativeness and tolerance for uncertainty on sub-factors. Thirdly, parental status and generation do not have statistically significant effects on entrepreneurial intention. In terms of self-confidence, creativity, and drive for achievement, however, there is a statistically significant difference in favour of those who are parents based on the parental status of the participants. Finally, it has been determined that students in Türkiye have a high level of entrepreneurial intention.

Keywords: Entrepreneurship; entrepreneurial intention; gender; entrepreneurial education; family; generations

Editör / Editor:

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L26, M1, M13

Geliş: 11 Temmuz 2023

Received: July 11, 2023

Kabul: 11 Ocak 2024

Accepted: January 11, 2024

Yayın: 30 Nisan 2024

Published: April 30, 2024

Atıf / Cited as (APA):

Ayvaz, E. E. & Kurulgan, M. (2024),
Effect of Education, Family, Gender, and
Generations on The Entrepreneurial Intention,
Erciyes Üniversitesi İktisadi ve İdari Bilimler
Fakültesi Dergisi, 67, 131-141,
doi: 10.18070/erciyesiibd.1325182

EĞİTİM, AİLE, CİNSİYET VE KUŞAKLARIN GİRİŞİMCİLİK EĞİLİMİ ÜZERİNE ETKİSİ

ÖZ

Bu çalışma, mevcut literatür boşluğunu doldurmak için cinsiyet, eğitim, aile ve kuşakların girişimcilik niyeti ve alt faktörleri üzerindeki rolünü bulmayı amaçlamaktadır. Çalışmada bir model oluşturulmuş ve Türkiye'deki 663 üniversite öğrencisinden oluşan bir örneklem üzerinde deneysel olarak değerlendirilmiştir. Girişimcilik niyetinin alt faktörleri faktör analizi kullanılarak belirlenmiş ve cinsiyet, eğitim, ebeveyn durumu ve kuşaklar ile girişimcilik niyeti arasındaki ilişki Mann-Whitney U ve Kruskal Wallis testleri kullanılarak analiz edilmiştir. İlk olarak, genel literatür sonuçlarının aksine, analizimiz cinsiyetin genel olarak girişimcilik niyetini etkilediğine dair bir kanıt göstermemektedir, ancak bir alt faktörde (başarı arzusu) kadınlar lehine bir farklılık vardır. İkinci olarak, genel girişimcilik niyeti açısından girişimcilik eğitimi alanların lehine istatistiksel olarak anlamlı bir fark olduğu, ancak alt faktörlerde sadece yenilikçilik ve belirsizliğe tolerans olduğu görülmektedir. Üçüncü olarak, ebeveyn statüsü ve kuşak ile girişimcilik niyeti arasında istatistiksel olarak anlamlı bir fark yoktur. Bununla birlikte, özgüven, yaratıcılık ve başarı güdüsü açısından, katılımcıların ebeveyn statüsüne bağlı olarak ebeveyn olanlar lehine istatistiksel olarak anlamlı bir fark vardır. Son olarak, Türkiye'deki öğrencilerin yüksek düzeyde girişimcilik niyetine sahip olduğu tespit edilmiştir.

Anahtar Kelimeler: Girişimcilik; girişimcilik niyeti, cinsiyet, girişimcilik eğitimi, aile, kuşaklar

INTRODUCTION

Entrepreneurship and entrepreneurship concepts appear as popular topics that are frequently used today. Entrepreneurship, one of the leading production factors contributing to economic development, is the lifeblood of today's economies (Balaban and Özdemir, 2008). Entrepreneurship takes its place as a necessary element in the growth of today's developing economies, and this idea is accepted globally (Acs et al., 2001). In many regions of the globe, small and medium-sized businesses are regarded as the primary engine of job creation and employment. (OECD, 2019).

There is no agreed standard definition of the concept of entrepreneurship in the literature. Schumpeter defined entrepreneurship as the critical element of change (Martínez-Gregorio et al., 2021). In another definition, entrepreneurship is defined as the development and value creation process that includes obtaining personal satisfaction and financial reward as a result of taking the physical, social and economic risks into account with the necessary effort and time (Akpınar, 2009; Drucker, 2014; Barringer and Ireland, 2016; Tatarlar et al., 2016). The concept of entrepreneurship is most important for developing economies today. The reason for this can be attributed to the fact that entrepreneurship forms the basis of development. As emerging markets realize that entrepreneurship is a key driver of economic growth and sustainable development, they have begun to actively encourage entrepreneurs (Moheb et al., 2016).

Personality attributes including a high demand for achievement, internal locus of control, tolerance for uncertainty, self-confidence, and innovativeness have been cited in several entrepreneurial literature reviews as necessary for success (Yarzebinski, 1992; Goldsmith and Foxall, 2003; Naktiyok, 2004; Wang & Wong, 2004; Lambing and Kuehl, 2007; Fairlie and Holleran, 2012; Marangoz, 2017). Another issue that should be mentioned is that there should be an intention to start entrepreneurship.

Entrepreneurial intention can be defined as owning a person's own business, establishing a person's own business, and continuing a person's career by exhibiting entrepreneurial behaviours (Herman, 2019; Martínez-Gregorio et al., 2021). According to research in the academic literature, entrepreneurial intention is influenced by a number of variables, including personality qualities such as risk-taking, tolerance for uncertainty, and internal locus of control; innovativeness, education level, gender, and family work history (Hoon Ang Don P Hong, 2000; Wang & Wong, 2004; Turker and Selcuk, 2009).

Recently, researchers have been intensely interested in entrepreneurship intention. As a result, research on entrepreneurial intention has increased significantly. Researchers have generally focused on gender, entrepreneurship education, family, culture, and self-efficacy (Turker and Selcuk, 2009; Naktiyok et al., 2010; Liñán et al., 2011; Ferreira et al., 2012; Altınay et al., 2012; Moriano et al., 2012; Bae et al., 2014; Karabulut, 2016; Wardana et al., 2020; Boubker et al., 2021; Martínez-Gregorio et al., 2021; Mozahem and Adlouni, 2021; Otache et al., 2021; Pérez-Pérez et al., 2021; Ratten and Jones, 2021). Different results have been obtained in many studies. However, there are not many studies examining these variables as a whole.

In this context, the related study aims to contribute to the gap in the literature by examining the level of entrepreneurship and entrepreneurship trends in the context of different variables. The purpose of this study is to determine the levels of entrepreneurship among Turkish students and to examine demographic variables such as gender, entrepreneurship education, parental status, and generation within the scope of entrepreneurship sub-dimensions determined by factor analysis, Mann-Whitney U, and Kruskal Wallis tests. In the literature, not all demographic variables examined in the study were examined together. Especially the lack of studies within the scope of the generation gives the study a distinctive feature among other studies. At the same time, the fact that there are not many studies in the literature within the scope of personal factors affecting entrepreneurial intention gives this study a distinctive feature. In addition, the general entrepreneurship level of students in Turkey was also determined in the study.

The rest of the study is organized as follows: In the second part, the

literature on entrepreneurial intention was examined within the scope of the relevant variables. Then, in the third part, information about the statistical analysis and data made in the methodology part is given. Finally, the study ends with the findings, conclusion, and suggestions.

I. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Numerous studies have been conducted on entrepreneurship and entrepreneurship intention. Studies generally focus on entrepreneurship education, entrepreneurship intention and entrepreneurship types. In this study, the level of entrepreneurship and entrepreneurship intentions are examined. In this stage, the literature is reviewed and hypotheses that will serve as the research's foundation are generated.

A. ENTREPRENEURIAL INTENTION AND GENDER

There are many studies within the scope of gender and entrepreneurial intention. In general, a correlation between gender and entrepreneurial desire has been discovered. In their study, Yordanova and Tarrazon (2010) analyze the gender differences in the entrepreneurial ambitions of Bulgarian university students. The statistics indicate that women are less likely to be entrepreneurs than males. In their study on the influence of gender in the entrepreneurial intents of university students, Daz-Garca and Jiménez-Moreno (2010) found that males exhibit a stronger entrepreneurial intent. The implications of parental entrepreneurial experience on a child's tendency to become an entrepreneur as well as the effects of social influences such as family, friends, and role models are investigated by Engle et al. (2011). It also examines how social factors and gender, and national culture affect entrepreneurial intention among 2164 university students from 14 countries. In none of the countries covered in the study, women seem to have a significantly higher entrepreneurial propensity score than men. In a study of 331 Iranian college students using structural equation modeling (SEM), Karimi et al. (2013) found that male students were more likely to have an entrepreneurial mindset. The study also found that while male students' entrepreneurial aspirations were not impacted by subjective standards, female students' aspirations were influenced by factors including societal pressures. Haus et al. (2013), according to the results of the SEM analysis they have applied, stated that men have a higher average entrepreneurship intention than women. They also state differences between the participants' gender-entrepreneurship intention between the USA and EU countries. In their study, Maes et al. (2014) examined the entrepreneurship intentions of 437 business students in Belgium, and concluded that the entrepreneurial thoughts of individuals differ based on gender. It has been hypothesized that gender disparities in thinking and perceived behavioral controls contribute to variations in the entrepreneurial goals of individuals of different sexes. Shinnar et al. (2014) investigate the impact of gender on entrepreneurial ambition and self-efficacy. Beginning and end-of-semester data were obtained from students enrolled in a course on the fundamentals of entrepreneurship; the results indicate that while entrepreneurial self-efficacy grows for both groups, this gain is statistically significant only for male students. Moreover, despite the fact that entrepreneurial intentions did not change statistically for either gender subgroup, the findings reveal a positive relationship between entrepreneurial self-efficacy and entrepreneurial intention that varies by gender. In two European countries, Santos et al. (2016) examine the relationship between gender disparities and the social environment in the formation of entrepreneurial ambitions. Males and females have comparable entrepreneurial ambitions, according to the findings. Additionally, males are consistently more optimistic than females. According to Camelo-Ordaz et al. (2016), the gender of non-entrepreneurs in Spain significantly influences their entrepreneurial desire. However, it is stated that these effects disappear as soon as individuals become entrepreneurs. Tsai et al. (2016) analyze the link between perceived talent and entrepreneurial ambition in China and Taiwan, taking into account the mediating roles of perceived opportunity and fear of failure and the moderating influence of gender. According to the study's findings, perceived skill has a greater indirect influence on men's entrepreneurial inclination in Taiwan than on women's, however there is no significant difference in China. Nowinski

et al. (2017) discovered in their research of university students in Visegrad nations (Czech Republic, Poland, Hungary, and Slovakia) that females benefit more from entrepreneurship instruction than males. However, their entrepreneurial intentions and levels of entrepreneurial self-efficacy are typically lower. According to Miranda et al. (2017), the results of a study done on academics at universities in Spain indicate that the determinants impacting the entrepreneurial intention of women in the university setting are the same as those affecting males, while their relative importance varies. Yukongdi and Lopa (2017) examined 393 Thai university students across eight sub-dimensions of entrepreneurship. Based on the variance analysis performed, it has been determined that females tend to take less risks than males. However, there was no significant difference between male and female entrepreneurial intent. In their study of 658 Italian participants, Molino et al. (2018) found that males have a greater link between self-efficacy and entrepreneurial ambition. On the other side, there is a larger correlation between family and friend support and women's entrepreneurial ambition. When analysed by gender, the results reveal differences in the role of entrepreneurs between males and females. In their study on psychology students, Zisser et al. (2019) state that entrepreneurial intention differs in favour of males. Males are more likely than girls to want to start their own businesses, according to this research. The study also found that women tend to rate higher on the social inclination scale. Further, while studies have shown that both men and women engage in prosocial behaviors, women are more likely to focus on relational than constructive acts of kindness. Paray and Kumar (2020), in their study with 309 Indian university students, clearly show a gender difference in entrepreneurship intention. According to the findings, male students are more likely to establish a business than their female counterparts. Based on data obtained from 441 Greek undergraduates, Vamvaka et al. (2020) found that the association between entrepreneurial commitment and emerging entrepreneurship is stronger for males than for females.

In their research of the entrepreneurial features of university students in Chile, Contreras-Barraza et al. (2021) found no significant gender differences in entrepreneurial intention levels, contrary to the findings of the general literature. Furthermore, there is no indication of variations between genders regarding the three components of entrepreneurial intention, which include attitudes, subjective norms, and perceived behavior control. Ramadani et al. (2022), who conducted a study with 449 university students in Bangladesh, found that sex differences in entrepreneurial aspirations did not exist among students who took part in entrepreneurship courses or who attended entrepreneurship events, seminars, fairs, or practices.

The following hypotheses regarding gender and the desire to start a business have been formed after reviewing the relevant literature:

H_{1a}: Entrepreneurial intention differs according to the gender of individuals.

H_{1b}: Entrepreneurial intention sub-factors differ according to the gender of individuals.

B. ENTREPRENEURIAL INTENTION AND EDUCATION

Entrepreneurship education is an essential factor for entrepreneurial intention. Education in entrepreneurship should not be viewed as a strategy solely for individuals who have chosen to become entrepreneurs. Lián et al. (2011) state that this training should become a policy instrument for introducing more individuals to the entrepreneurial career path. At this point, material such as team building, time management, and leadership should be evaluated and included into the lesson plan (Garavan & O'Conneide, 1994).

According to Zhang et al. (2014), entrepreneurship education has a strong favorable effect on entrepreneurial intent. In addition, a gender-based examination revealed that male students exhibited a more entrepreneurial mindset than female students. According to Maresch et al. (2016), entrepreneurship education has a considerable influence on the entrepreneurial inclinations of students. However, it is stated that the effects of entrepreneurship education on students from different departments vary. In their study of 338 students, Entrialgo and Iglesias (2016) demonstrate that entrepreneurship education diminishes the

correlation between subjective standards and perceived behavioral control. Moreover, it demonstrates that it plays a crucial regulatory role that strengthens the connection between subjective norms and entrepreneurial attitudes. The empirical test results of the study by Sun et al. (2017) indicate that entrepreneurship education influences students' attitudes, social norms, self-efficacy, and entrepreneurial purpose. Researchers Barba-Sánchez and Atienza-Sahuquillo (2018) found that entrepreneurship education positively contributes to the entrepreneurial intentions of engineering students, and that students' desire for autonomy is one of the most critical factors in the entrepreneurial intention of future engineers. According to Ni and Ye (2018), a student's entrepreneurship education can influence their motivation, leadership skills, and business acumen. Another research on the topic of entrepreneurship education and collaboration looked at the ways in which learning about entrepreneurship might improve students' confidence in their own abilities and motivation to start their own businesses (Li and Wu, 2019). Using SEM analysis, Bazkiaei et al. (2020) found that entrepreneurship education and five major personality factors influence entrepreneurial intention. These findings imply that if proper educational supports are applied, students' entrepreneurial goals may be fostered and their skill expectations can be matched with their skill accomplishments. Working with university students in India, Jena (2020) showed that entrepreneurship education had a substantial beneficial effect on entrepreneurial intent. Empirical findings from a research conducted by Iwu et al. (2021) on university students in South Africa showed that entrepreneurial intention influenced students' intentions to engage in entrepreneurial activities, which in turn benefited the country's economy. Students' plans to start their own businesses were shown to be correlated favourably with how knowledgeable they felt that their instructors were. Action-based entrepreneurship education has a favourable and substantial effect on a student's attitude toward entrepreneurship and their perception of their own entrepreneurial ability, according to a PLS-SEM study conducted by Boubker et al. (2021). Based on their research with Chinese college students, Cui and Bell (2022) found that entrepreneurship classes improved students' risk-taking and creativity. However, entrepreneurial behavior plays a mediating role in the development of entrepreneurial intent. These findings suggest that exposure to entrepreneurship education can increase the likelihood that a person will actually start a business.

The vast majority of the research available concludes that schooling in entrepreneurship leads to a rise in the desire to start one's own business. These are the hypotheses that the research has produced in this setting:

H_{2a}: Education in entrepreneurship has a beneficial effect on the intention of individuals to engage in entrepreneurial activity.

H_{2b}: Education in entrepreneurship has a beneficial effect on the individual elements that contribute to entrepreneurial ambition.

C. ENTREPRENEURIAL INTENTION, FAMILY-PARENTAL STATUS AND GENERATIONS

There haven't been many studies that focus on entrepreneurship, parental status, or generational differences. By taking into account different generations and parenting styles, the purpose of this research is to provide a contribution to the existing body of knowledge.

According to Zampetakis et al. (2011), in the SEM analysis applied to university students, it was stated that the support of the families in the creativity factor strengthens the individual creativity of the individual, which increases the individual's intention to become an entrepreneur. This was found to be the case in the SEM analysis applied to university students. Furthermore, Tentama and Papatungan (2019) stated in their study that family support and role models directly and significantly impact entrepreneurial intention. In a similar vein, a further study that was carried out with college students found a substantial positive correlation between the support of one's family and an ambition to start a business (Annisa et al., 2021).

The entrepreneurial intention of a certain generation is often explored within the purview of the theory of planned behavior in the research, that are linked to generation, that are found in the literature. This is something that can be observed in the studies (Koe et al., 2012;

Kusumawardhany and Dwiarta, 2020). As a result of this, and taking into account the results of previous research, the following hypotheses have been developed:

H_{3a}: The entrepreneurial intention of individuals varies according to their parenting status.

H_{3b}: Entrepreneurial intention sub-factors of individuals vary according to their parenting status.

H_{4a}: Entrepreneurship intentions of individuals vary according to generation.

H_{4b}: Entrepreneurial intention sub-factors of individuals vary according to generation.

II. METHODOLOGY

The results of the questionnaire that was put into practice served as the basis for the study's empirical analysis. Therefore, a questionnaire was used as a data collection tool to obtain generalizable and more objective results. The use of university students in entrepreneurship studies is a frequently applied method (Contreras-Barraza et al., 2021; Cui and Bell, 2022; Entrialgo and Iglesias, 2016; Iwu et al., 2021; Maes et al., 2014; Maresch et al., 2016; Shinnar et al., 2014; Vamvaka et al., 2020).

TABLE 1 | Demographic information of participants

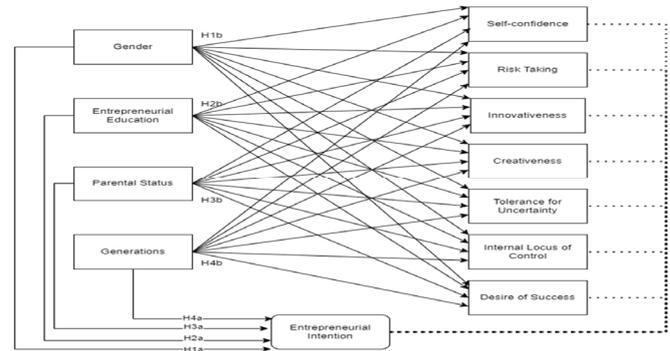
Variables	Frequency	%	
Gender	Male	409	61,7
	Female	254	38,3
Entrepreneurial Education	No	416	62,7
	Yes	247	37,3
Parental Status	Not a Parent	411	62
	Parent	252	38
Generation	Generation Y (1980-1999)	508	76,6
	Generation X (1965-1979)	113	17,0
	Generation Z (2000+)	25	3,8
	Baby Boomer (1946-1964)	16	2,4
	Silent Generation (1925-1945)	1	0,2
Total	663	100	

Survey data were collected from students enrolled in Türkiye. According to the statistics, there are 6.950.142 students in Türkiye in 2022-2023 academic years (YÖK, 2023). A questionnaire form was sent to the students registered, and 663 returned our research data. Accordingly, this number is enough to make a reliable prediction about our sample (Yazıcıoğlu and Erdoğan, 2004). The personal information of the participants is shown in Table 1.

The questionnaire for the research project is split into two parts. The first portion of the survey consists of the questions regarding the students' gender, date of birth, whether or not their family had their own business, whether or not they were taking classes related to entrepreneurship, and whether or not they were parents. In the second section, participants were given a test called the "Entrepreneurship Scale for Students," which consisted of 36 questions and was developed by Yilmaz and Sunbul (2009). The test was structured in the form of

a five-point Likert scale, and its primary purpose was to evaluate the participants' levels of entrepreneurialism. Participants were asked to evaluate the statements "1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Very often" on the scale. Figure 1 illustrates the research model that was used.

FIGURE 1 | Research Model



Data analysis included the use of descriptive statistics, factor analysis to identify the dimensions of the entrepreneurship scale, the Kolmogorov-Smirnov test to ensure normality, and the Mann-Whitney U and Kruskal-Wallis tests to compare the groups.

The goal of factor analysis is to identify the underlying variables (factors/dimensions/components) that are intended to explain a formation and give them names when appropriate by breaking down complex data structures into smaller, more manageable ones. In this context, factor analysis may alternatively be seen as a collection of techniques for determining if a large number of independent variables can be broken down into a smaller number of common categories (Alpar, 2010).

Factor analysis is one of the widely used multivariate statistical techniques that aim to explain the measurement with a small number of significant and independent factors by gathering a large number of variables that measure the same structure or quality (Büyüköztürk, 2006; Kalaycı, 2010). Factor analysis is frequently used to determine the construct validity of aggregate-based scales. Validity is the degree to which an instrument can accurately measure the property that it intends to measure without confusing it with other properties (Alpar, 2010). Similar to regression analysis, component analysis tries to explain a dependent variable using a collection of independent variables. By grouping together a collection of variables with a high correlation, factor analysis can generate generic variables called factors (Kalaycı, 2010). The purpose here (Büyüköztürk, 2006; Kalaycı, 2010):

- Reducing the number of variables,
- Classifying variables,
- To provide uncorrelatedness between the new variable or factors,
- To obtain significant factors.

The fitness of the data for factor analysis is determined by a battery of tests. These are:

Correlation matrix: The first method used for this purpose is to create a correlation matrix for all variables. The desired situation is that the relationship between the variables is high. If two variables are highly correlated, it's likely that they have a common factor.

Bartlett test of sphericity: In correlation analysis, the probability of high correlation between at least some of the variables are tested. It is necessary to reject the null hypothesis that the correlation matrix is the unit matrix before proceeding with the investigation. Since the hypothesis was not accepted, it can be assumed that the variables are highly correlated.

Kaiser-Meyer-Olkin (KMO) sample adequacy criterion: It's a metric for evaluating the strength of the observed correlations relative to the partial correlations. The KMO ratio should be above 0.5.

KMO Analysis, determines whether the sample is sufficient; The Bartlett Test, on the other hand, helps to determine whether the correlations between the variables are significant and, therefore, whether it is appropriate to apply the Factor Analysis. Table 2 displays the outcomes of the KMO and Bartlett tests for factor analysis.

TABLE 2| KMO and Bartlett test results for factor analysis

KMO Value		,963
Bartlett Test of Sphericity	Chi-square value	13304,242
	Degrees of freedom	630
	p value	,001*

*: p<0,05

Table 2 displays that the KMO for the factor analysis is 0.963. If the sample size is large enough, factor analysis may be performed. After running the Bartlett Test, we got a p-value of 0.001. Since this value is less than 0.05, it is concluded that the variables are significantly related. In this case, factor analysis is appropriate. Table 3 displays the outcomes of the conducted factor analysis.

TABLE 3| The Outcomes of the Factor Analysis

Factor	Eigenvalues	Percentage of Variance Explained	Cumulative variance	Cumulative Variance of Varimax Rotation Result
1	15,768	43,800	43,800	43,800
2	1,482	4,116	47,915	47,915
3	1,282	3,562	51,477	51,477
4	1,226	3,406	54,883	54,883
5	1,093	3,036	57,919	57,919
6	,981	2,725	60,645	60,645
7	,922	2,562	63,206	63,206
8	,901	2,502	65,708	
9	,808	2,246	67,953	
10	,744	2,066	70,019	
11	,740	2,054	72,073	
12	,669	1,859	73,932	
13	,637	1,770	75,702	
14	,600	1,666	77,368	
15	,557	1,548	78,916	
16	,523	1,452	80,368	
17	,498	1,382	81,750	
18	,494	1,372	83,123	
19	,477	1,324	84,447	
20	,446	1,239	85,686	
21	,443	1,231	86,918	
22	,422	1,173	88,090	
23	,410	1,140	89,230	
24	,378	1,051	90,281	
25	,366	1,018	91,299	
26	,354	,983	92,282	
27	,335	,932	93,214	
28	,325	,903	94,117	
29	,321	,892	95,009	
30	,308	,856	95,864	
31	,298	,828	96,692	
32	,274	,761	97,453	
33	,256	,712	98,165	
34	,243	,676	98,841	
35	,218	,605	99,446	
36	,200	,554	100,000	

Table 3 shows that 63.206% of the variation in the data can be accounted for by the seven factors shown there. This rate of openness is reasonable. Table 4 displays the factor analysis' resulting matrices of factor loads after applying a varimax rotation to the data.

TABLE 4| The Varimax Rotation Result Factor Loads Matrix

Questions	Factors						
	1	2	3	4	5	6	7
Q33	,699						
Q31	,693						
Q34	,642						
Q35	,604						
Q32	,609						
Q36	,519						
Q22	,469						
Q26		,693					
Q25		,681					
Q16		,585					
Q24		,549					
Q29		,537					
Q28		,532					
Q23		,484					
Q30		,476					
Q27		,466					
Q20			,732				
Q19			,717				
Q18			,677				
Q21			,564				
Q17			,409				
Q5				,711			
Q6				,682			
Q7				,513			
Q8					,649		
Q9					,576		
Q13					,575		
Q11					,530		
Q10					,456		
Q12					,399		
Q14						,661	
Q3						,663	
Q4						,520	
Q15						,487	
Q2							,707
Q1							,697

For the "construct validity" of the factors obtained in the factor analysis, factor analysis was applied again with the questions in each factor and the questions in all factors were included in one factor. In addition, reliability analysis of the items in the obtained factors was

performed (Cronbach's alpha values were obtained between 0.692-0.898). The dimensions were evaluated as "highly reliable" and "extremely reliable". These results are presented in Table 5.

TABLE 5| Reliability analysis on entrepreneurial personality sub-dimensions

Entrepreneurial Personality Traits	Number of Items	Cronbach's Alpha
Self-confidence (SC)	7	0.883
Risk taking (RT)	9	0.898
Innovativeness (INO)	5	0.864
Creativeness (CRE)	3	0.768
Internal Locus of Control (ILC)	6	0.842
Tolerance to Uncertainty (TLU)	4	0.692
Desire of Success (DOS)	2	0.785
General Value	36	0.961

Considering the factor loadings matrix obtained in factor analysis, it is decided in which factor the variables will take place. The expected situation here is that the factor loadings matrix gives a simple structure. That is, in each variable row, the loading value in one factor should be high and the others should be low. However, it is quite difficult to reach a simple structure in practice. For this reason, there are various studies and suggestions in the literature on what the acceptable (statistically significant) lower limit value should be. Whether the factor loadings are statistically significant or not is based on the power of the test and the sample size. As it is known, the power of any statistical test (1- β) increases as the sample size increases. Hair et al. (1995) presented the results of the power analysis on this subject as shown in the Table 6 below;

TABLE 6| Guidelines for identifying Significant Factor Loadings Based on Sample Size

Factor Load	Required Sample Size for Significance
≤ 0.30	350
≤ 0.35	250
≤ 0.40	200
≤ 0.45	150
≤ 0.50	120
≤ 0.55	100
≤ 0.60	85
≤ 0.65	70
≤ 0.70	60
≤ 0.75	50

Since the sample size used is 663 units, the value of 0.4 taken as the minimum factor loading is significant at the 0.05 significance level and shows that a significant factor loading is reached with a power value above 0.80. In the literature, several sources recommend factor loadings of 0.3 and above (Tabacknick & Fidell, 2013; Stevens, 2002; Kline, 1994).

III. FINDINGS

Table 4 shows in which factors, in other words, in which Entrepreneurship sub-dimensions the questions will take place as a result of factor analysis. Accordingly, the first sub-dimension includes

items numbered "22, 31, 32, 33, 34, 35, 36". In the second sub-dimension, there are items numbered "16, 23, 24, 25, 26, 27, 28, 29, 30". In the third sub-dimension "17, 18, 19, 20, 21"; "5, 6, 7" in the fourth sub-dimension; in the fifth dimension "8, 9, 10, 11, 12, 13"; In the sixth dimension, there are items numbered "3, 4, 14, 15". Finally, items are numbered "1 and 2" in the seventh sub-dimension. Considering previous studies and entrepreneurial personality traits, these factors (sub-dimensions) were named. Accordingly, the first sub-dimension is "Self-Confidence (SC)", the second sub-dimension is "Risk-Taking (RT)", the third sub-dimension is "Innovativeness (INO)", the fourth sub-dimension is "Creativeness (CRE)", the fifth sub-dimension is "Internal Locus of Control (ILC)", and the sixth sub-dimension is "Tolerance to Uncertainty (TLU)", and the seventh sub-factor can be named as "Desire of Success (DOS)". (Aksoy and Yalçınsoy, 2017; Balaban and Özdemir, 2008; Duran et al., 2013; Hisrich and Peters, 1998; Lambing and Kuehl, 2003; Naktiyok, 2004; Yarzabinski, 1992). The averages of the answers given by the participants to the statements are shown in Table 7.

TABLE 7| Statistics related to answers

Questions	Mean.	Std. Dev.	n
Q1	4,20	,940	663
Q2	4,46	,810	663
Q3	3,71	1,076	663
Q4	3,90	,986	663
Q5	3,63	1,253	663
Q6	3,88	1,108	663
Q7	4,09	,979	663
Q8	4,19	1,063	663
Q9	4,00	1,097	663
Q10	4,13	,981	663
Q11	3,79	1,207	663
Q12	3,70	1,118	663
Q13	3,71	1,146	663
Q14	3,76	1,126	663
Q15	4,19	,942	663
Q16	3,72	1,112	663
Q17	3,92	1,008	663
Q18	4,03	,970	663
Q19	4,03	,961	663
Q20	3,92	,993	663
Q21	3,80	1,002	663
Q22	4,09	,980	663
Q23	4,01	,934	663
Q24	4,00	,967	663
Q25	3,65	1,122	663
Q26	3,68	1,140	663
Q27	4,09	,923	663
Q28	4,03	,908	663
Q29	4,04	,915	663
Q30	4,11	,922	663
Q31	4,32	,947	663
Q32	4,09	1,014	663
Q33	4,21	,990	663
Q34	4,12	1,024	663
Q35	4,13	,960	663
Q36	4,13	,974	663
Mean	3,98		663

In Table 7, the averages of the answers given by the participants to the statements are given. These expressions, which were converted to a Likert scale, correspond to the concepts (1) "Never", (2) "Rarely", (3) "Sometimes", (4) "Often", and (5) "Very Often". The average of the answers given by the participants to the statements was determined as 3.98. Since this result (4) is very close to the concept of "Often", it can be interpreted that the general entrepreneurial intentions of the participants are high.

Entrepreneurial personality traits of the participants were also evaluated in terms of seven sub-dimensions obtained as a result of the factor analysis. After the evaluation with a holistic approach, seven sub-dimensions of entrepreneurial personality traits were evaluated differently according to personal variables. Descriptive statistical information on the sub-dimensions of entrepreneurial personality is given in Table 8.

TABLE 8 | Descriptive statistics on entrepreneurial personality sub-dimensions

Entrepreneurial Personality Traits	n	Mean	Std. Deviance	Min	Max
Self-confidence (SC)	663	4,1554	,75460	1,00	5,00
Risk taking (RT)	663	3,9254	,74064	1,00	5,00
Innovativeness (INO)	663	3,9385	,79436	1,00	5,00
Creativeness (CRE)	663	3,8678	,92471	1,00	5,00
Internal Locus of Control (ILC)	663	3,8906	,74603	1,00	5,00
Tolerance to Uncertainty (TLU)	663	3,9193	,82579	1,00	5,00
Desire of Success (DOS)	663	4,3311	,79612	1,00	5,00
General Value	663	143,4525	23,94708	38,00	180,00

The students have an average SC sub-dimension score of 4.1554, as shown in Table 8. According to the scale applied, this score shows that the participants' self-confidence in entrepreneurship characteristics is high. The sub-dimensions of RT (mean =3.9254), INO (mean =3.9385), CRE (mean =3.8678), ILC (mean =3.8906) and TLU (mean =3.9193) were added to the expression "Often" (4). is very close, showing that the participants also have high entrepreneurial characteristics in these entrepreneurship sub-dimensions. Overall, participants averaged 4.3311 out of 5.00 on the entrepreneurial sub-dimensions, with the greatest score coming from the DOS sub-dimension. The findings reveal that people generally have strong intent to engage in entrepreneurial behavior across all dimensions of the concept.

According to Table 8, the overall score resulting from the answers given by the participants is 143.4525. Therefore, according to the scale developed by Yilmaz and Sünbül (2009), it can be said that the entrepreneurship levels of the participants are between 124-151 points, so they are at the "high entrepreneurship" level.

The normality assumption was checked to see if it was fulfilled for the dimensions of entrepreneurship that emerged from the factor analysis, which would allow for the use of parametric tests to assess the study hypotheses. This was checked using the Kolmogorov-Smirnov test for statistical significance. The results of the tests may be shown in Table 9. None of the dimensions met the normality assumption ($p < 0.05$). This led researchers to employ non-parametric tests such as the Mann-Whitney U and Kruskal-Wallis analyses.

TABLE 9 | Kolmogorov-Smirnov test results for the assumption of normality

	SC	RT	INO	CRE	ILC	TLU	DOS	General
n	663	663	663	663	663	663	663	663
Mean	4,1554	3,9254	3,9385	3,8678	3,8906	3,9193	4,3311	5143,452
Std. Dev.	,75460	,74064	,79436	,92471	,74603	,82579	2,7961	23,94708
Kolmogorov-Smirnov Z	3,386	1,890	2,336	2,959	2,871	2,454	5,715	1,926
p value	<,001	,002	<,001	,000	,000	,000	,000	,001

Students' entrepreneurial traits were analyzed using the Mann-Whitney U test to see whether there were any gender differences. Table 10 displays the outcomes of the tests

TABLE 10 | Mann-Whitney U test results for gender differences in entrepreneurship dimensions

Test Statistics	General	SC	RT	INO	CRE	ILC	TLU	DOS
Mann-Whitney U	49124,50	48672,50	49286,50	50201,50	50975,00	47610,50	49507,00	47182,50
Wilcoxon W	32969,5	132517,5	133131,5	134046,5	134820,0	131455,5	133352,00	131027,5
Z	-1,176	-1,370	-1,110	-,729	-,407	-1,819	-1,019	-2,083
p value	,240	,171	,267	,466	,684	,069	,308	,037*

*: $p < 0,05$

Table 10 shows a difference in favour of females regarding the DOS dimension ($p = 0.037 < 0.05$). SC ($p = 0.171 > 0.05$), RT ($p = 0.267 > 0.05$), INO ($p = 0.466 > 0.05$), CRE ($p = 0.684 > 0.05$), ILC ($p = 0.069 > 0.05$) and TLU ($p = 0.308 > 0.05$) did not differ in terms of dimensions. These findings suggest that when comparing the entrepreneurial traits of female and male students across the seven dimensions identified, only the dimension of DOS favours female students. This finding shows that H1b, one of the research hypotheses, is partially supported. There is no difference in the entrepreneurial qualities of students across sexes, as revealed by a survey of students' overall personality traits ($p = 0.240 > 0.05$). With this result, the H1a hypothesis is not supported and is rejected.

TABLE 11 | Entrepreneurial intention and entrepreneurial education relationship results

Test Statistics	General	SC	RT	INO	CRE	ILC	TLU	DOS
Mann-Whitney U	46327,0	46760,0	47993,0	46692,0	47361,5	48207,0	45740,0	50900,0
Wilcoxon W	133063,0	133496,0	134729,0	133428,0	134097,5	134943,0	132476,0	137636,0
Z	-2,118	-1,944	-1,421	-1,972	-1,699	-1,338	-2,370	-,209
p value	,034*	,052	,155	,049*	,089	,181	,018*	,834

*: $p < 0,05$

Table 11 shows that students who have taken an entrepreneurship course in the past have higher overall entrepreneurship ratings than those who have not ($p = 0.034 < 0.05$). The difference is in favour of those who have taken entrepreneurship courses. This situation supports the results of many studies in the literature (Barba-Sánchez and Atienza-Sahuquillo, 2018; Bazkiaei et al., 2020; Boubker et al., 2021; Cui and Bell, 2022; Entrialgo and Iglesias, 2016; Iwu et al., 2021; Jena, 2020; Li and Wu, 2019; Maresch et al., 2016; Ni and Ye, 2018; Sun et al., 2017; Zhang et al., 2014) and our H2a hypothesis. In terms of entrepreneurship sub-dimensions, significant differences were also found in INO ($p = 0.049 < 0.05$) and TLU ($p = 0.018 < 0.05$) dimensions. The difference favours those who have taken lessons in these two entrepreneurship dimensions. This finding from the analysis shows that our hypotheses, H2b, are also partially supported. In terms of entrepreneurship dimensions, SC ($p = 0.052 > 0.05$), RT ($p = 0.155 > 0.05$),

CRE ($p=0.089>0.05$), ILC ($p=0.181>0.05$), and DOS ($p=0.834>0.05$) dimensions no significant difference was found.

TABLE 12| Entrepreneurial intention and parental status results

Test Statistics	General	SC	RT	INO	CRE	ILC	TLU	DOS
Mann-Whitney U	48078,5	46681,5	49438,5	48111,0	46313,5	48136,0	50459,5	44569,5
Wilcoxon W	132744,5	131347,5	134104,5	132777,0	130979,5	80014,0	135125,5	129235,5
Z	-1,549	-2,142	-,982	-1,541	-2,307	-1,535	-,556	-3,162
p value	,121	,032*	,326	,123	,021*	,125	,578	,002*

*: $p<0,05$

According to Table 12, there is a statistically significant difference in terms of SC ($p=0.032<0.05$), CRE ($p=0.021<0.05$) and DOS ($p=0.002<0.05$) according to students' parenting status. The difference is in favour of parents in all three entrepreneurship dimensions. There was no significant difference in RT ($p=0.326>0.05$), INO ($p=0.123>0.05$), ILC ($p=0.125>0.05$), and TLU ($p=0.578>0.05$) dimensions. No statistically significant differences in overall entrepreneurial traits were detected between parents and non-parents ($p=0.121>0.05$). The results reject our hypothesis H3a and partially support H3b.

TABLE 13| Kruskal Wallis test results for generational differences in entrepreneurship dimensions

Test Statistics	General	SC	RT	INO	CRE	ILC	TLU	DOS
Chi-square	3,787	3,050	3,816	1,690	,286	2,079	7,627	4,690
df	3	3	3	3	3	3	3	3
p value	,285	,384	,282	,639	,963	,556	,054	,196

Table 13 shows no statistically significant difference between the generations of students in terms of entrepreneurship dimensions ($p>0.05$). When examined based on generations, which is the main subject of the research, no difference could be determined between generations in terms of general entrepreneurship characteristics. At the same time, no statistically significant difference was found when entrepreneurship was examined in terms of sub-dimensions ($p>0.05$). Our H4a and H4b hypotheses were disproved by the data, suggesting that there is no generational gap in the propensity to start a business.

The analysis and its findings are summarized in Table 13.

TABLE 14| Results of hypothesis

Tests	Hypothesis	Results
Mann-Whitney U Test	H1a: Individuals of different sexes have different levels of entrepreneurial intentions.	No evidence
	H1b: Entrepreneurial intention sub-factors differ according to the gender of individuals.	Partially supported
	H2a: Education in entrepreneurship has a beneficial effect on the intention of individuals to engage in entrepreneurial activity.	Supported
	H2b: Education in entrepreneurship has a beneficial effect on the individual elements that contribute to entrepreneurial ambition.	Partially supported
	H3a: The entrepreneurial intention of individuals varies according to their parenting status.	No evidence
	H3b: Entrepreneurial intention sub-factors of individuals vary according to their parenting status.	Partially supported
Kruskal Wallis Test	H4a: Entrepreneurship intentions of individuals vary according to generation.	No evidence
	H4b: Entrepreneurial intention factors of individuals vary according to generation.	No evidence

CONCLUSION AND SUGGESTION

Today, entrepreneurship has become a vital element in increasing the welfare of societies. Moreover, in the globalizing and growing economy, countries also understand the importance of entrepreneurship daily and are focusing more on it. In particular, fields such as digital entrepreneurship, eco-entrepreneurship, social entrepreneurship, and academic entrepreneurship that emerged due to changing environmental and technology conditions have become essential elements of the economy and social life.

As the significance of entrepreneurship has grown, so has the volume of research published on the topic in scholarly journals. In particular, demographic factors were assessed in the context of entrepreneurship level determination, entrepreneurial personality traits, and entrepreneurial intents, yielding results that had numerous parallels and variations. In addition, the study analyzed how gender, socioeconomic level, parental status, and age group all play a role in shaping the entrepreneurial mindset of college students.

First, the gender differences in aspiring business owners were identified in the study. To see if there are any differences in the likelihood of starting a business based on gender, we utilized the Mann-Whitney U test. According to the responses, students of both sexes expressed an equal interest in pursuing entrepreneurial opportunities. However, when the entrepreneurial intention sub-dimensions are examined, a statistical difference was determined in favour of female students in terms of the DOS dimension. The need for achievement, which has an important place in the progress of societies and the acceleration of economic developments, is one of the fundamental dynamics for any work to achieve its goals successfully (Hansemark, 2000). Results from our study showed similarities to those seen in other studies when examining general entrepreneurial desire (Contreras-Barraza et al., 2021; Ramadani et al., 2022). The study of Yılmaz and Sünbül (2009) also provides a result that supports this research. The results of this study revealed no significant differences in prospective business ownership across genders. In the study of Bilge and Bal (2012), no difference was found between the sub-dimensions of entrepreneurship and gender. However, the findings obtained as a result of our study show a difference. Research by Sarıtaş and Duran (2017) found that male students were more inclined to experiment with new things than their female counterparts. According to the results of a different study that looked at the many elements of entrepreneurship, male students were found to be more creative than their female counterparts (Kılıç et al., 2012). Köksal and Penez (2015), on the other hand, found that male students have a higher entrepreneurial intention based on gender. When our study and other related studies are examined, there are some differences and similarities. When the general entrepreneurship trends are examined, it is seen that the results of our study do not coincide with

the general results in the literature (Camelo-Ordaz et al., 2016; Díaz-García and Jiménez-Moreno, 2010; Engle et al., 2011; Haus et al., 2013; Karimi et al., 2013; Maes et al., 2014; Miranda et al., 2017; Molino et al., 2018; Nowiński et al., 2017; Paray and Kumar, 2020; Santos et al., 2016; Shinnar et al., 2014; Tsai et al., 2016; Vamvaka et al., 2020; Yordanova and Tarrazon, 2010; Yukongdi and Lopa, 2017; Zisser et al., 2019). Most of the studies on sub-dimensions support the results of our research. The reason for the differences, can be said to result from the possibility that cultures influenced the students participating in the study in different geographical regions.

To compare the effects of entrepreneurship education on students' plans to start businesses, a Mann-Whitney U test was conducted. In line with the answers the participants gave, the general entrepreneurial intention differs in favour of the students who take courses related to entrepreneurship. When examined in terms of sub-dimensions, it was revealed that the INO and TLU values of the students who took any course related to entrepreneurship were higher than those who did not. Many studies in the literature have similar results (Barba-Sánchez and Atienza-Sahuquillo, 2018; Bazkiaei et al., 2020; Boubker et al., 2021; Cui and Bell, 2022; Entrialgo and Iglesias, 2016; Iwu et al., 2021; Jena, 2020; Li and Wu, 2019; Maresch et al., 2016; Ni and Ye, 2018; Sun et al., 2017; Zhang et al., 2014). Furthermore, compared to students who do not take an entrepreneurship course, those who do have more of an intention to start their own business. It was also noted that the children exhibited advanced levels of CRE traits. Irin (2019) found that students who had previously attended an entrepreneurship course had higher average entrepreneurship scores than those who had not. These findings prove without a reasonable doubt the importance of teaching entrepreneurship to aspiring business owners. Adding entrepreneurship courses to the curriculum and teaching them at secondary education institutions and universities can significantly contribute to the development of individuals' entrepreneurship levels and entrepreneurial personality traits, and by extension, to the development of the country's economy.

Students' prospective business ventures were analyzed using the Mann-Whitney U test to see if they varied by parental status. In line with the answers the participants gave, no difference could be determined between those who have children and those who do not in general entrepreneurial intentions. However, when examined in terms of entrepreneurship sub-dimensions, SC, CRE and DOS characteristics of the participants with children were more potent than those without children.

Students' entrepreneurial traits were analyzed using the Kruskal Wallis test to see whether there were any generational differences. In line with the answers given by the participants, no statistical difference could be determined based on generations in the general entrepreneurship level and entrepreneurship sub-dimensions of the students. Similar studies in the literature have yielded different results. For example, in the study of Arslan and Staub (2015), a difference was found in favour of the "Baby Boom Generation" regarding general entrepreneurship level between generations. In the same study, a difference in favour of the "Baby Boom Generation" was determined in the INO and RT dimensions of the entrepreneurship sub-dimensions.

On the other hand, in Keleş's (2013) study, a difference was determined in favour of "Generation Y" members in the sub-dimensions of entrepreneurship, "Need to be Independent", CRE and RT. Among the reasons for the differences in the studies, the different scales used and the fact that the participants were from different regions can be shown. In this study, the majority of the participants were members of the generation Y, and therefore the participation of other generation representatives was in the minority; that is, the absence of a homogeneous participant ratio may have been an essential factor in obtaining such a result. In addition, the scale used may cause the results to come out this way. Therefore, it is thought that working on a more specific sample and using different scales to have the generation representatives closer to each other in future studies may be effective in producing different results.

The overall entrepreneurial competence of the participants was found to be 143.4525 points high. It follows that there is a great deal of student enthusiasm for starting businesses in Turkey. European and

American policymakers are placing a premium on entrepreneurship education as a means to boost the region's already high percentages of self-employment. Therefore, most European countries and the United States incorporate entrepreneurship education into their school curricula and encourage its practice. The premise of these courses is that entrepreneurial abilities are pliable and not innate (Oosterbeek et al., 2010).

According to Van der Sluis and Praag (2007), formal entrepreneurship education boosts business success. In addition to theoretical entrepreneurship education, practical training can be provided to undergraduate or graduate students. The entrepreneurial desires of individuals can be increased with practical pieces of training. In addition, entrepreneurship can be encouraged, or awareness can be created by using business games in entrepreneurship training. In their work, Pérez-Pérez et al. (2021) do not detect a significant positive effect of business games on entrepreneurial intention. However, it is thought that these educational activities can create awareness in individuals. In addition to undergraduate and graduate education, it is thought that adding entrepreneurship courses to the curriculum in secondary education institutions, especially in vocational high schools, can increase entrepreneurship from high to very high levels. In the future, it is thought that conducting research on this subject without being limited to a single university, with a comparative analysis that will include state and foundation universities, will lead to more effective results. It is thought that an international study that will include state and foundation universities and universities in other countries can make valuable contributions to the literature.

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