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Research Article

The Relationship Between Preservice Teachers' Level of Innovativeness and Academic Career Awareness

Öğretmen Adaylarının Bireysel Yenilikçilik Düzeyleri ile Akademik Kariyer Farkındalıkları Arasındaki İlişki

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Abstract

Purpose: *The purpose of this study is to examine the relationship between preservice teachers' levels of individual innovativeness and their awareness of academic careers.* ***Method:*** *The research employed a correlational survey model with a sample of 333 preservice teachers enrolled in the Faculty of Education of a university in the Black Sea Region of Türkiye during the 2024-2025 academic year. Data were collected using the Individual Innovativeness Scale and the Academic Career Awareness Scale.* ***Findings:*** *The findings indicated that preservice teachers demonstrated a moderate level of individual innovativeness, with the highest mean score observed in the "resistance to change" dimension and the lowest in "risk-taking." Preservice teachers' overall academic career awareness levels were found to be high, with the strongest awareness in the dimension of "being a faculty member and related conditions." Correlation analysis revealed a low but statistically significant positive relationship between individual innovativeness and academic career awareness. Regression analysis showed that the dimensions of openness to experience and risk-taking were significant predictors of academic career awareness, explaining approximately 9% of the variance ($R^2 = .09$).* ***Conclusion:***

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By empirically demonstrating the predictive role of specific innovativeness dimensions in academic career awareness, this study contributes to the literature by moving beyond descriptive findings and offering evidence-based implications for teacher education programs.

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Öz

Amaç: *Bu çalışmanın amacı, öğretmen adaylarının bireysel yenilikçilik düzeyleri ile akademik kariyer farkındalıkları arasındaki ilişkiyi incelemektir.* ***Yöntem:*** *Araştırma, 2024-2025 akademik yılında Türkiye'nin Karadeniz Bölgesi'nde yer alan bir üniversitenin Eğitim Fakültesi'nde öğrenim gören 333 öğretmen adayından oluşan örneklemle yürütülen ilişkisel tarama modeline dayanmaktadır. Veriler, Bireysel Yenilikçilik Ölçeği ve Akademik Kariyer Farkındalığı Ölçeği kullanılarak toplanmıştır.* ***Bulgular:*** *Bulgulara göre, öğretmen adaylarının bireysel yenilikçilik düzeylerinin orta düzeyde olduğu, en yüksek ortalamanın "değişime direnç" boyutunda, en düşük ortalamanın ise "risk alma" boyutunda gözlendiği belirlenmiştir. Öğretmen adaylarının akademik kariyer farkındalık düzeyleri genel olarak yüksek bulunmuş, en güçlü farkındalığın "öğretim elemanı olma ve ilgili koşullar" boyutunda olduğu görülmüştür. Korelasyon analizi, bireysel yenilikçilik ile akademik kariyer farkındalığı arasında düşük düzeyde ancak istatistiksel olarak anlamlı ve pozitif bir ilişki olduğunu ortaya koymuştur. Regresyon analizi sonuçları, "deneyime açıklık" ve "risk alma" boyutlarının akademik kariyer farkındalığının anlamlı yordayıcıları olduğunu ve varyansın yaklaşık %9'unu açıkladığını göstermiştir (R^2 = .09).* ***Sonuç:*** *Belirli yenilikçilik boyutlarının akademik kariyer farkındalığındaki yordayıcı rolünü ampirik olarak ortaya koyan bu çalışma, betimleyici bulguların ötesine geçerek öğretmen eğitimi programları için kanıta dayalı çıkarımlar sunmakta ve alanyazına katkı sağlamaktadır.*

Introduction

University students aim to complete their education, secure employment, and establish a sustainable professional career after graduation. However, uncertainty regarding future career paths remains a significant challenge for many students (Gutman & Schoon, 2012; Komarraju et al., 2013; Lin et al., 2015; Welsh & Schmitt-Wilson, 2013). This uncertainty increases the need for guidance, self-awareness, and systematic information during the career planning process (Savickas, 2013).

In the context of teacher education, career planning has become increasingly complex due to structural challenges within the teaching profession. Although teacher quality is a key determinant of student achievement, factors such as low salaries, limited career advancement opportunities, and increasing workload have reduced the attractiveness of teaching as a profession (OECD, 2005). In Türkiye, the growing number of graduates from faculties of education combined with limited teacher recruitment quotas has narrowed employment opportunities, prompting preservice teachers to

engage in career planning earlier in their undergraduate education (Council of Higher Education, 2023; Hacettepe University Faculty of Education, 2017; TURKSTAT, 2024).

Students with higher levels of career awareness tend to demonstrate greater vocational satisfaction, decision-making competence, and self-efficacy, while experiencing lower levels of anxiety during the transition to professional life (Creed et al., 2005; Stringer & Kerpelman, 2010). However, research indicates that career awareness among preservice teachers is not uniform, with significant differences related to individual and contextual factors such as academic achievement, motivation, and attitudes toward the profession (Büyükgöze & Gelbal, 2016; İlter, 2021). Identifying the factors that shape career awareness is therefore critical for supporting the professional development of preservice teachers.

Within this broader framework, academic career awareness has emerged as a distinct and increasingly important dimension of career planning for preservice teachers. Academic career awareness refers to individuals' knowledge, understanding, and awareness of the requirements, processes, and conditions of academic life. This multidimensional construct plays a decisive role in shaping undergraduate students' orientations toward academic careers, their perceptions of graduate education, and their intentions to pursue academic professions (Dağyar et al., 2021). In recent years, academic careers have been increasingly considered a viable alternative employment pathway for preservice teachers, particularly in contexts where teacher recruitment opportunities are limited. The expansion of graduate programs and the growing demand for qualified human resources in higher education have further contributed to this trend (Council of Higher Education, 2024; Dağyar et al., 2021; İlter, 2021).

Previous studies have identified various individual and environmental factors associated with academic career awareness, including self-efficacy, motivation, academic achievement, and role-model influence (Bayram & Öztırak, 2023; Çelik et al., 2022; Dağyar et al., 2021; İlter, 2021). One individual factor that may also play a role in shaping academic career awareness is individual innovativeness. In rapidly evolving knowledge societies, innovativeness reflects individuals' openness to new ideas, willingness to take risks, and capacity to adapt to change. For preservice teachers, innovativeness may influence not only instructional practices but also awareness of and orientation toward alternative career pathways, including academic careers (Zainal & Matore, 2019). Examining the relationship between individual innovativeness and academic career awareness therefore offers a meaningful perspective for understanding how preservice teachers navigate career uncertainty and professional decision-making.

Although prior research has examined academic career awareness and individual innovativeness as separate constructs, empirical studies investigating their relationship among preservice teachers remain limited (Çelik et al., 2022; Dağyar et al., 2021; İlter, 2021). Addressing this gap, the present study aims to examine the relationship between preservice teachers' levels of individual innovativeness and their academic career awareness. By empirically testing this relationship, the study contributes to the literature

by moving beyond descriptive approaches and offering evidence-based insights into the role of innovativeness in shaping academic career orientations within teacher education. The findings are expected to provide both theoretical contributions and practical implications for teacher education programs seeking to support informed and sustainable career planning.

From a theoretical perspective, individual innovativeness may play a critical role in shaping academic career awareness by fostering intellectual curiosity, openness to learning, and adaptability to change. Innovative individuals are more likely to explore diverse career options, engage in long-term planning, and seek information about complex career pathways such as academic professions. These characteristics may enhance individuals' awareness of graduate education processes and academic career requirements.

Literature review

Academic Career Awareness

Career awareness refers to individuals' level of knowledge and consciousness regarding the opportunities, requirements, and developmental pathways associated with a specific profession or field. Such awareness enables individuals to identify career goals, make informed decisions, and take advantage of appropriate educational opportunities throughout their professional development (Aytaç & Keser, 2017; Oesch & Bower, 2009).

Within this broader framework, academic career awareness (ACA) represents a multidimensional construct encompassing individuals' knowledge, attitudes, and consciousness regarding graduate education and the process of becoming an academic (Dağyar et al., 2021). Academic career awareness plays a decisive role in shaping undergraduate students' orientations toward academic careers, their perceptions of graduate education, and their intentions to pursue academic professions. In this respect, previous research has provided conceptual frameworks for understanding preservice teachers' awareness of academic career processes and requirements (Dağyar et al., 2021).

Graduate education constitutes the foundation of an academic career and includes master's, doctoral, or medical specialization programs grounded in scientific research and teaching activities (Council of Higher Education, 2016). Through graduate education, individuals develop academic competencies (Aitken et al., 2008), engage in research processes, and integrate into academic communities, thereby progressing toward becoming scholars (Artess & Hooley, 2018; Kayahan Karakul & Karakütük, 2014). Beyond training future faculty members, graduate education fosters lifelong learning, professional self-renewal, and career planning skills, all of which are essential for sustainable academic development (Barber & Mourshed, 2007; Köksalan et al., 2010).

Research indicates that academic career awareness among preservice teachers is influenced by various individual and contextual factors, including motivation, academic

achievement, self-efficacy, and exposure to academic role models (Büyükgöze & Gelbal, 2016; Çelik et al., 2022). Among these factors, individual innovativeness has emerged as a potential explanatory variable shaping preservice teachers' academic career orientations. Innovative individuals tend to demonstrate greater intellectual curiosity, openness to learning, and willingness to explore new opportunities, which may enhance their awareness of academic career pathways and requirements (Bitkin, 2012; Kılıç, 2015).

In the context of teacher education, innovativeness is also closely associated with research-oriented thinking, lifelong learning, and adaptability to change, competencies that align with the demands of academic careers (Kayahan Karakul & Karakütük, 2014; Narayanan, 2017). Preservice teachers with higher levels of innovativeness are therefore more likely to engage actively in learning processes, seek opportunities for academic advancement, and develop a clearer understanding of academic career trajectories.

Although academic career awareness and individual innovativeness have been examined separately in the literature, empirical studies investigating their relationship among preservice teachers remain limited (Çelik et al., 2022; Dağyar et al., 2021; İlter, 2021). Addressing this gap, the present study examines the relationship between preservice teachers' levels of individual innovativeness and their academic career awareness, thereby contributing to the literature by offering evidence-based insights into the role of innovativeness in shaping academic career orientations within teacher education.

Individual Innovativeness

Individual innovativeness refers to an individual's ability to adapt to change, embrace new ideas, and adopt innovative practices across cognitive, affective, and behavioral domains. It reflects openness to learning, a willingness to take risks, and the capacity to perceive change as an opportunity for improvement rather than a threat (Rogers, 2003; Soffer et al., 2010; Zeer & Stepanova, 2023). In knowledge-based societies, innovativeness plays a critical role in enabling individuals to generate knowledge, solve problems effectively, and respond flexibly to evolving professional demands (Gilbert, 2007).

In the context of teacher education, individual innovativeness encompasses dimensions such as openness to change, creativity, risk-taking, and flexibility, which influence preservice teachers' attitudes toward new knowledge and their capacity to implement innovative practices (Çuhadar et al., 2013; Yenice & Yavaşoğlu, 2018). Innovative preservice teachers are more likely to design flexible and effective learning environments, integrate technology into teaching practices, and engage in continuous professional development (Aldahdouh et al., 2019). These characteristics contribute to the development of professional competencies that support adaptive and research-oriented teaching.

From a social-cognitive perspective, individuals' innovativeness is closely associated with their self-efficacy beliefs. According to Social Learning Theory, individuals who believe they can cope with new situations are more likely to adopt and sustain innovative behaviors (Bautista et al., 2018; Hammond et al., 2011). In educational settings, such beliefs strengthen preservice teachers' motivation to update their knowledge, experiment with new approaches, and respond constructively to change.

The adoption of innovations varies across individuals. Rogers (2003) classified individuals according to their tendency to adopt innovations as innovators, early adopters, early majority, late majority, and laggards. Research conducted in Türkiye suggests that preservice teachers predominantly fall into the early adopter and early majority categories, indicating openness to innovation and a relatively cautious approach to implementation (Bitkin, 2012; Çuhadar et al., 2013; Gökbulut, 2021). These findings are consistent with international research emphasizing gradual and context-dependent innovation adoption in educational settings.

Individual innovativeness has been shown to relate positively to skills such as creativity, digital competence, critical thinking, and optimism (Korucu & Olpak, 2015; Süer & Karagül, 2023; Yenice & Yavaşoğlu, 2018). Although academic career awareness has been examined in relation to factors such as academic achievement, professional expectations, and demographic variables (Dağyar et al., 2021), empirical studies directly investigating the role of individual innovativeness in shaping academic career awareness remain limited.

Addressing this gap, the present study examines individual innovativeness as a potential explanatory factor influencing preservice teachers' academic career awareness. Given that innovative individuals tend to demonstrate heightened intellectual curiosity, openness to learning, and self-efficacy, investigating this relationship provides a theoretically grounded rationale for understanding academic career orientations within teacher education.

The purpose of this study is to investigate the relationship between preservice teachers' levels of individual innovativeness and their awareness of their academic career. To achieve this aim, we addressed the following research questions:

1. What is the level of individual innovativeness among preservice teachers, and how are they distributed across innovation categories?

2. What is the level of academic career awareness among preservice teachers?

3. Is there a significant relationship between preservice teachers' levels of individual innovativeness and their levels of academic career awareness?

4. Do preservice teachers' levels of individual innovativeness significantly predict their academic career awareness?

Methodology

Research Design

The study employed a correlational survey design, a quantitative research method. This model offers a suitable approach for describing the existing relationships between variables. In survey research, information about individuals' attitudes, characteristics, or prior experiences is collected through specific questions, and generalizations about the population are made based on the sample data. The primary aim is to gather information about a larger population through a representative sample (Leedy & Ormrod, 2005). In the correlational survey model, the researcher does not intervene in the variables but focuses on analyzing their relationships (Bordens & Abbott, 2018).

Sample

The study population consisted of 2.404 preservice teachers enrolled in the Faculty of Education of a university in the Black Sea Region of Türkiye during the 2024-2025 academic year. From this population, a sample of 333 preservice teachers was selected using convenience sampling. Convenience sampling is a non-probability sampling technique in which participants are selected based on ease of access and willingness to participate. Although this method offers advantages in terms of time and cost efficiency, its ability to represent the entire population is limited (Baltacı, 2018). Participation in the study was voluntary, and no personally identifiable information was collected from the participants. The demographic characteristics of the preservice teachers included in the sample are presented in Table 1.

Table 1: *Findings Related to the Personal Characteristics of Preservice Teachers*

Variable	Category	*n*	%
Gender	Female	244	73,27
	Male	89	26,73
Department	Elementary Mathematics Education	57	17,12
	Preschool Education	46	13,81
	Turkish Language Education	44	13,21
	Psychological Counseling and Guidance	40	12,01
	Special Education	31	9,31
	Primary School Education	31	9,31
	Social Studies Education	29	8,71
	English Language Education	25	7,51
	Music Education	16	4,80
	Science Education	10	3,00
	Art Education	4	1,20
Class	1	10	3,00
	2	89	26,73
	3	167	50,15
	4	67	20,12

Examination of Table 1 reveals that 73.27% of the preservice teachers who participated in the study were female (n = 244), while 26.73% were male (n = 89), indicating that female participants constituted the majority of the study group. Regarding departmental distribution, the highest participation was from the Department of Elementary Mathematics Education with 17.12% (n = 57), followed by Preschool Education (13.81%), Turkish Language Education (13.21%), Guidance and Psychological Counseling (12.01%), Special Education (9.31%), and Primary Education (9.31%). The lowest participation rate was observed in the Department of Art Education with 1.20% (n = 4). In terms of year level, the majority of the participants were third-year students (50.15%, n = 167), followed by second-year students (26.73%, n = 89) and fourth-year students (20.12%, n = 67). First-year students constituted the smallest group, representing only 3% (n = 10) of the sample. Accordingly, most of the participants were third- and fourth-year preservice teachers.

Data Collection Tools

In the study, a Personal Information Form was used to collect demographic data from participants. Additionally, the Individual Innovativeness Scale (IIS) and the Academic Career Awareness Scale (ACAS) were administered to measure the preservice teachers' levels of individual innovativeness and academic career awareness, respectively.

Individual Innovativeness Scale (IIS)

The Individual Innovativeness Scale (IIS) was initially developed by Hurt et al. (1977) to measure individuals' general attitudes toward innovations. The Turkish version of the scale, along with its validity and reliability analyses, was developed by Kılıçer & Odabaşı (2010). The scale consists of 20 items and is administered using a 5-point Likert-type rating (1 = Strongly Disagree, 5 = Strongly Agree). According to the adaptation study, the IIS comprises four subdimensions: Resistance to Change, Opinion Leadership, Openness to Experience, and Risk Taking. These subdimensions aim to analyze various aspects of individuals' attitudinal and behavioral tendencies toward innovation.

The original scale includes 20 items, with some scored positively (items 1, 2, 3, 5, 8, 9, 11, 12, 14, 16, 18, and 19) and others scored negatively (items 4, 6, 7, 10, 13, 15, 17, and 20). To compute an individual's innovativeness score, the total score of the negatively worded items is subtracted from the total score of the positively worded ones, and 42 is added to the result. The overall score can range from 14 to 94. According to these results, individuals obtaining scores higher than 80 are categorized as "Innovators," those between 69 and 80 as "Early Adopters," between 57 and 68 as "Early Majority," between 46 and 56 as "Late Majority," and below 46 as "Laggards." Overall innovativeness can thus be interpreted through the total score. Individuals with scores above 68 are regarded as highly innovative, while those with scores below 64 are viewed as having low innovativeness. The Cronbach's alpha reliability coefficient of the original scale was reported as .82.

A confirmatory factor analysis was conducted in this study to examine the scale's construct validity (χ^2 = 326.54, df = 164, p < .05; CFI = .928, TLI = .916, RMSEA = .055, SRMR = .052). The obtained values indicate that the four-factor structure of the scale is valid for the sample used in this study (Hu & Bentler, 1999). Cronbach's alpha internal consistency coefficient for the total score of the Individual Innovativeness Scale in this research was .724, indicating that the scale has adequate reliability for the current sample.

Academic Career Awareness Scale (ACAS)

In this study, the Academic Career Awareness Scale developed by Dağyar et al. (2021) was used to determine preservice teachers' levels of awareness regarding academic career processes. The scale consists of 31 items and uses a 4-point Likert-type rating scale (1 = I have no knowledge, 4 = I know and can explain in detail). The scale contains no reverse-coded items. It comprises four subdimensions: (1) Becoming a faculty member and working conditions (Items 19-31), (2) Definition and purpose of graduate education (Items 1-7), (3) Graduation requirements (Items 8-10, 15-18), and (4) Application requirements (Items 11-14). The total score that can be obtained from the scale ranges from 31 to 124, with higher scores indicating greater awareness of academic career processes. In the original scale development study, the Cronbach's alpha internal consistency coefficient was reported as .96. In the reliability analysis conducted for this research, the Cronbach's alpha coefficient of the scale was found to be 0.98, indicating that the scale exhibits a high level of internal consistency and reliability.

Research Ethics

Throughout the research process, the principles of scientific research and publication ethics were strictly observed. This study was conducted with the approval of the Tokat Gaziosmanpaşa University Faculty of Education Ethics Committee, granted on 09 April 2025 with decision number 558190.

Data Collection Process

The data were collected online using Google Forms. Classrooms within the relevant faculty were visited, and participants were informed about the study's purpose, the principle of confidentiality, and the data-use process. Informed consent was obtained from preservice teachers who voluntarily agreed to participate, and the survey link was shared with them. The data collection process was completed between April 15 and May 15, 2025.

Data Analysis

The data were analyzed using SPSS 26. Initially, descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed. The distribution of variables was tested for normality using the Kolmogorov-Smirnov and Shapiro-Wilk tests. In addition, skewness and kurtosis values were examined, and Q-Q

plots and histograms were used for visual inspection. The results indicated that the assumptions required for parametric analyses were satisfied. To examine the relationship between preservice teachers' individual innovativeness and their academic career awareness, Pearson correlation analysis was conducted. Subsequently, multiple linear regression analysis was performed to determine the extent to which individual innovativeness predicted academic career awareness.

Findings

This section presents the results obtained from the descriptive and inferential statistical analyses conducted to address the sub-research questions.

Table 2: *Levels of Individual Innovativeness Among Preservice Teachers*

Scale and sub-scales	N	X	SS	Min	Max
Resistance to change	333	3.21	.67	1.00	5.00
Opinion-leading	333	3.81	.62	1.80	5.00
Openness to experience	333	3.94	.55	2.00	5.00
Risk-taking	333	3.29	.81	1.00	5.00
Individual Innovativeness	333	3.55	.46	2.10	4.80

As shown in Table 2, the mean score obtained from the Individual Innovativeness Scale was 3.55 (SD = .46). Among the subdimensions, the highest mean score was observed in Openness to Experience (M = 3.94, SD = .55), while the lowest mean score was found in Resistance to Change (M = 3.21, SD = .67).

Table 3: *Distribution by Individual Innovativeness Categories*

Innovativeness Categories	Individual Innovativeness Score Ranges	*n*	*%*
Innovators	>80	17	5.11
Early Adopters	69-80	99	29.73
Early Majority	57-68	163	48.95
Late Majority	46-56	48	14.41
Laggards	<46	6	1.80
Total		333	100

Table 3 presents the distribution of participants across individual innovativeness categories based on their total scale scores. The results show that 48.95% of the preservice teachers were classified as the Early Majority, 29.73% as the Early Adopters, 14.41% as the Late Majority, 5.11% as the Innovators, and 1.80% as the Laggards.

Table 4: *Descriptive Statistics for Levels of Innovativeness*

Level of Innovativeness	Range	*X*	*SS*	*n*	*%*
Highly Innovative	>68	74.44	5.50	116	34.83
Moderately Innovative	64<X<68	66.12	1.43	68	20.42
Low Innovative	<64	57.11	5.40	149	44.74
Total		64.99	9.12	333	100

According to the score ranges presented in Table 4, 34.83% of the participants scored above 68 and were classified as highly innovative, 20.42% scored between 64 and 68 and were classified as moderately innovative, and 44.74% scored below 64 and were classified as having low levels of innovativeness. The mean total innovativeness score of the sample was calculated as 64.99 (SD = 9.12), which falls within the score range defined as moderate innovativeness.

Table 5: *Descriptive Statistics for Levels of Innovativeness*

	N	X	SS	Min	Max
Becoming a Faculty Member and Its Requirements	333	2.24	.77	1	4
Definition and Purpose of Graduate Education	333	2.66	.64	1	4
Graduation Requirements	333	2.09	.78	1	4
Admission Requirements	333	2.36	.87	1	4
Total Academic Career Awareness	333	2.32	.69	1	4

As presented in Table 5, the mean total score obtained from the Academic Career Awareness Scale was 2.32 (SD = .69). Considering that the possible mean score range of the scale is between 1 and 4, this value corresponds to the middle range of the scale. Among the subdimensions, the highest mean score was observed in the Definition and Purpose of Graduate Education dimension (M = 2.66, SD = .64), while the lowest was in the Graduation Requirements dimension (M = 2.09, SD = .78).

The association between the mean scores of the Individual Innovativeness Scale and the Academic Career Awareness Scale was examined through the Pearson correlation coefficient. The findings of this analysis are displayed in Table 6.

Table 6: *Relationship Between Preservice Teachers' Perceptions of Academic Career Awareness and Their Levels of Individual Innovativeness*

	Becoming a Faculty Member and Its Requirements	Definition and Purpose of Graduate Education	Graduation Requirements	Admission Requirements	Total Academic Career Awareness
Resistance to change	.073	.143**	.003	.108*	.082
Opinion-leading	.164**	.203**	.134*	.252**	.195**
Openness to experience	.225**	.250**	.213**	.307**	.262**
Risk-taking	.219**	.114*	.213**	.187**	.212**
Individual Innovativeness	.205**	.248**	.149**	.275**	.231**

*p< .05, **p< .01

The relationships between preservice teachers' levels of individual innovativeness and academic career awareness were examined using Pearson correlation analysis (Table 6). The results showed a positive and statistically significant correlation between the total scores of individual innovativeness and academic career awareness ($r = .231$, $p < .01$).

Statistically significant positive correlations were also observed between academic career awareness and the subdimensions of Openness to Experience (r = .262, p < .01), Opinion Leadership (r = .195, p < .01), and Risk Taking (r = .212, p < .01). No statistically significant relationship was found between Resistance to Change and total academic career awareness (r = .082, p > .05).

Positive and statistically significant correlations were found between the total score of the Individual Innovativeness Scale and all subdimensions of the Academic Career Awareness Scale. The strongest relationship was observed with the Application Requirements subdimension (r = .275, p < .01), while the weakest was with the Graduation Requirements subdimension (r = .149, p < .01). The Resistance to Change subdimension showed significant positive correlations only with the Definition and Purpose of Graduate Education (r = .143, p < .01) and Application Requirements (r = .108, p < .05), whereas no significant relationships were found with the other subdimensions. In contrast, the Opinion Leadership subdimension was significantly and positively correlated with all subdimensions of academic career awareness, with the strongest relationship observed for Application Requirements (r = .252, p < .01). Similarly, Openness to Experience and Risk Taking were positively and significantly correlated with all subdimensions of academic career awareness. The highest correlation was observed between Openness to Experience and Application Requirements (r = .307, p < .01), while Risk Taking showed the strongest association with the total academic career awareness score (r = .212, p < .01).

Table 7 presents the results of the multiple linear regression analysis conducted to determine whether participants' levels of individual innovativeness predict their levels of academic career awareness.

Table 7: *Multiple Linear Regression Analysis on the Effect of Individual Innovativeness on Academic Career Awareness*

	B	*SE*	*β*	*t*	*p*	VIF
Constant	26.101	9.089	-	2.872	.004	-
Resistance to change	.044	.221	.011	0.200	.841	1.112
Opinion-leading	-.097	.530	-.014	-0.183	.855	2.101
Openness to experience	1.719	.605	.223	2.839	.005	2.223
Risk-taking	1.927	.743	.146	2.595	.010	1.137
R=.296 R^2 =.088	$F_{(4, 328)}$ = 7.874, p < .001 Durbin-Watson = 1.790					

The results of the multiple linear regression analysis are presented in Table 7. The overall regression model was statistically significant (F(4, 328) = 7.874, p < .001). The independent variables explained approximately 8.8% of the variance in academic career awareness (R^2 = .088), with an adjusted R^2 value of .076. The analysis showed that Openness to Experience (β = .223, p = .005) and Risk Taking (β = .146, p = .010) were significant predictors of academic career awareness. In contrast, Resistance to Change (p = .841) and Opinion Leadership (p = .855) were not significant predictors.

Discussion

The present study examined the relationship between preservice teachers' individual innovativeness and their academic career awareness. Consistent with previous research, the findings indicate that preservice teachers generally demonstrate moderate levels of individual innovativeness and are predominantly categorized as early adopters or early majority, while innovators and laggards are less frequently observed (Bitkin, 2012; Erden & Erden, 2020; Kılıç, 2015; Öztürk-Yurtseven & Aldan Karademir, 2017; Yalçın İncik, 2020). Similar patterns have been reported in national and international studies, suggesting that preservice teachers tend to be open to innovation but approach implementation cautiously, particularly in terms of risk-taking (Karabulut Coşkun & Bayır, 2025).

The results further revealed that individual innovativeness is positively associated with academic career awareness, particularly through the dimensions of openness to experience and opinion leadership. These findings align with prior studies demonstrating that innovativeness is closely related to professional development, lifelong learning, and self-efficacy (Kılıçer, 2011; Parlar & Cansoy, 2017). However, the present study extends the existing literature by conceptualizing individual innovativeness not only as a descriptive personal trait but also as a cognitive orientation that supports awareness of academic career pathways.

Although individual innovativeness was a significant predictor of academic career awareness, the regression model's explanatory power was relatively modest. This result is consistent with previous research indicating that academic career awareness is shaped by multiple factors beyond individual characteristics, including access to information, mentoring opportunities, and institutional support mechanisms (Çelik et al., 2022; İlter, 2021). Thus, while innovativeness contributes to academic orientation, environmental and contextual factors appear to play a complementary role.

In terms of academic career awareness, preservice teachers demonstrated higher awareness regarding the process of becoming a faculty member, whereas their knowledge of application and graduation requirements was more limited. Similar findings have been reported in earlier studies, which emphasize that preservice teachers often lack detailed information about formal academic procedures despite expressing interest in graduate education (Çelik et al., 2022; İlter, 2021). This pattern highlights the need for more systematic guidance and informational support within teacher education programs.

The reliability coefficient for the Individual Innovativeness Scale in the present study (α = .724) is acceptable according to commonly accepted thresholds in social science research. Given the scale's multidimensional structure and its adaptation to a specific sample of preservice teachers, this level of internal consistency is consistent with previous studies using similar populations. Nevertheless, the relatively moderate

reliability coefficient should be taken into account when interpreting the findings related to individual innovativeness.

This finding indicates that academic career awareness is influenced not only by individual innovativeness but also by other personal, environmental, and structural factors. Previous studies have shown that variables such as academic self-efficacy, motivation, access to information, and exposure to academic role models play a significant role in shaping preservice teachers' awareness of academic career pathways (Çelik et al., 2022; Dağyar et al., 2021; İlter, 2021). In addition, institutional factors such as mentoring opportunities, guidance services, and clarity of graduate education procedures have been found to influence individuals' academic career planning processes (Çelik et al., 2022; İlter, 2021). In this respect, the relatively modest explanatory power of the regression model in the present study is consistent with the multidimensional nature of academic career awareness reported in the existing literature.

Finally, the reliability coefficient for the Individual Innovativeness Scale was within acceptable limits for social science research, although it remained moderate. This finding should be considered when interpreting the results and suggests that future studies may benefit from employing complementary qualitative approaches to capture the multidimensional nature of innovativeness more comprehensively.

Conclusion and Recommendations

The findings of this study indicate that preservice teachers exhibit moderate levels of individual innovativeness and academic career awareness. Although they tend to be open to innovation, their cautious approach to risk-taking suggests that innovativeness may remain largely at a cognitive level. Regarding academic career awareness, preservice teachers appear to have general knowledge of academic career paths, while their understanding of procedural requirements remains limited. Overall, the results highlight the importance of considering both individual and contextual factors in understanding preservice teachers' academic career development processes.

Based on the findings of this study, several recommendations can be offered for different stakeholders. For future researchers, longitudinal and experimental studies may provide deeper insights into the causal relationships between individual innovativeness and academic career awareness. Employing mixed-method research designs across multiple institutions could also help capture the contextual and experiential dimensions of academic career planning among preservice teachers. For practitioners in teacher education programs, incorporating learning environments that promote innovative thinking and academic inquiry may enhance preservice teachers' awareness of academic career opportunities. Providing structured guidance services, mentoring programs, and informational seminars on graduate education processes, particularly application requirements, may help address existing gaps in academic career awareness. From a policy perspective, higher education institutions and relevant authorities may consider developing systematic mentoring and career guidance mechanisms to support preservice

teachers' academic career planning. Strengthening institutional support structures may contribute to more informed, sustainable, and diversified career pathways within teacher education.

Limitations

The study has several limitations. First, the sample was limited to the Faculty of Education at a single university in the Black Sea region of Türkiye, limiting the generalizability of the findings. Additionally, as the data were based on self-reports, responses may have been influenced by social desirability bias. Examining multidimensional constructs such as individual innovativeness and academic career awareness solely through quantitative data also limits the depth of understanding regarding contextual and experiential factors.

Based on the results, several recommendations can be made. First, to enhance preservice teachers' knowledge of academic career processes, guidance services and informational seminars could be organized within the faculties of education. In particular, increasing awareness regarding application requirements is essential. Furthermore, incorporating more learning environments that promote innovative thinking into teacher education programs may help foster individual innovativeness. Future studies employing mixed-method designs across different universities could provide a deeper understanding of the relationship between individual innovativeness and academic career awareness. Furthermore, longitudinal and experimental studies could provide more robust evidence regarding the causal mechanisms underlying the relationship between individual innovativeness and academic career awareness.

Ethical Approval

Ethical approval and written permission were obtained from the Tokat Gaziosmanpaşa University Faculty of Education Ethics Committee (approval granted at the meeting dated 09 April 2025, meeting no. 558190).

Author Contributions

Emine Saklan: Conceptualization, Theoretical Background, Methodology, Data Analysis, Data Visualization, Writing, Review and Editing

Anıl Mütevellioğlu: Conceptualization, Data Collection

Avni Ünal: Methodology, Data Analysis, Review, and Editing

Conflict of Interest

The authors declare no conflict of interest.

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