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From career awareness to career adaptation: the serial mediating role of career transition

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Introduction: Career awareness plays a critical role in shaping individuals' career paths by enabling them to recognize their skills, interests, and career goals. However, career awareness alone may not be sufficient to ensure career adaptability. It is suggested that this relationship operates through career transition factors, including situational conditions, self-related factors, and social support. Accordingly, this study aimed to examine the mediating role of career transition factors in the relationship between career awareness and career adaptability among high school students.

Methods: The study employed a correlational survey design. Data were collected from 828 high school students attending 10 different schools in Istanbul, Türkiye. Three validated measurement tools were used: the Career Awareness Scale, the Career Transition to Higher Education Scale, and the Career Adaptability Scale. Structural Equation Modeling (SEM) was conducted to test the direct and indirect relationships among variables using IBM SPSS Statistics 29.0 and AMOS 29.0.

Results: The results indicated that career awareness significantly predicted career adaptability. Moreover, career transition factors—namely situation, self, and social support—partially mediated this relationship. Among these factors, situational conditions and social support demonstrated a stronger mediating effect compared to self-related factors.

Discussion: The findings suggest that students with higher levels of career awareness are more likely to adapt successfully to career-related challenges and transitions, particularly when situational barriers are effectively addressed and adequate social support is available. This study contributes to the career development literature by emphasizing the crucial role of career transition factors in enhancing career adaptability. The results were discussed in relation to existing literature, and practical recommendations were proposed for career guidance and counseling practices.

KEYWORDS

career adaptability, career awareness, career transition, social support, structural equation modeling

1 Introduction

Individuals' career development processes have become increasingly complex due to rising uncertainties and the dynamic nature of labor market conditions (Brown and Lent, 2019; Savickas, 2013). The transformation of traditional occupational structures now necessitates that individuals possess not only technical expertise but also psychological and social competencies (Hall, 2004; Hirschi, 2018). Within this context, career awareness emerges as a foundational concept, allowing individuals to identify their abilities and interests, set professional goals, and engage in conscious planning (Lent et al., 2000; Super, 1990; Yaşar and Sunay, 2019). While important, career awareness alone may not ensure successful adaptation to career-related challenges. Furthermore, career awareness contributes to transition readiness by enabling adolescents to anticipate future demands,

engage in early goal-setting, and make informed decisions regarding post-secondary pathways (Lent et al., 2016; Savickas, 2013). Career adaptability reflects the individual's capacity to navigate career transitions and cope with associated difficulties (Hirschi et al., 2020; Koen et al., 2012; Savickas and Porfeli, 2012; Söner et al., 2024; Tunç and Tunç, 2022).

The effectiveness of career awareness in fostering adaptability is shaped by situation, self, and support (Anderson et al., 2012; Lent and Brown, 2013). Schlossberg's transition model emphasizes three major components that determine how individuals manage career transitions (Anderson et al., 2012; Lent et al., 2016; Schlossberg, 2011; Söner and Tunç, 2025). These transitions, which include not only shifts from education to work but also critical educational milestones such as moving from high school to university, have a significant impact on adolescents' career adaptability (Koen et al., 2012; Savickas, 2013; Söner, 2023). Social support from family, peers, and educators further strengthens this process by enhancing individuals' confidence and resilience (Blustein et al., 2019; Hirschi et al., 2020). This study, therefore, investigates the influence of career awareness on adaptability and the mediating role of transition-related factors—situation, self, and support—offering theoretical and practical insights into vocational guidance for high school students. Accordingly, this study addresses the following research questions:

RQ1: How does career awareness influence career adaptability in high school students?

RQ2: What are the mediating roles of situational, support, and individual factors in this relationship?

RQ3: Do these mediating variables function in a serial sequence as proposed in the theoretical model?

1.1 Career awareness and its role in career adaptability

Today's rapidly evolving job market demands not only specialized skills but also psychological flexibility and an adaptable mindset to navigate increasingly complex career paths (Fouad and Bynner, 2008; Urbanaviciute et al., 2019). Within this context, career awareness plays a pivotal role in informed decision-making and career transition management, as it enables individuals to identify their abilities and interests, set professional goals, and engage in conscious planning (Cohen and Patterson, 2012; Negru-Subtirica and Pop, 2016; Savickas and Porfeli, 2012). Research consistently shows that individuals with higher levels of career awareness are better equipped to respond to uncertainty, act proactively, and adapt to changing labor market conditions (Briscoe et al., 2006; Tams and Arthur, 2010; Zacher, 2014). In a globalized world characterized by frequent career shifts, awareness also promotes openness to diverse career paths and supports more strategic career development (Hirschi, 2018; Koen et al., 2012). Nevertheless, although career awareness is a necessary condition for adaptive career behavior, it is not sufficient on its own. Its effectiveness depends on how awareness is translated into action through mediating mechanisms such as self-related psychological resources and external support systems (Gati and Asher, 2001; Hall, 2004; Hirschi et al., 2020).

Accordingly, this study extends the existing literature by modeling not only parallel mediation pathways but also a theoretically grounded serial mediation structure based on Schlossberg's Transition Theory, which has rarely been applied to high school populations in LMIC contexts (Luo et al., 2025; Zhang et al., 2025). Career transition constitutes a key mediating mechanism in this framework, as individuals who are more aware of their abilities and goals are more likely to engage in structured planning and experience smoother transitions across educational phases (Koen et al., 2012; Wilkins-Yel et al., 2018). Empirical evidence consistently indicates that individuals with low career awareness face greater difficulties in adapting to career-related demands (Pinto and Taveira, 2013; Rudolph et al., 2017). While previous studies have largely focused on direct associations between awareness and adaptability, the present study introduces a serial mediation model that captures how environmental, relational, and internal factors unfold cumulatively during high school transitions—an area that remains relatively underexplored (Creed et al., 2016a; Duffy et al., 2015; Hirschi and Valero, 2017; Santilli et al., 2020). Within this perspective, career adaptability is understood as the capacity to manage the psychological demands of transitions, shaped jointly by self and situational conditions (Johnston, 2018; Savickas, 2013). Theoretical models such as Social Cognitive Career Theory further emphasize that self and support play critical mediating roles in this process (Domene et al., 2012; Lent et al., 2016; Rottinghaus et al., 2017). In adolescent and educational settings, greater career awareness has been shown to enhance preparedness and adaptability in shaping future career trajectories (Nota and Soresi, 2015; Wilkins-Yel et al., 2018). Thus, this study aims to clarify the mechanisms through which career awareness contributes to adaptability among high school students, offering implications for targeted career guidance and counseling interventions (Negru-Subtirica and Pop, 2016; Wilkins-Yel et al., 2018).

1.2 Schlossberg's transition model as a theoretical framework

Schlossberg's Transition Model provides a comprehensive theoretical framework for understanding how individuals experience and cope with career-related transitions. Originally developed to explain adult life transitions, the model has been widely applied to educational and career contexts (Anderson et al., 2012; Barclay, 2015; Schlossberg, 2011). The model conceptualizes transition through four interrelated components: Situation, Self, Support, and Strategies, commonly referred to as the 4S System (Cherrstrom, 2014). The Situation component refers to the contextual factors surrounding a transition, including timing, control, role change, institutional constraints, and access to resources. In educational transitions—such as the shift from high school to higher education—situational conditions encompass economic factors, guidance services, institutional structures, and perceived barriers or opportunities (Söner and Yilmaz, 2025). The Support component captures the relational resources available during transitions, such as family, teachers, peers, and broader social networks, which play a vital role in

buffering stress, enhancing decision-making, and promoting adaptive coping strategies (Wall et al., 2018). The Self component reflects internal psychological resources—including self-efficacy, resilience, motivation, and goal clarity—that shape how individuals interpret situational demands and mobilize available supports (Hwang, 2024). Finally, Strategies refer to the coping responses and action-oriented behaviors individuals employ to manage transition-related demands. These strategies may include problem-solving, information seeking, goal adjustment, help-seeking behaviors, and emotion regulation, all of which serve as adaptive mechanisms for maintaining balance during life changes (Pendleton, 2007). Importantly, strategies are not static traits but context-sensitive responses that emerge through the dynamic interaction between situational conditions, available support, and personal psychological resources (Deps and de Cara, 2019). Within Schlossberg's framework, coping strategies play a pivotal role in facilitating adaptation, particularly in educational and career settings where individuals must manage uncertainty and stress (Scribner et al., 2020). Crucially, Schlossberg's model follows a developmental and serial logic, suggesting that individuals first interpret situational conditions, then activate support systems, draw upon self-related psychological resources, and ultimately employ strategies to cope effectively with transition demands (Moran, 2017). In the present study, Strategies are conceptually embedded within career adaptability, representing the behavioral and psychological capacity to manage transitions successfully. This modeling decision is methodologically justified, as the Career Transition to Higher Education Scale used in the Turkish sample operationalizes transition through three components—Situation, Support, and Self—without a distinct strategies dimension. Accordingly, although strategies are not modeled as a separate mediator, they are theoretically reflected in the adaptability outcomes, which capture individuals' capacity to enact adaptive responses during career transitions. Grounded in Schlossberg's Transition Theory, this framework explains how career awareness evolves into career adaptability through the ordered mechanisms of Situation, Support, and Self, culminating in adaptive career-related strategies.

1.3 Career transitions as mediators: theoretical and empirical perspectives

Career development processes have become increasingly complex under the influence of volatile labor market conditions and growing uncertainties (Brown and Lent, 2019; Savickas, 2013). In Türkiye, the career transition challenges faced by adolescents, particularly during the transition from high school to work or further education, have been relatively understudied (Berber, 2022). While career counseling efforts often target high school students, they predominantly focus on university preparation rather than broader career adaptability (Çarkit, 2019; Söner, 2023; Yeşilyaprak, 2012). For high school students, career awareness is crucial for informed decision-making (Gati and Asher, 2001; Hirschi et al., 2020). However, career awareness alone does not ensure adaptive career behavior. Its impact is mediated by mechanisms that influence how awareness translates into action.

In this study, we propose that the effect of career awareness on adaptability unfolds through a theoretically grounded sequence of mediating variables: situation, support, and self. This approach aligns with Schlossberg's Transition Theory, which conceptualizes transitions as a dynamic process shaped by context (situation), resources (support), and internal capacity (self; Anderson et al., 2012). By modeling these components in a serial mediation structure, as opposed to parallel models in previous literature (e.g., Gati and Asher, 2001; Rottinghaus et al., 2017), we offer a more ecologically valid depiction of adolescent transition logic. Specifically, our model captures how high school students' awareness of future career paths first activates situational processing, which then mobilizes social support networks, ultimately enhancing self-related psychological resources. This serial framing reflects a developmental causality that is rarely operationalized in previous empirical studies, especially in LMIC (Low- and Middle-Income Countries) contexts, such as Turkey. Thus, this study contributes a nuanced explanatory model that bridges career awareness and adaptability through a temporally ordered self and situation.

1.4 Contextual, relational, and personal factors in serial mediation

In this study, career transition is defined as the developmental phase in which high school students move from compulsory education toward decisions about higher education and future occupational directions. Although this stage does not involve formal workforce entry, it represents a critical precursor to future career success, as it requires anticipatory planning, decision-making, and psychological readiness (Hirschi et al., 2020; Koen et al., 2012). In line with Schlossberg's transition theory, these transitions are shaped by the interaction of situation, support, and self (Anderson et al., 2012). Recent research indicates that perceived support and self-related resources jointly mediate stress-related academic outcomes among adolescents, highlighting their role as resilience-building mechanisms (Păduraru et al., 2025; Shao et al., 2025). Additionally, social capital has been demonstrated to influence psychological resources and indirectly promote adaptability through sequential mechanisms (Yuan et al., 2025). Accordingly, the present study employs a structurally layered mediation model in which situational conditions facilitate access to support systems, which in turn shape self-related resources such as resilience and goal setting. This sequencing reflects an ecologically valid developmental logic—situational conditions → social support → self—suggesting that all three layers must be addressed simultaneously to understand how career awareness translates into adaptability during school-to-career transitions.

Situational factors such as access to university preparation resources, economic pressures on educational choices, and institutional support for career development are particularly salient during high school transitions (Fugate et al., 2004; Greenhaus and Callanan, 2006; Savickas, 2013). Under conditions of economic uncertainty, individuals may adopt more cautious or flexible career strategies (Akkermans et al., 2018; Creed et al., 2016b; Koen et al., 2012), while educational institutions play a mediating role

by providing career counseling and mentorship that enhance awareness and decision-making skills (Pinto and Taveira, 2013; Santilli et al., 2020; Vanhercke et al., 2014). Family socioeconomic status, cultural norms, and regional disparities further shape students' capacity to develop meaningful career awareness and adaptability (De Vos and Soens, 2008; Hirschi et al., 2020; Johnston, 2018). Beyond contextual influences, individual psychological factors—such as self, resilience, goal setting, and self-regulation—strongly affect how awareness is translated into adaptive behavior (Lent et al., 2016; Negru-Subtirica and Pop, 2016; Söner, 2023). Even prior to workforce entry, adolescents' self-related resources influence how they approach educational and career decisions, with higher self-efficacy, motivation, and academic self-regulation predicting greater persistence and self-directed decision-making (Hall, 2004; Porfeli and Savickas, 2012; Tams and Arthur, 2010). Social support from family, teachers, and peers complements these personal resources by buffering stress and reinforcing adaptive behaviors, particularly in collectivist contexts such as Türkiye (Blustein et al., 2019; Söner, 2023; Zacher, 2014). Empirical evidence further shows that mentorship enhances awareness and navigation of educational and occupational pathways (Hirschi, 2018; Praskova et al., 2015). In the present study, transition readiness was assessed using the Career Transition to Higher Education Scale, which captures anticipatory planning, clarity of career goals, and confidence in navigating educational decisions. While international studies have demonstrated similar layered mediation mechanisms among university and doctoral populations (Zhang et al., 2025; Luo et al., 2025), research applying such serial frameworks to high school students—particularly within LMIC contexts—remains scarce. Addressing this gap, the present study applies Schlossberg's transition model to examine how contextual, relational, and personal factors sequentially mediate the relationship between career awareness and career adaptability among Turkish high school students.

1.5 The present study

In response to growing labor market volatility and increasing career uncertainty, this study investigates the impact of career awareness on adaptability among high school students, with a focus on the mediating role of career transition elements. The proposed model assumes that career awareness facilitates proactive educational planning (transition readiness), which is shaped by the student's situation, support, and self. Each component builds upon the preceding one to strengthen adaptability outcomes. While career awareness is widely recognized as essential for informed decision-making, its impact on career adaptability is not linear and depends on multiple interrelated factors. Drawing on Schlossberg's transition model, the study explores how situational conditions (e.g., economic environment, access to education), individual characteristics (e.g., self-efficacy, resilience), and social support systems (e.g., family, teachers, peers) interact to mediate this relationship. Although prior studies have examined the roles of career awareness and adaptability separately, few have explored how situation, support, and self-mediate this relationship in an integrated, serial manner—particularly within high school student populations in non-Western contexts. Despite growing interest

in mediational career development models, existing research has predominantly focused on university or early-career populations. This study uniquely applies a serial mediation framework to a sample of high school students in Turkey, a context that is underrepresented in global vocational research. By doing so, it expands theoretical insights and responds to calls for more culturally diverse and developmentally targeted models of career adaptability (Hirschi, 2018; Zhang et al., 2025). While a parallel mediation model could statistically represent the independent effects of situational, social, and self, the current study prioritizes a developmental logic: students first encounter situations, followed by relational support systems, which then shape their self. This order aligns with developmental career theories and real-world transition processes during adolescence (Lent and Brown, 2013; Schlossberg, 2011). By employing structural equation modeling, both the direct and indirect pathways from career awareness to adaptability are empirically examined. Adolescence, being a formative stage for vocational development, provides a critical context for understanding these processes. The findings are expected to advance theoretical models of career development and inform practical strategies in career counseling by identifying key leverage points—particularly enhancing awareness, strengthening self, and ensuring support—to improve students' capacity for adaptive transition in an increasingly unpredictable professional landscape. In this framework, we hypothesize that higher levels of career awareness enhance students' ability to manage educational transitions, serving as a developmental precursor to long-term career adaptability. Previous studies have shown that gender differences may influence career decision-making styles, support, and adaptability levels during adolescence (Nota et al., 2012; Patton and Creed, 2007; Wilkins-Yel et al., 2018). Therefore, gender was included in the model as a control variable to account for its potential confounding effects on the main relationships. In this context, the hypotheses adopted in the study are as follows;

- H₁. Career awareness has a direct positive effect on career adaptability.
- H₂. Situational, support, and individual factors jointly mediate the effect of career awareness on career adaptability.
- H₃. The mediation effect follows a serial pathway: situation → support → self.
- H₄. Gender has a significant effect on career adaptability and is included as a control variable.

2 Method

2.1 Research design

This quantitative study employed a correlational survey design to investigate the relationship between career awareness, career transition (situation, self, and support), and career adaptability among high school students. A serial mediation model was employed to investigate the mediating roles of career transition factors (situation, support, and self) in the link between career awareness and career adaptability. Data were gathered from high school students using a criterion sampling strategy to investigate these constructs and their relationships within the proposed model. The decision to employ a serial mediation model was grounded

in Schlossberg's transition theory, which posits a developmental sequence whereby situational influences the availability and effectiveness of support, which in turn shapes the self. Accordingly, the model tests a logical progression from environmental to relational to self, mirroring the real-world transition experiences that adolescents undergo. Although a parallel mediation structure could statistically capture the independent roles of situation, support, and self, such a model would overlook the dynamic interplay and directional influence that characterizes adolescents' experience during educational transitions. This sequential logic follows Schlossberg's emphasis on the temporal order of transition coping resources: "situation" sets the external conditions, "support" modifies the relational environment, and "self" reflects the individual's internal capacity to act, thereby informing the hypothesized mediation paths. Thus, the serial order reflects a more ecologically valid and theory-aligned framework.

2.2 Participants

As part of the data collection process, survey data were collected from 1,200 high school students enrolled in six different public high schools in the Istanbul district. However, the final analyses were conducted according to pre-determined inclusion and exclusion criteria aimed at improving data quality and statistical power for advanced studies such as structural equation modeling. In this context, outliers exceeding the ± 3.0 z-score threshold (Field, 2018), responses with more than 10% missing data (Dong and Peng, 2013), and inconsistent or low-quality response patterns (e.g., straight line responses; Meade and Craig, 2012) were excluded from the analysis. As a result of this comprehensive elimination process, data from 828 students were considered valid and included in the analyses. This sample size is sufficient to detect small to medium effect sizes at $\beta \approx 0.20$ with 80% statistical power (Cohen, 1992), supporting the reliability of the study's findings.

As demonstrated in Table 1, 495 of the high school students participating in the study were female (59.8%), and 333 (40.2%) were male. In addition, 335 (40.5%) of the high school students were in the 9th grade, 147 (17.8%) of them were in the 10th grade, 182 (22%) of them were in the 11th grade, and 162 (19.4%) were in the 12th grade. Regarding Age, 471 participants (56.9%) were in the 13–15 age group, and 357 participants (43.1%) were in the 16–19 age group. For School, 70 participants (8.5%) attended Fahreddin Kerim Gökay Anatolian High School, 73 participants (8.8%) were from Sefakoy Anatolian High School, 135 participants (16.3%) came from Orhan Gazi Anatolian High School, 280 participants (33.8%) were from Orhan Cemal Fersoy Anatolian High School, 195 participants (23.6%) attended Kucukcekmece Vocational and Technical High School, and 75 participants (9.1%) were from Ismet Aktar Vocational and Technical Anatolian High School.

2.3 Measurement

The research data were gathered utilizing three scales. The Career Awareness Scale was developed by Öztürk and Sirin (2020). The Career Transition to Higher Education Scale was developed

by Söner and Yilmaz (2024). Savickas and Porfeli (2012) developed the Career Adapt-Abilities Scale and adapted it for use in Turkish by Büyükgöze-Kavas (2014). The information about the scales is presented below:

2.3.1 Career awareness scale

The Career Awareness Scale, developed by Öztürk and Sirin (2020), comprises 31 items across six latent dimensions: self-awareness, need for self-awareness, general career awareness, work awareness, competence awareness, and career decision-making. It uses a five-point Likert format ranging from "strongly disagree" to "strongly agree." The total variance explained is 58%, and the Cronbach's alpha for this study was 0.82, indicating good reliability. The model fit was acceptable ($\chi^2/df = 2.83$, RMSEA = 0.053, CFI = 0.914, NFI = 874; GFI = 891; RFI = 860). To enhance clarity, example items include: "I know what a career means to me" and "I know where we can get expert support in our career processes."

2.3.2 Career adaptability scale

The Career Adaptability Scale (CAAS-Turkish) is a 24-item instrument developed initially by Savickas and Porfeli (2012) and adapted into Turkish by Büyükgöze-Kavas (2014). It measures four latent variables—concern, control, curiosity, and confidence—each comprising six items rated on a five-point Likert scale from "not strong" to "strongest." The overall internal consistency reliability for the Turkish form is 0.91, with subscale reliabilities ranging from 0.74 to 0.81. In the current study, Cronbach's alpha was 0.81, and fit indices indicated good model alignment ($\chi^2/df = 3.36$, RMSEA = 0.060, CFI = 0.90). Sample items include: "Recognizing the educational and career choices I need to make," and "Planning how to achieve my goals."

2.3.3 Career transition to higher education scale

This measurement tool was developed by Söner and Yilmaz (2025) for high school students. The content validity of the scale was ensured by evaluating a pool of 36 items based on Schlossberg's 4S Transition Model, in accordance with the opinions of field experts; after the pilot application, the structure was reduced to 23 items. The EFA yielded a three-factor structure (Situation, Self, Support) with eigenvalues greater than 1, accounting for 47.56% of the total variance. The factor loadings of the items ranged from 0.404 to 0.764. Confirmatory Factor Analysis (CFA) results, conducted to validate the three-factor structure, indicated acceptable and good fit values ($\chi^2/df = 2.64$, GFI = 0.92, AGFI = 0.90, CFI = 0.917, SRMR = 0.047, RMSEA = 0.05). The reliability of the scale was evaluated using Cronbach's alpha coefficients; internal consistency values were found to be $\alpha = 0.862$ for Situation, $\alpha = 0.855$ for Self, and $\alpha = 0.706$ for Support. Furthermore, test-retest reliability was assessed at 3-week intervals, yielding highly significant correlations for the sub-dimensions ($r = 0.80$ – 0.88 , $p < 0.001$). These findings demonstrate that the scale is a valid and reliable measurement tool for assessing career transition to higher education in a Turkish sample.

2.4 Ethical process

Ethics committee approval, dated 16 February 2024 and numbered 2024/01, was obtained for this study from the Istanbul Sabahattin Zaim University Social and Human Sciences Ethics Committee. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

2.5 Data analysis

The online questionnaire was distributed to high school students via forms, emphasizing voluntary participation. The mean duration for individuals to complete all questionnaires is 15 min. A survey was distributed to 1,200 high school pupils. Following the elimination of outliers, the data was evaluated utilizing forms gathered from 828 high school students. The normality assumptions were assessed during the data analysis procedure. The skewness and kurtosis values, as well as the z-score distribution, were initially analyzed. Cain et al. (2017) assert that a kurtosis-skewness value ranging from -1 to $+1$ signifies a normal distribution. The skewness-kurtosis values were recorded for the Career Awareness Scale (0.99 to -0.55), the self of the Career Transition to Higher Education Scale (0.85 to -0.69), the support (-0.54 to -0.36), and the situation (0.85 to -0.36). The Career Adapt-Abilities Scale ($r = 0.12$ to -0.50) fell within acceptable parameters. The dispersion of the data z-score distribution corroborated the normalcy assumption. In the correlation study, a range of 0.00–0.30 was designated as “low,” 0.31–0.70 as “moderate,” and 0.71–1.00 as “high.” A parametric structural equation model requires adherence to operational definitions of theoretical variables and the specification of anticipated functional forms for causal effects (Kline, 2023). This study employs a structural equation model with direct effects and associated variables to investigate the impact of career transition factors (situation, support, and self) on the relationship between career awareness and career adaptability among high school students. SPSS version 29.0 and AMOS version 29.0 were employed for analysis. The path directions within the SEM were pre-specified based on theoretical assumptions rather than data-driven exploration, ensuring alignment with the conceptual model derived from transition theory. Each latent variable was modeled using its respective subdimensions as observed indicators to operationalize the constructs within the SEM framework. The measurement error terms for each indicator were estimated freely, following AMOS default practices, to accommodate potential unreliability and reflect realistic error structures. For instance, the latent variable “career awareness” was represented by six reflective dimensions—self-awareness and career decision-making—as theoretically grounded in Öztürk and Sirin’s (2020) model. Similarly, “career transition” was disaggregated into “situation,” “support,” and “self” following Schlossberg’s transition framework (Anderson et al., 2012), which emphasizes the serial influence of situation, support, and self in managing educational transitions. This conceptual alignment

TABLE 1 Details regarding the participants.

Variable groups	<i>n</i>	%
Gender		
Female	495	59.8
Male	333	40.2
Age		
13–15 years old	471	56.9
16–19 years old	357	43.1
Graduate level		
9th grade	335	40.5
10th grade	147	17.8
11th grade	182	22.0
12th grade	162	19.4
School		
Fahreddin Kerim Gokay Anatolian High School	70	8.5
Sefakoy Anatolian High School	73	8.8
Orhan Gazi Anatolian High School	135	16.3
Orhan Cemal Fersoy, Anatolian High School	280	33.8
Kucukcekmece Vocational and Technical High School	195	23.6
Ismet Aktar Vocational and Technical Anatolian High School	75	9.1

justified the serial mediation paths tested in the model, establishing an empirically grounded structure with directional coherence.

3 Findings

3.1 Descriptive statistics

Descriptive statistics in Table 2 provide an overview of students’ self-reported levels of career awareness, career transition factors, and adaptability.

Correlation analysis elucidated the relationship between high school students’ opinions of career adaptability, career awareness, and career transition in response to the second research question. The results are presented in Table 3. The “Low,” “Medium,” and “High” levels were not derived from the original scale developers but were determined based on standardized z-score ranges to enhance the interpretability of mean scores (Cohen, 1988). In addition, the measurement properties of the study variables, including item-level factor loadings, reliability, and validity indices, are reported separately in Table 3.

Table 3 presents the measurement items, standardized factor loadings, and reliability indices for all latent variables included in the model. Overall, the results indicate acceptable to strong measurement properties for most constructs. Career Awareness demonstrated adequate internal consistency (Cronbach’s $\alpha = 0.75$; CR = 0.76), although its AVE value (0.37) fell below the recommended threshold, suggesting that while the construct shows sufficient reliability, its convergent validity should be interpreted with caution. This issue is acceptable in theory-driven SEM models

TABLE 2 High school students' perceptions of career adapt-abilities, career awareness, and career transitions' sub-dimensions.

Variables	Sub-dimensions	Min	Max	Mean	Std. Error	Std. Deviation	Level
Career adaptability	Concern	-1.90	1.76	0.18	0.02	0.81	Medium
	Control	-1.83	1.60	0.18	0.02	0.81	Medium
	Curiosity	-1.87	1.59	0.18	0.02	0.83	Medium
	Confidence	-1.88	1.59	0.17	0.02	0.80	Medium
	Total	-1.92	2.01	0.20	0.02	0.78	Medium
Career transition	Situation	-3.75	3.51	0.43	0.05	10.44	High
	Self	-3.56	3.15	0.42	0.05	10.47	High
	Support	-3.71	2.47	0.39	0.04	10.36	High
Career awareness	Self-awareness	-1.91	1.20	0.17	0.02	0.79	Medium
	Need for self-awareness	-1.74	1.68	0.21	0.03	0.85	Medium
	General career awareness	-1.75	1.40	0.16	0.02	0.79	Medium
	Work awareness	-1.85	1.24	0.19	0.03	0.78	Medium
	Competence awareness	-1.85	1.94	0.07	0.03	0.89	Low
	Career decision	-1.82	1.68	0.17	0.03	0.92	Medium
	Total	-1.91	2.11	0.21	0.03	0.82	Medium

Min, minimum; Max, maximum; Std. Error, standard error of the mean; Std. Deviation, standard deviation. Level categories (Low, Medium, High) were determined based on standardized z-score cut-off values.

TABLE 3 Measurement items, factor loadings, and reliability indices.

Construct	Item	Factor loading	Cronbach's α	CR	AVE
Career awareness	Self-awareness	0.43	0.75	0.76	0.37
	Need for self-awareness	0.46			
	General career awareness	0.79			
	Work awareness	0.86			
	Competence awareness	0.51			
	Career decision	0.45			
Situation	Situation 1	0.84	0.84	0.85	0.73
	Situation 2	0.87			
Support	Support 1	0.35	0.33	0.20	0.11
	Support 2	0.32			
Self	Self 1	0.91	0.90	0.90	0.81
	Self 2	0.89			
Career adaptability	Concern	0.69	0.82	0.81	0.52
	Control	0.68			
	Curiosity	0.75			
	Confidence	0.77			

CR, composite reliability; AVE, average variance extracted.

where content validity is prioritized. The Situation construct showed strong psychometric quality, with high factor loadings (0.84–0.87), satisfactory reliability ($\alpha = 0.84$; CR = 0.85), and good convergent validity (AVE = 0.73). In contrast, Support exhibited relatively low factor loadings (0.32–0.35) and weak reliability indices ($\alpha = 0.33$; CR = 0.20; AVE = 0.11), indicating limited internal consistency; however, it was retained in the model due to

its theoretical centrality within Schlossberg's transition framework and its significant structural paths. The Self construct demonstrated excellent reliability and convergent validity, with high factor loadings (0.89–0.91), strong internal consistency ($\alpha = 0.90$; CR = 0.90), and a high AVE (0.81). Finally, Career Adaptability showed satisfactory measurement quality, with moderate to high factor loadings (0.68–0.77), good reliability ($\alpha = 0.82$; CR = 0.81), and

TABLE 4 Pearson-moment correlation results on the relationship between career awareness, career transition, and career adaptabilities sub-dimensions.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Concern (1)	1														
Control (2)	0.421**	1													
Curiosity (3)	0.527**	0.497**	1												
Confidence (4)	0.526**	0.537**	0.591**	1											
Career adapt-abilities (5)	0.776**	0.770**	0.817**	0.830**	1										
Personal awareness (6)	0.432**	0.361**	0.427**	0.486**	0.534**	1									
Need for self-knowledge (7)	0.295**	0.222**	0.221**	0.268**	0.315**	0.347**	1								
General career awareness (8)	0.385**	0.268**	0.369**	0.351**	0.430**	0.471**	0.285**	1							
Work awareness (9)	0.429**	0.281**	0.404**	0.392**	0.471**	0.541**	0.399**	0.708**	1						
Competence awareness (10)	0.217**	0.198**	0.278**	0.256**	0.297**	0.322**	0.185**	0.458**	0.434**	1					
Career decision (11)	0.380**	0.209**	0.194**	0.278**	0.333**	0.314**	0.483**	0.297**	0.404**	0.143**	1				
Career awareness (12)	0.504**	0.365**	0.456**	0.484**	0.566**	0.715**	0.577**	0.767**	0.843**	0.666**	0.602**	1			
Situation (13)	0.500**	0.493**	0.484**	0.517**	0.625**	0.381**	0.332**	0.380**	0.406**	0.240**	0.328**	0.485**	1		
Self (14)	0.497**	0.439**	0.475**	0.491**	0.596**	0.447**	0.347**	0.430**	0.451**	0.278**	0.315**	0.534**	0.741**	1	
Support (15)	0.160**	0.198**	0.149**	0.188**	0.217**	0.223**	0.290**	0.252**	0.295**	0.075*	0.318**	0.329**	0.302**	0.338**	1

** $p < 0.01$.* $p < 0.05$.

TABLE 5 Regression coefficients among variables.

Relationships between variables	Regression weights				S.R.W. estimate
	Estimate	S.E.	C.R.	<i>p</i>	
Career adapt-abilities ← Situation	0.48	0.03	12.65	***	0.56
Career awareness ← Situation	0.69	0.05	12.44	***	0.55
Career awareness ← Self	−1.22	0.57	−2.13	0.03	−0.90
Career awareness ← Support	0.33	0.06	5.26	***	0.63
Self ← Support	4.42	1.14	3.87	***	1.70
Support ← Situation	0.18	0.04	3.83	***	0.44
Self-awareness ← Career awareness	1.00				0.65
Need for self-awareness ← Career awareness	0.75	0.06	11.72	***	0.45
General career awareness ← Career awareness	1.19	0.06	18.57	***	0.78
Work awareness ← Career awareness	1.28	0.06	19.56	***	0.86
Competence awareness ← Career awareness	0.86	0.06	12.90	***	0.50
Career decision ← Career awareness	0.80	0.06	11.63	***	0.45
Concern ← Career adaptability	1.00				0.69
Control ← Career adaptability	0.94	0.05	16.88	***	0.66
Curiosity ← Career adaptability	1.09	0.05	18.78	***	0.74
Confidence ← Career adaptability	1.09	0.05	19.32	***	0.77
Career awareness ← Career adaptability	0.36	0.04	7.89	***	0.33

Estimate, unstandardized regression coefficient; S.E., standard error; C.R., critical ratio; *p*, significance level; S.R.W., standardized regression weight.

****p* < 0.001.

acceptable convergent validity ($AVE = 0.52$). Taken together, these findings support the adequacy of the measurement model and justify the inclusion of all constructs in the subsequent structural equation modeling analyses.

3.2 Correlation analyses

A Pearson correlation analysis was conducted to investigate RQ2, examining the relationships among career awareness, career transition, and career adaptability. Table 4 presents the intercorrelations among all sub-dimensions of the constructs. Significant and positive correlations indicate that increases in one dimension (e.g., career awareness) are associated with increases in others (e.g., adaptability or transition-related factors), thereby supporting the theoretical linkage between these variables. Although correlating the overall score of Career Adapt-Abilities with its subdimensions may seem redundant, this analysis was included to explore internal structure consistency and identify dominant contributors to overall adaptability in this specific sample. The strength and direction of these relationships provide initial evidence for the hypothesized model and the mediation mechanisms tested in later stages.

Career Adaptability showed strong and positive correlations with its four core dimensions: Concern ($r = 0.776$), Control ($r = 0.770$), Curiosity ($r = 0.817$), and Confidence ($r = 0.830$), indicating a coherent construct structure. Among the dimensions of career awareness, Personal Awareness demonstrated

the strongest correlation with Career Adapt-Abilities ($r = 0.534$), emphasizing the critical role of self-understanding in fostering adaptability. In terms of transition factors, the Situation ($r = 0.625$) and Self ($r = 0.596$) variables were more strongly related to adaptability than Social Support ($r = 0.217$), suggesting that internal and contextual elements may play a greater role in shaping students' career development capacities. Lastly, Career Awareness was significantly associated with Career Decisions ($r = 0.602$), supporting the theoretical assumption that increased awareness enhances informed decision-making.

3.3 Regression findings and preliminary path analysis

To address the third study question, regression analysis was performed to determine the predictive relationships among the variables before model testing. These preliminary regressions were used not for hypothesis testing but to examine multicollinearity, guide model specification, and verify basic predictive pathways before applying the more robust SEM Approach. Table 5 displays the regression weights. Table 4 showed that career adaptability significantly and positively predicted the situation ($\beta = 0.48, p < 0.001$) and career awareness ($\beta = 0.36, p < 0.001$). Additionally, self negatively predicted career awareness ($\beta = -1.22, p < 0.05$), while support significantly and positively predicted career awareness ($\beta = 0.33, p < 0.001$). Moreover, self significantly and positively predicted support ($\beta = 4.42, p < 0.001$), and support positively

TABLE 6 Fit values of structural equation model tested.

Fit indices	Obtained variables	Good fit	Acceptable fit	References
χ^2/sd	4.16	≤ 3	$\leq 4-5$	Carmines and McIver, 1981
RMSEA	0.060	≤ 0.05	0.06–0.08	Browne and Cudeck, 1992
SRMR	0.050	≤ 0.05	0.06–0.08	Hu and Bentler, 1999
GFI	0.940	≥ 0.95	0.90–0.94	Joreskog and Sorbom, 1984
CFI	0.947	≥ 0.95	0.90–0.94	Schermelleh-Engel et al., 2003
IFI	0.940	≥ 0.95	0.90–0.94	McDonald and Marsh, 1990
TLI	0.930	≥ 0.95	0.90–0.94	Joreskog and Sorbom, 1984

predicted the situation ($\beta = 0.18, p < 0.001$). Regarding career awareness, the variables with the highest regression weights were work awareness ($\beta = 1.28, p < 0.001$), general career awareness ($\beta = 1.19, p < 0.001$), competence awareness ($\beta = 0.86, p < 0.001$), career decision ($\beta = 0.80, p < 0.001$), and the need for self-awareness ($\beta = 0.75, p < 0.001$). Additionally, career awareness had a significant and positive relationship with career adaptability ($\beta = 0.36, p < 0.001$). Considering career adaptabilities, the variables with the highest regression weights were confidence ($\beta = 1.09, p < 0.001$), curiosity ($\beta = 1.09, p < 0.001$), control ($\beta = 0.94, p < 0.001$), and concern ($\beta = 1.00, p < 0.001$). Based on the analysis, a structural equation model was developed to illustrate the relationships between career adaptability, career awareness, situation, self, and support. These results support H1, indicating that students with greater career awareness are more adaptable in managing transitions.

After the preliminary analysis, AMOS 29.0 was used to analyze the study data. This approach, known as the serial mediation model, utilizes two or more mediating factors to examine the overall impact of the independent variable on the dependent variable. Finally, the established hypothetical model was expanded to include gender as a covariate.

3.4 Structural equation model and goodness-of-fit

The goodness of fit of the proposed structural model was assessed using widely accepted fit indices, and the results are presented in Table 6.

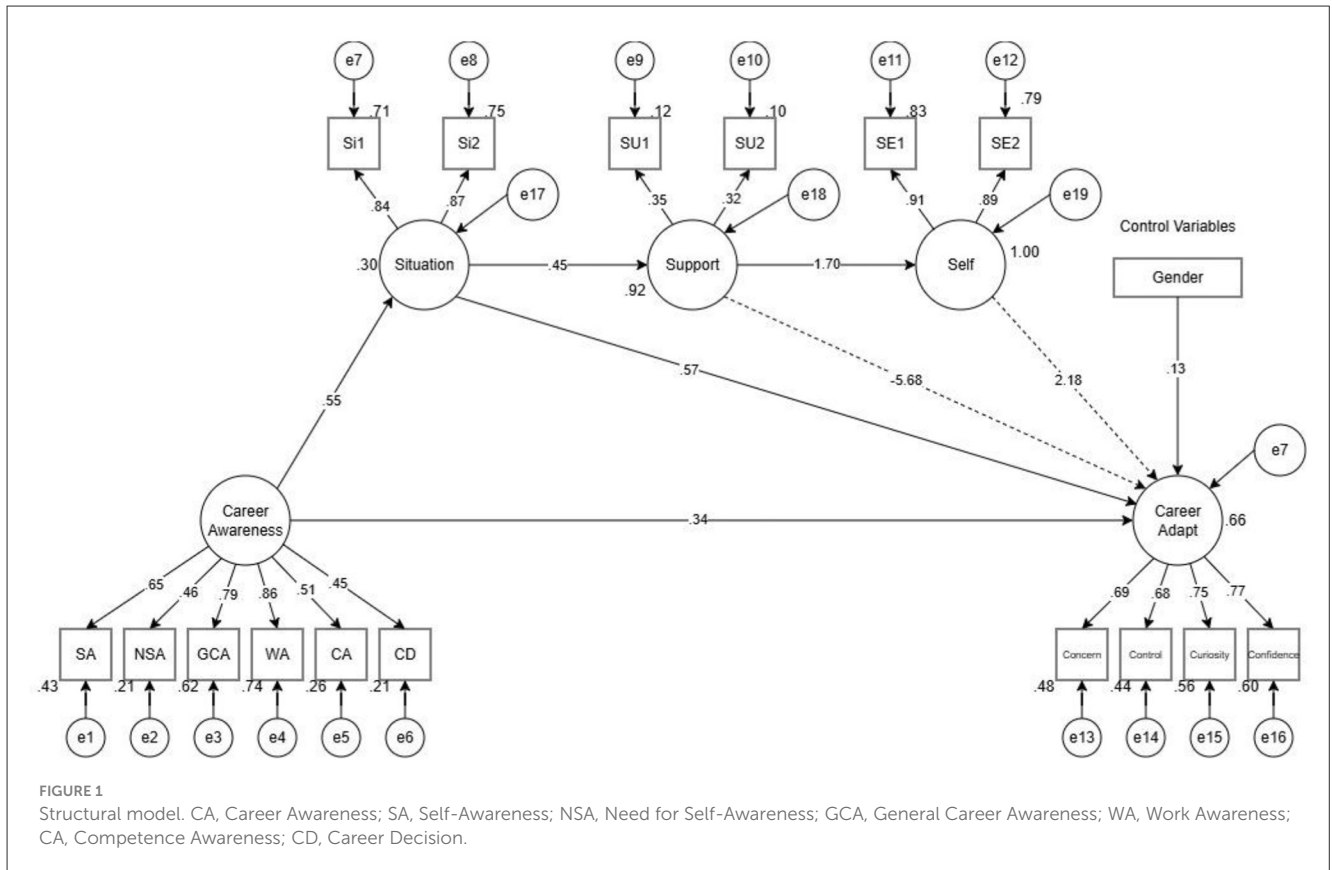
As presented in Table 6, the model yielded a significant chi-square value ($p < 0.01$), along with the following fit indices: $\chi^2/df = 4.16$, RMSEA = 0.060, SRMR = 0.050, CFI = 0.947, GFI = 0.940, IFI = 0.940, and TLI = 0.930. All values fall within the acceptable fit thresholds, indicating that the measurement model provides an adequate fit to the observed data and can be reliably used for testing the structural model.

The structural equation model evaluates the direct effects of the variables: situation, support, self, career awareness, and career adaptability. The relationship among support, career adaptation, and self-career adaptation was determined to be negligible. Figure 1 presents the standardized path coefficients.

As a result of the structural equation model, which analyzes the variables of career awareness, situation, support, self, and career adaptability, direct effects are first evaluated. In Figure 1, the standardized path coefficients are given. As seen in Figure 1, when the direct effects were assessed as a result of the model, career awareness significantly and positively predicts the situation ($\beta = 0.55, p < 0.001$) and support ($\beta = 0.64, p < 0.001$), and negatively predicts self ($\beta = -0.90, p < 0.001$). The negative association between awareness and self is particularly noteworthy. While awareness typically strengthens internal resources, it may reflect heightened self-doubt or anxiety among students facing career decisions—a pattern that warrants further exploration in the discussion. The negative sign for the path from career awareness to self was unintentionally omitted in the figure. This discrepancy has been corrected to reflect the accurate coefficient value of $\beta = -0.90$. Situation significantly and positively predicts support ($\beta = 0.45, p < 0.01$), self ($\beta = 0.162, p < 0.001$), and career adaptability ($\beta = 0.57, p < 0.001$). Among these, the strongest predictor of career adaptability is Situation →

Adaptability, emphasizing that students' perception of their situation—resources, timing, external structure—plays a pivotal role in shaping adaptive responses. The path from support to self ($\beta = 1.70, p < 0.001$) is significant. This suggests that perceived support from family, school, or peers directly enhances students' self-efficacy in navigating career transitions. In this model, gender ($\beta = 0.13, p < 0.001$) was added as a control variable to isolate the effects of gender on career adaptability. This confirms H4, showing that gender has a statistically significant direct effect on career adaptability. Thus, the independent effects of other variables could be evaluated more accurately. In the model developed in this way, the significance of the model was demonstrated by showing that there was no systematic bias by gender. These serial associations validate the proposed serial mediation pathway (H3), whereby career awareness influences adaptability through a progression from situational perception to support, and then to self-factors. This pathway supports the ecological and developmental rationale of the model, affirming that career development is not a single-step process but a layered progression across situation, support, and self.

Taken together, the acceptable model fit indices reported in Table 6, the significant standardized path coefficients illustrated in Figure 1, and the bootstrapped indirect effects presented in Table 7 jointly demonstrate that the proposed model is both statistically sound and theoretically coherent. Rather than representing isolated associations, these results collectively indicate that career awareness operates through a sequential process in which situational perceptions activate social support, which in turn strengthens (or constrains) self-related psychological resources, ultimately shaping career adaptability. This integrated interpretation strengthens the explanatory power of the serial mediation model and addresses the developmental logic underlying adolescents' career transitions.



3.5 Bootstrapping and mediation analysis

Significant correlations between exogenic and endogenic factors are necessary to test the structural equation model incorporating mediating variables (Baron and Kenny, 1986). In this case, the bootstrapping procedure was used to test the significance of the direct and indirect effects of the observable and latent variables in the model, with 1,000 repeated samplings chosen (MacKinnon et al., 2004). It is recommended that researchers investigate the mediating effects of factors using bootstrapping (Preacher and Hayes, 2008). Following the identification of the indirect impact's mediation effect, it is recommended that the effect be further classified as complete (full) or partial mediation based on the significance of X's direct effect (*c'*) on Y. M mediates the effect of X on Y if *c'* is considered negligible (Baron and Kenny, 1986). Table 6 displayed the direct and indirect effect coefficients calculated using the 95% CI.

The direct and indirect coefficients, as well as the significance of the variables in the model, were analyzed using the Bootstrapping method, revealing that the indirect path coefficient elucidating the mediator role was significant. The findings suggest that situation ($\beta = 0.00$, CI= 95%, LB = -0.09, UB = 0.09), self ($\beta = 1.49$, CI = 95%, LB = 0.91, UB = 2.08), and social support ($\beta = 0.24$, CI = 95%, LB = 0.08, UB = 0.39) served as mediators in the link between career awareness and career adaption. These findings support H2, confirming the joint mediating role of situational, support, and self-variables in the link between career awareness and adaptability.

4 Discussion

4.1 H1 and H4: direct effect of career awareness and the role of gender

This study examined the serial mediating role of career transition (situation, support, and self) in the effect of career awareness on career adaptability. According to the structural equation model results, career awareness predicts situations and support significantly and positively, but negatively predicts self. In addition, it was determined that the situation significantly predicted support and self, and ultimately had a direct impact on career adaptability. These findings fully support H1, which proposed that career awareness directly and positively predicts career adaptability. In addition, gender was used as a control variable in the developed model to control for its direct effect on career adaptability and provide a more accurate interpretation of the relationships between the main variables. Considering that gender may indirectly affect the relationships between career awareness and career adaptability, controlling this variable in the model enables a more accurate determination of the independent effects of other variables. These results support H4, as gender exerted a small but statistically significant direct effect on career adaptability. Thus, the possibility of a systematic gender bias in the model was reduced, and the effects of independent variables were analyzed more objectively.

TABLE 7 Bootstrapping for the model.

Model paths	Average effects at 95% confidence interval		
	Coefficient	Lower bound	Upper bound
Direct effect			
Career awareness → Situation	0.55**	0.59	0.80
Career awareness → Self	0.90**	-4.13	-0.38
Career awareness → Social support	0.63**	0.18	0.48
Situation → Career adaptation	0.56**	0.40	0.56
Career awareness → Career adaptation	0.33**	0.26	0.46
Indirect effect			
Career awareness → Situation → Career adaptation	0.00	-0.09	0.09
Career awareness → Self → Career adaptation	1.499**	0.91	2.08
Career awareness → Social support → Career adaptation	0.24**	0.08	0.39

** $p < 0.01$.

4.2 H2: mediating role of situation

In the study, it was found that career awareness significantly and positively predicted the situation. Additionally, it was determined that the situation directly impacted career adaptability. However, the indirect mediation effect of the situation was not statistically significant, indicating that H2 was only partially supported. This finding is consistent with previous research, which shows that the situation individuals encounter during the career transition process determine their career adaptation skills (Koen et al., 2012; Lent et al., 2000). In particular, the opportunities offered by the education system facilitate the individual's adaptation to the career adaptability process, and guidance programs help students develop their career awareness (Mbagwu and Ajaegbu, 2016; Nota and Soresi, 2015). However, it can be said that situational factors often develop beyond the individual's control and, in some cases, have a limiting effect on career development (Akkermans et al., 2018; Castelló et al., 2015). This result suggests that career adaptation may be influenced by both the individual's awareness and situation.

4.3 H2: mediating role of support and self

Career awareness was found to predict support significantly and positively. Additionally, it was found that social support had a significant predictive value for self, and a significant relationship

existed between situation and support. The significant indirect effect of social support in mediating the link between career awareness and career adaptability supports the partial mediation pathway proposed in H2. These results are consistent with the existing literature, which indicates that an individual's support from their environment is crucial to career development (Blustein et al., 2019; Hirschi, 2018; Söner, 2023). It can be said that family, teacher, and peer support help the individual make more informed professional decisions by increasing self in career development (Gati and Asher, 2001; Wilkins-Yel et al., 2018). However, it has been stated that the effect of social support on an individual's career development may vary depending on self and cultural factors (Negru-Subtirica and Pop, 2016). It has been observed that social support mechanisms have a stronger effect in collectivist cultures, such as Turkey, whereas in individualistic cultures, individuals tend to focus more on their decision-making processes (Abankina, 2016; Comins Mingol, 2009). It is seen that individuals do not only base their career decisions on individual competencies and interests, but also that the support and approval mechanisms from their environment play a decisive role in this process. This is because individuals can make bolder and more conscious career choices when they feel a sense of belonging and trust.

Another important finding of the study is that career awareness can be detrimental to the individual. This counterintuitive result may reflect that increased awareness of career complexity and expectations may initially lead to elevated self-doubt or anxiety among high school students facing university entrance pressures. Interestingly, career awareness was negatively associated with the "self" component of transition. This counterintuitive finding may reflect that a highly aware student, while knowledgeable about career demands, may simultaneously experience increased anxiety, doubt, or pressure, leading to a diminished sense of self-perceived efficacy. Such effects have been observed in adolescents exposed to high achievement expectations (Gati and Levin, 2014). This highlights the potential emotional burden of awareness without corresponding support structures. From a developmental perspective, this negative association may reflect a temporary mismatch between adolescents' cognitive awareness of career demands and their still-developing emotional regulation and self-evaluative capacities. In high-stakes, exam-oriented, and collectivist contexts such as Türkiye, heightened career awareness may initially intensify self-discrepancy, anticipatory anxiety, and perceived social pressure, unless adequately buffered by social support (Gati and Levin, 2014; Lent et al., 2017; Guan et al., 2019). In addition, it was determined that support predicted the individual significantly and positively. The strong and significant indirect effect of self confirms its role as a mediator and supports H2. This finding suggests that uncertainties and external factors encountered by individuals during the career process may negatively impact their perception of awareness. The literature states that the stress factors and uncertainties individuals face in the career process may weaken their self-perceptions (Rottinghaus et al., 2017; Savickas and Porfeli, 2012). However, to understand the relationship between career awareness and career adaptability, the individual's psychological resilience and adaptability capacity should also be considered (Lent et al., 2017). Since individuals with high career awareness evaluate their career paths more consciously, they can critically

review their current competencies (Hirschi, 2018). Indeed, it can be said that the impact of career awareness on an individual's psychological wellbeing may vary depending on the perceived level of social support and individual adaptability capacity (Guan et al., 2019). Likewise, although increased competition in the labor market and changing occupational standards increase individuals' career awareness, this may lead to a temporary decline in self-perception (Zacher, 2021). This result can be explained by the fact that individuals perceive the differences between their future career expectations and skills more clearly as career awareness increases. Although individuals who evaluate their competencies more critically may experience a decline from time to time in the face of career awareness, this awareness increases their career adaptability in the long run.

From a developmental and psychological perspective, the negative association between career awareness and the self-component can be interpreted as a form of developmental mismatch, in which adolescents' cognitive awareness of career demands increases faster than their emotional regulation and self-evaluative capacities. During high school years, students may become highly informed about competitive educational pathways, performance standards, and labor market uncertainty, yet lack sufficient psychological resources to integrate this information adaptively. As a result, heightened awareness may temporarily intensify self-discrepancy, anticipatory anxiety, or perceived inadequacy, leading to a short-term weakening of self-related psychological readiness (Higgins, 1989; Lent et al., 2017). Previous studies similarly indicate that increased career-related knowledge can initially elevate doubt and decision-related stress, particularly when individuals perceive a gap between their current competencies and future expectations (Gati and Levin, 2014; Savickas and Porfeli, 2012). This effect may be especially pronounced in high-stakes, exam-oriented educational systems such as Türkiye, where career awareness is closely intertwined with external evaluation, family expectations, and social pressure for upward mobility. In collectivist contexts, heightened awareness may not solely function as an internal resource but may also activate perceived social obligations and fear of failure, thereby increasing psychological burden during adolescence (Blustein et al., 2019; Guan et al., 2019; Negru-Subtirica and Pop, 2016). Importantly, the present findings suggest that career awareness alone does not uniformly enhance self-related resources; rather, its psychological impact is contingent upon the availability of social support. When adequate support is present, awareness can be transformed into adaptive self-efficacy; however, in its absence, increased awareness may temporarily undermine self-perception. This interpretation is consistent with the strong positive path from support to self in the model, highlighting social support as a critical regulatory mechanism that buffers the potentially destabilizing effects of heightened career awareness during adolescence.

Finally, one of the study's most striking findings is that career transition factors play a mediating role in the serial. It was observed that career awareness first affects the situation, then the support and the individual, and these processes are ultimately related to career adaptability. This serial relationship confirms the model proposed in H3, where the mediation follows a serial order: awareness → situation → support → self → adaptability. This

finding can be explained by the Social Cognitive Career Theory (SCCT), which suggests that successive stages play a crucial role in an individual's career development (Lent and Brown, 2013). According to SCCT, an individual's career development process is shaped by both intrinsic factors (self-efficacy, career motivation) and extrinsic factors (social support, environmental conditions), and these factors form a successive interaction model (Savickas, 2013). Research in the literature reveals that career transitions are shaped by self, support, and situation (Hirschi, 2018; Söner, 2023). Uncertainties in the labor market necessitate that individuals act more strategically in their career planning (Guan et al., 2019). Additionally, research has shown that individuals with high career awareness consider themselves and their situation more during their career transition process, thereby increasing their career adaptability (Zacher, 2021). However, insufficient social support, as perceived by the individual, during the career transition process may weaken self-perception and delay the career decision-making process (Spurk and Straub, 2020). These results suggest that self, as well as situation and support, play a role.

Beyond individual and environmental contributions, these findings underscore the cultural embeddedness of career development processes. In collectivist contexts such as Türkiye, students may rely more heavily on familial and communal input when navigating career decisions, which could amplify the mediating influence of social support (Wang et al., 2022). This cultural reliance may also help explain why support had a particularly strong pathway to self-perception. Furthermore, the results not only confirm but also refine Social Cognitive Career Theory (SCCT). Specifically, they highlight how the serial structure of transition—situation → support → self—operates differently across cultures where interdependence and social affirmation are highly valued (Yao and McWha-Hermann, 2025). These findings extend SCCT by revealing how awareness alone may not enhance self-perception unless culturally aligned support structures are available. Thus, this study contributes to SCCT's constructivist turn by situating psychological pathways within sociocultural realities (Lent et al., 2021).

4.4 Model justification and theoretical integration

Although a parallel mediation model could statistically assess the unique effects of situational, social, and personal factors, such an approach would not fully capture the developmental logic underlying transition theory. Specifically, Schlossberg's model emphasizes that individuals experience career transitions as a progression: environmental circumstances first define the context, followed by the mobilization of social support, which then influences internal self-regulation and readiness. Therefore, modeling these components as sequential rather than parallel reflects the reality of how adolescents psychologically and contextually prepare for future careers. Moreover, Social Cognitive Career Theory (Lent and Brown, 2013) supports this sequencing by emphasizing the interplay of situational barriers and resources, social support through encouragement and feedback,

and self-related factors in shaping career development. Within this framework, the individual's awareness becomes meaningful through environmental interpretation and social validation, which ultimately consolidate into psychological adaptability. Empirical findings from the SEM analysis reinforce this model selection, as all paths within the serial (from situation to support, from support to self, and ultimately to career adaptability) yielded statistically significant coefficients. The model also met the acceptable goodness-of-fit criteria, indicating a robust alignment between the theoretical structure and the observed data.

From a process-oriented perspective, the serial mediation chain identified in this study reflects a psychologically coherent developmental sequence rather than a set of independent effects. Career awareness prompts adolescents first to interpret their situational context, including perceived opportunities, barriers, and institutional constraints. This situational appraisal then activates social support mechanisms, as students seek guidance, reassurance, and validation from family, teachers, and peers. Through these supportive interactions, self-related psychological resources—including self-efficacy, confidence, and readiness—are gradually strengthened. In turn, these internal resources enable adolescents to respond more adaptively to career-related transitions. Thus, each mediator functions as a necessary psychological bridge, transforming awareness into adaptability through a cumulative and sequential process.

Moreover, while structural equation modeling inherently identifies correlational relationships, the implementation of a serial mediation model in this study was theoretically justified based on Schlossberg's transition model and the serial influence of situation, support, and self. Recent methodological literature also supports the use of serial mediation models for making bounded causal inferences when the model is grounded in theory and tested with robust data (Ma et al., 2025). Specifically, the proposed pathway progresses from career awareness through situational context and social support to self-related psychological readiness, thereby reflecting a developmentally coherent framework supported by both empirical findings and theoretical models. This serial mediation logic has been successfully applied in similar career development studies to capture the layered nature of influence over time (Çam and Kuş, 2025). Hence, the claim that career transition factors mediate a serial relationship is not merely descriptive but reflects an integrative interpretation of observed data and validated theoretical constructs.

5 Practical implications

The findings of this study suggest that improving career adaptability among high school students necessitates a developmentally staged and theoretically grounded intervention framework. Initially, career awareness should be cultivated through structured curricular programs that help students identify their interests, strengths, and potential career pathways. Such modules may incorporate reflective exercises, career inventories, and guided exploration activities, similar to university-based career planning interventions that have been shown to

enhance students' clarity and confidence during school-to-work transitions (McLennan et al., 2017; Perera and McIlveen, 2014). Subsequently, situational resources—such as access to university counseling services, exposure to diverse professions, and structured preparation for educational transitions—should be enhanced to provide tangible support. Empirical evidence from career counseling programs implemented at the university level demonstrates that tailored guidance services and transition-focused workshops significantly improve students' career optimism and adaptability, particularly during the transition out of full-time education (Hirschi, 2014; Chui et al., 2022). In parallel, social support mechanisms should be strengthened through family engagement initiatives, teacher mentoring, and peer support groups, fostering a relational environment that reinforces self-confidence and sustained motivation. Once these external supports are in place, targeted interventions aimed at enhancing students' psychological readiness—such as workshops focused on self-efficacy, goal setting, and resilience—can be implemented. Prior intervention studies indicate that such workshops yield meaningful gains in career self-efficacy, proactive career behaviors, and long-term adaptability (Buyukgoze-Kavas, 2016; Delle and Searle, 2022). This layered intervention structure mirrors the serial mediation model employed in the present study, wherein career-related psychological resources influence adaptability through a progression of situational, relational, and self-regulatory mechanisms. By integrating empirical evidence with the assumptions of Social Cognitive Career Theory and Career Construction Theory, this framework offers a concrete and evidence-based roadmap for educators, counselors, and policymakers seeking to design effective career development programs for adolescents and emerging adults.

6 Limitations and future directions

6.1 Limitations

This study acknowledges both methodological and conceptual limitations. Methodologically, the reliance on a cross-sectional design and self-report instruments limits causal inference and may introduce response biases. While the sample of high school students provides valuable insight, it restricts generalizability across different age groups and educational stages. Conceptually, the distinction between career awareness and self-efficacy may be blurred, particularly in the context of adolescent self-appraisals. The negative association observed between awareness and self suggests potential bidirectionality—greater awareness may increase anxiety or doubt in the absence of adequate support. In addition, although most constructs demonstrated acceptable reliability and validity, the Support dimension yielded relatively lower internal consistency and convergent validity indices. This limitation may be attributable to the developmental characteristics of adolescent samples and the multifaceted nature of perceived social support during educational transitions. Nevertheless, this construct was retained due to its theoretical centrality within Schlossberg's

Transition Model and its statistically significant role within the serial mediation framework.

6.2 Future directions

Future research could benefit from longitudinal designs to explore the dynamic interplay between career awareness, transition factors, and adaptability over time, as well as mixed-methods approaches to triangulate self-reported perceptions with qualitative insights. To address the potential bidirectionality between awareness and self-related constructs, future studies could implement experimental interventions that manipulate awareness levels and measure downstream psychological outcomes. Moreover, expanding the research across diverse cultural contexts would clarify the extent to which the observed serial mediation model—awareness influencing adaptability through situational, social, and personal supports—holds in both collectivist and individualist societies. Future studies may also benefit from refining support-related indicators or employing multi-informant designs to strengthen measurement precision and reduce reliance on single-source data.

7 Conclusion

Overall, this study demonstrates that career adaptability during adolescence is best understood as a developmentally layered process shaped by situational conditions, social support systems, and self-related psychological resources. By integrating Schlossberg's Transition Theory with a serial mediation framework, the study advances narrative coherence in explaining how career awareness is transformed into adaptive capacity. The refined theoretical structure and clarified terminology strengthen the interpretive depth of the findings, particularly regarding the complex and sometimes counterintuitive role of awareness in shaping self-perceptions. Beyond its empirical contributions, the study presents a coherent conceptual model that bridges developmental psychology and career education, offering actionable insights for school-based guidance practices. With its sharpened theoretical focus and integrated interpretation, this work makes a meaningful contribution to the literature on adolescent career development, providing a robust foundation for future research and applied interventions.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: the datasets presented in this study are available in online repositories. The names of the repository/repositories and accession number(s) can be found at: https://drive.google.com/file/d/1AQLyetasL6KSuhjNWEed35QnHKqy-Ey_f/view?usp=sharing. Requests to access these datasets should be directed to osmansoner44@gmail.com.

Ethics statement

Ethics committee approval, dated 16 February 2024 and numbered 2024/01, was obtained for this study from the Istanbul Sabahattin Zaim University Social and Human Sciences Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

OS: Methodology, Validation, Investigation, Conceptualization, Software, Supervision, Data curation, Funding acquisition, Resources, Writing – review & editing, Formal analysis, Writing – original draft, Project administration, Visualization.

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Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that generative AI was not used in the creation of this manuscript.

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