

**Career Maturity as a Mediator in the Relationship between Professional Social Support and Career Resilience among Vocational Trainees: A field study in two vocational training institutions in Tebessa, Algeria.**

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### **Abstract**

This study explored the mediating role of career maturity in the relationship between professional social support and career resilience among 135 vocational trainees randomly selected from two training centers in Tebessa, Algeria. Using a cross-sectional design and path analysis based on validated measurement instruments, data were analyzed with SPSS (version 27) and R code (Version 4.5.1) to test the proposed hypotheses. Results indicated that professional social support neither significantly predicted career maturity ( $\beta = 0.100$ ,  $p = .241$ ) nor exerted a direct influence on career resilience ( $\beta = 0.012$ ,  $p = .891$ ). In contrast, career maturity demonstrated a significant positive effect on career resilience ( $\beta = 0.201$ ,  $p = .017$ ), although mediation analysis revealed no significant indirect effect (Sobel  $z = 1.043$ ,  $p = .297$ ,  $K^2 = 0.021$ ). The overall model suggests that career maturity functions as an independent predictor of resilience rather than as a mediating mechanism between social support and adaptive outcomes. These findings highlight the importance of fostering career maturity as a core developmental competency within vocational education while reconsidering the presumed centrality of professional social support in resilience formation. Future studies should investigate alternative pathways and moderating variables that clarify how different forms of social support influence career adaptation process.

**Keywords:** career maturity, professional social support, career resilience, trainees, training centers

### **Introduction**

The local and international labor market has recently experienced radical and rapid changes, especially with the transformations imposed by modern technologies. It became logical for new professions to emerge and traditional ones to disappear, which forced job seekers particularly trainees in vocational training centers to account for these challenges, and plan to adapt quickly to the requirements of the new labor market and its job needs and withstand its fluctuations and difficult professional realities to ensure their foothold in a constantly changing work environment. Living together, in terms of including the other/others

and difference/diversity, is a multidimensional issue that is not limited solely to the contexts of the family and the school but also encompasses the contexts of work and civic coexistence, as well as relations between genders, ages, races, religions, languages, ideologies, and between countries and continents.

However, the magnitude of these challenges increases in the Algerian context, given the complexity of the transition from training to employment, with few opportunities for direct integration. This requires trainees to demonstrate resilience during training, persist without withdrawing despite perceived failure or negative evaluation, and resist frustration with slow professional integration. This requires trainees to demonstrate resilience during training, persist without withdrawing despite perceived failure or negative evaluation, and resist frustration with slow professional integration. This is why Luthans et al. (2006) deem it a critical component in the vocational training process, helping trainees to adapt to challenges, persist through difficulties, and maintain motivation in the face of uncertain career prospects.' Furthermore, both Vianen and De Pater (2012) assert that 'building career resilience during the training period enhances trainees' capacity to navigate the transition from learning environments to dynamic labor markets.' Moreover, maintaining constant readiness for self-development and employability in a changing professional environment requires not only situational resilience but also developing this skill as a sustainable competency.

In this context, Cascio (2007) identifies career resilience (CR) as 'an essential survival skill in the 21st century' (p. 552). This view is further supported by Saripudin and Afiati (2022), who contend that career resilience is 'a meta-competence to adapt quickly, be ready to change, and survive in career transitions' (pp. 85–86).

Nevertheless, the presence of this decisive characteristic (career resilience) is dependent on the interplay of several external factors; chief among this is professional social support (PSS), for resilience is not built in isolation from the social context, but rather relies on resources and support received by the individual from their environment. This includes support from colleagues, leaders, and supervisors; such support enhances one's ability to adapt to challenges and recover more swiftly from crises (Luthans & Yousef-Morgan, 2015).

Yet support may also arise informally through family, who remain crucial supporters both financially and psychologically while encouraging persistence in training, through close friends outside the workplace, and even via professional digital platforms where members share insights, exchange experiences, and provide mutual psychological support. The diversity of professional social support sources plays a vital role in bolstering adaptability and activity to labor markets demands and developing sustainable professional competencies, a point underscored by several researchers (Hirschi, 2018; Lent, 2020; Xia et al., 2020; Zhou et al., 2024).

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support from colleagues, leaders, and supervisors; such support enhances one's ability to adapt to challenges and recover more swiftly from crises (Luthans & Youssef-Morgan, 2015).

While research acknowledges the significance of the relationship between career resilience and professional social support across diverse settings such as nursing (Galanis et al., 2022; Hamaideh et al., 2024), teaching (Versteeg & Kappe, 2021) mental health (Ben-David & Miller, 2025; Parlak et al., 2025), and the underlying mechanisms that govern this relationship are still unclear, especially when we find learners with high resilience but limited supports, while others have low resilience, despite the presence of intensive support, so there is a disparity between them in this context, and there are those who perceive this support as a guardianship or a form of paternalistic control that hinders their self-efficacy and autonomy, especially when it transforms into support characterized by negative qualities such as being controlling, mismatched, or coercive which may weaken their resilience (Bolger & Amarel, 2007; Halbesleben & Wheeler, 2012).

There is no clear basis for how external support resources such as guidance and support are transformed into an internal capacity to cope and adapt career resilience, and therefore it is assumed that there is a missing link that mediates this relationship. Specifically, Career Construction Theory (CCT) highlights that professional social support represents an important environment or resources; however, it cannot directly foster career resilience without the individual's internal readiness, the development of appropriate psychology resources, and the practice of adaptive behavior (Savickas, 2012). Importantly, grounded in personal constructivism and social constructivism, CCT views career development as a dynamic process in which individuals actively construct their careers by adapting their subjective self to the external world. Moreover, the theory emphasizes that factors such as professional maturity, self-control, self-development, curiosity, and self-confidence are essential prerequisites for building resilience and achieving successful occupational adjustment (Savickas, 2005; 2012).

Although we note several foreign studies that examined career maturity as a mediating variable (Fang & Xu, 2005; Hwang & Yoo, 2024; Lee & Han, 2025; Li et al., 2023; Lyu et al., 2022; Zhang & Tu, 2023), we find that they were characterized by differences in the variables studied and diversity in the applied contexts (educational, university, professional, and health). We also note the almost total absence of such studies in the Algerian context, especially among trainees of vocational training centers. The gap becomes more evident if we know that the career maturity as a potential mediating factor has not received sufficient attention, as it has not been tested the magnitude of its impact on the relationship between professional social support and career resilience, despite what contains important dimensions, such as the trainee's awareness and independence in their career choice, their understanding of the profession's requirements, the existence and the clarity of their goals and plans post-training, and their readiness to integrate into labor market, all of which are important aspects for a group that is still in the training stage, and their career maturity is still in evolving.

Ignoring this mediating variable is a fundamental omission because it may produce misleading estimates of the strength of the direct relationship between the other two variables, or distort its nature, and hindering the design of accurate interventions to promote

resilience. Hence, testing the mediating role of professional maturity is a qualitative addition that contributes to explaining the dynamics of the relationship between psychosocial factors and professional adaptive behaviors, which may support the construction of more effective training programs, and ensure sustainable professional integration.

### **Research Gap**

A review of the literature about this topic reveals broad consensus regarding the significance of both professional social support and career resilience in navigating labor market demands. However, the precise mechanism underlying their relationship remains inadequately explained, and that's why empirical observations consistently show divergent patterns among individuals; some trainees benefit from robust support yet exhibit limited resilience, while others demonstrate strong resilience despite modest support. This discrepancy suggests that the conversion of external support into internal adaptive capacity involves a complex, non-linear process rather than a direct transformation.

Drawing on CCT, this process arguably requires essential psychological readiness and personal maturation, thereby pointing to potential mediating factors (Savickas, 2012), while existing research has extensively examined career resilience as a mediator in various contexts. The specific mediating role of career maturity encompassing career awareness, autonomous planning capabilities, and labor market preparedness has received scant scholarly attention, and this oversight is particularly pronounced within Algeria's distinctive vocational training landscape, where socio-economic factors and transition challenges create unique dynamics.

Neglecting this crucial mediating variable not only limits theoretical understanding of how social support translates into resilience but also impedes the development of evidence-based interventions tailored to vocational trainees' needs. Consequently, investigating career maturity as a potential mediator between professional social support and career resilience constitutes a significant theoretical and empirical gap that this study aims to address.

### **Research Questions**

#### **Main Research Question**

What is the effect size of the mediating role of the career maturity (CM) in the relationship between professional social support (PSS) and career resilience (CR) among vocational trainees?

#### **Research Sub-Questions**

a. Is there a statistically significant positive correlation ( $\alpha \leq .05$ ) between PSS and CM among vocational trainees?

b. Does CM exert a statistically significant positive effect ( $p \leq .05$ ) on CR among vocational trainees?

c. Is there a statistically significant direct effect ( $p \leq .05$ ) of PSS on CR among vocational trainees?

d. Does CM mediate the relationship between PSS and CR with statistically significant (95% CI excluding zero)? If so, what is the effect size of this mediation?

### Research Hypotheses

H<sub>1</sub>: A statistically significant positive correlation exists ( $\alpha \leq .05$ ) between PSS and CM among vocational trainees.

H<sub>2</sub>: CM exerts a statistically significant positive effect on CR ( $\beta > 0, p \leq .05$ )

H<sub>3</sub>: PSS has a statistically significant direct effect on CR ( $c' > 0, p \leq .05$ )

H<sub>4</sub>: CM significantly mediates the PSS-CR relationship (95% CI excludes zero)

H<sub>5</sub>: The indirect effect of CM will reach at least a medium effect size per Preacher & Kelley's  $k^2$  benchmark ( $k^2 \geq 0.09$ )

### Research Significance

The present study gives its significance from the following considerations:

- 1) Many previous studies have shown the role of professional maturity in mediating between a various variables such as the link between social support and career adaptation (Li et al., 2023), self-efficacy and career readiness (Sholikah et al., 2021), and parental attachment and self-concept (Afsouran et al., 2022). However, we note a distinct lack of research providing vision for a relation between professional social support and career resilience through a different trajectory (career maturity), which had been overlooked or ignored within the limits of what the international databases showed us (Scopus, WOS, ERIC) or local (ASJP). The current research is working to fill this Gap by testing this in the intermediate model in an Arab-North African professional environment, specifically with the category of trainees in Algerian vocational training centers, which gives the current study and explanatory Dimension that enhances its value in the organizational field.
- 2) The current study's use of a mediation model with psychosocial dimensions could provide an understanding of how these critical aspects interact in the training environment, and lead to the design of interventions that can enhance the trainee's professional personality, and make him able to deal with the challenges of integration into the labor markets.

### Research Objectives

This study aims to achieve the following objectives:

- 1) Assessment of direct PSS-CM-CR relationships and predictive pathways.
- 2) Quantification of CM's mediating effect size in the PSS-CR dynamic using path analysis.

### Definition of Key Terms

**Career Maturity (CM).** Career Maturity can be defined "as readiness to cope with vocational development tasks" (Savickas, 1984, p. 222)

In the present study, the construct historically termed "career maturity" is operationalized via Savickas & Porfeli's (2012) career adaptability framework as the total score on an Algerian-adapted, 12-item Career Adapt-Abilities Scale (CAAS). Each of the four adaptability resources: Concern, Control, Curiosity, and Confidence is represented by three items rated on a three-point Likert-type scale (1 = Disagree, 2 = Neutral, 3 = Agree)

**Professional Social Support (PSS).** "The perceived adequacy of support from family, friends, and a significant other" (Zimet et al., 1988, p. 30)

This study gauges social support via an Algerian-adapted MSPSS (Zimet et al., 1988) reworded for the vocational-training context; the original “significant-other” subscale is replaced by “support from trainers and centre administration.” Social support is operationalized as the total score across family, friends, and trainers/administration, rated on a 3-point Likert scale (1 = Disagree, 2 = Neutral, 3 = Agree)

**Career Resilience (CR).** "The individual's ability to adapt to changing circumstances and cope with negative work situations. Career resilience involves demonstrating initiative, structuring work problems, and attempting to maintain performance levels when confronted with situational constraints such as time pressures, lack of resources, or poor directions from peers and subordinates." (Noe, Noe, & Bachhuber, 1990)

In this study, the degree of career resilience attained by Algerian vocational-training trainees is operationalized-via Noe, Noe, and Bachhuber's (1990) adaptation of London's Career Motivation Inventory (*CMI*)-as the total score on an Algerian-adapted Career Resilience subscale reworded for the vocational-training context. The subscale comprises 13 items rated on a three-point Likert-type scale (1 = Disagree, 2 = Neutral, 3 = Agree)

## **Research Methodology**

### **Design and Participants**

In this study, we developed our hypotheses by drawing on well-established theoretical frameworks and insights from previous research. Our goal was to explore how three key variables -Professional Social Support (PSS), Career Maturity (CM), and Career Resilience (CR) - interact and influence one another. To achieve this, we employed path analysis, a method that allows us to examine complex relationships and potential indirect effects. Data were gathered through three carefully validated questionnaires, ensuring that our measures were both reliable and meaningful. Special attention was given to investigating whether career maturity serves as a mediator in the relationship between professional social support and career resilience, with a detailed assessment of the strength of these effects through effect size calculations. This approach enabled a nuanced understanding of the underlying dynamics connecting professional support, personal development, and resilience in career contexts.

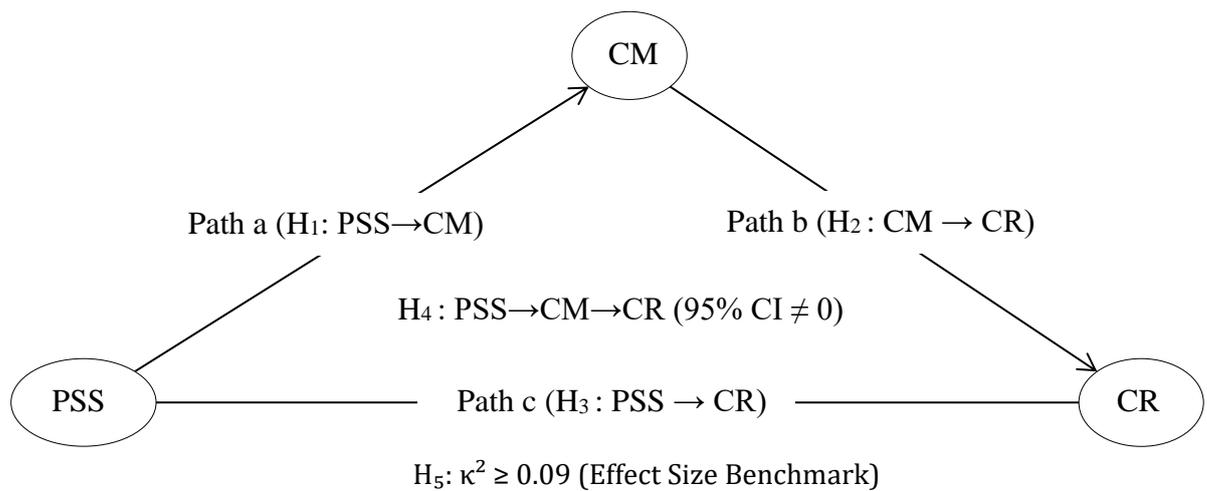


Fig 1. Conceptual framework of the research

### Sample Research

In this study, participants were chosen via convenience sampling from vocational training centers in Tebessa, Algeria. Questionnaires were distributed both by hand and via e-mail, and participants voluntarily completed them. Responses were kept confidential, and personal details were not required. The final analytical sample included 135 participants (79.41% valid response rate) from an initial cohort of 170 trainees. Although non-probability sampling has inherent limitations compared to random sampling, it was necessary due to administrative constraints and practical difficulties across the centers. Consequently, data collection was conducted in only two centers: the National Institute of Specialized Vocational Training (Lakhdar Ben Toubal) and the Vocational Training and Apprenticeship Center (El Ouafi Teli); out of a total of five centers in the city of Tebessa.

These constraints also have implications for the study results. First, self-selection bias may have occurred, as trainees who responded might be more motivated or involved than those who did not, which could distort the findings. Second, the reduced representativeness means the sample may not fully reflect the entire population, especially uncooperative trainees. Therefore, results should be interpreted cautiously and cannot be generalized beyond the study.

Table 1 presents participant demographics. The sample ( $N = 135$ ) comprised trainees distributed across Two vocational training centers mentioned above. Respondents were 68.88% male ( $n = 93$ ) and 31.11% female ( $n = 42$ ), with a mean age of 23.0 years ( $SD = 2.1$ ).

**Table 1. Demographic Data of Respondents**

Attribute	Classification	Frequency (n)	%
Centers	Lakhdar Ben Toubal	83	61.48%
	El Ouafi Teli	52	38.51%

<b>Gender</b>	Male	93	68.88%
	Female	42	31.11%
<b>Age (year)</b>	16-19	21	15.54%
	20-23	33	24.87%
	24-27	34	25.39%
	28-31	27	19.69%
	32 and above	20	14.51%
<b>Educ. level</b>	Primary	16	11.92%
	Intermediate	49	36.27%
	Secondary	58	43.01%
	University	12	8.81%
<b>Total</b>		135	100%%

### **Ethical Approval**

Ethical approval for this study was obtained from the scientific committee of the Department of Psychology at Echahid Cheikh Larbi Tebessi University (Approval N°. 002/2025), in accordance with the ethical principles of the Declaration of Helsinki (1964) and its subsequent amendments, as well as the ethical standards of the American Psychological Association. Prior to their involvement, all participants received comprehensive information about the study's objectives and procedures, and their informed consent was obtained. This process emphasized the free and voluntary nature of their participation and their unequivocal right to withdraw at any time without consequence. Stringent confidentiality protocols were implemented to protect the identities and data of all participants, with the assurance that information would be used solely for scientific purposes.

### **Research Instruments**

For data collection and hypothesis testing, a questionnaire was administered containing three scales (CM, PSS, and CR) using a three-point Likert scale instead of the conventional five-point format with higher scores indicating greater levels of the measured variables. This design decision addressed two main issues: (1) participants' difficulty in distinguishing between nuanced response options (Culture & educational appropriateness) and (2) the risk of weak satisficing (Krosnick, 1999, p. 548), respondents' fatigue resulting from lengthy questionnaires, which may compromise response quality-especially toward the latter sections of the instrument. Therefore, employing a simpler scale that is appropriate for respondents

with an intermediate education level can enhance clarity and reduce their cognitive burden (pp. 547–548), which is what we worked on in the current study.

Regarding career maturity, was measured using a culturally adapted 12-item short form of the Crites Career Maturity Inventory (CMI; Maggiori, Rossier & Savickas, 2015), derived from the 24-item instrument developed by Savickas and Porfeli (2012), which was from the collaboration of researchers from 18 countries and field-tested across 13 nations, demonstrating metric invariance across these countries (Savickas & Porfeli, 2012), supporting the generalizability of its theoretical structure to diverse contexts, including Algeria. However, to give potential linguistic and cultural nuances, local adaptation was undertaken to ensure the instrument's relevance and clarity for Algerian vocational trainees. The adapted scale underwent content validation by a panel of 12 expert judges (2 vocational training experts and 10 university professors in work psychology), yielding a content validity ratio (CVR) of 90 %. Psychometric analysis further demonstrated strong internal consistency (Cronbach's  $\alpha = .81$ ).

Professional social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). The original instrument is made up of 12 items equally distributed across three subscales-Family, Friends, and Significant Other-and gauges an individual's perceived emotional, informational, and instrumental support from these sources. To align the scale with the objectives of the present study, the "Significant Other" dimension was reconceptualized as "Support from Trainers and Center Management," while minor contextual adjustments were applied to the Family and Friends items to situate them within the vocational-training environment. The overall structure of the MSPSS was preserved, and wording was simplified to match the participants' moderate educational level. Consequently, the adapted scale comprehensively captures social support from family, peers, trainers, and the organization within the Algerian vocational-training context. The MSPSS is among the most widely employed social-support instruments worldwide, having undergone over 70 adaptation and translation studies across 22 languages and diverse socio-economic settings (Dambi et al., 2018), thereby supporting its applicability in Algeria after appropriate cultural tailoring. Following translation into Arabic, the researchers adapted the items for vocational trainees, submitted the scale to expert reviewers from vocational centers and universities, and computed its psychometric properties: Content Validity Ratio (CVR) = 95.75%, internal consistency = 0.81, and construct validity = 0.69.

Concerning career resilience, it was examined using the Career Resilience subscale from Noe, Noe, and Bachhuber's (1990) operationalization of London's Career Motivation Inventory (CMI) (1983). Although there is no consensus on its conceptualization, with definitions ranging from broad notions of psychological resilience to more specific but vague formulations (Rochat, Masdonati, & Dauwalder, 2017), in this framework, career resilience is treated as a single behavioral construct-part of the broader career motivation model, alongside career insight and career identity- so it is a one-dimensional scale. The 13-item subscale measures behaviors that show how well a person can adapt, persevere, and make friends in the training setting. Originally created for the workplace, we modified it to fit the Algerian vocational training setting by changing some words (e.p., changing "job" or "career"

to "future career" or "training/career pathway"), and this was done to make sure it was still useful and helpful for trainees who didn't have a lot of work experience. Regarding the psychometric qualities, content validity was verified by a panel of vocational training instructors and university psychology faculty (CV = 93.46%), and internal consistency was adequate (Cronbach's  $\alpha = 0.70$ ).

The expert assessment based on Lawshe's (1975) (Cottrell & McKenzie, 2010, p. 318) Content Validity Ratio demonstrated high content validity across all instrument dimensions, with CVR percentages ranging from 90% to 95.75% and an overall mean of 93.07%. This confirms that all scales exhibit strong content validity and adequately represent their intended theoretical constructs.

### Data Analysis

Preliminary analyses were carried out using IBM SPSS Statistics (Version 26; IBM Corp., 2020) to explore descriptive statistics, assess reliability, and examine bivariate correlations. These initial steps provided a clear overview of the data structure and the internal consistency of the measurement scales.

Subsequently, R (Version 4.5.1; R Core Team, 2024) was employed to perform path analysis and mediation testing based on the Maximum Likelihood estimation method. Model adequacy was evaluated using standard goodness-of-fit indices to verify the robustness and validity of the proposed model.

The data pertaining to the study hypotheses were analyzed as follows:

**H<sub>1</sub>** was examined using Pearson's correlation analysis between Professional Social Support (PSS) and Career Maturity (CM). **H<sub>2</sub>**, **H<sub>3</sub>**, and **H<sub>4</sub>** were examined simultaneously by estimating a simple mediation model (PROCESS Model 4) using ordinary least squares (OLS) path analysis. The significance of the direct effect (**H<sub>3</sub>**) and the effect of CM on CR (**H<sub>2</sub>**) was determined by their respective p-values ( $< .05$ ). Given that bootstrapping was not employed, the significance of the indirect mediation effect. **H<sub>4</sub>** was formally evaluated using the Sobel test. Although the bootstrapping resampling method is generally considered the most robust approach for testing indirect effects, it was not employed in the present study due to methodological constraints related to field application, particularly the relatively small final sample size (fewer than 200), in addition to the researchers' limited statistical capacities. Instead, the Sobel test was adopted as a traditional and widely used method for assessing mediation effects. **H<sub>5</sub>** was evaluated by calculating Preacher and Kelley's  $\kappa^2$  to determine the effect size of the indirect pathway.

In reporting the results, we include both significance levels (p-values) and effect size measures (including  $R^2$  for models and  $\kappa^2$  for mediation) to allow for a comprehensive interpretation of the findings."

**Results****Table 2. Fit Test Data for the Scales**

Model	$\chi^2/DF$	RMR	RMSEA	CFI	TLI	Evaluation
Standard	< 3	< 0.05	< 0.08	>0.9	>0.9	-
CM Scale	2.415	0.0443	0.0672	0.908	0.889	Acceptable
PSS Scale	2.192	0.0408	0.0618	0.925	0.908	Excellent
CR Scale	2.583	0.0471	0.0715	0.892	0.874	Conditional

**Note.** Acceptable thresholds:  $\chi^2/DF < 3$ ; RMR < 0.05; RMSEA < 0.08; CFI and TLI > 0.90.

**Table 2** displays confirmatory factor analysis outcomes assessing the structural validity of the three measurement scales. The findings reveal distinct patterns of model fit across instruments, with each scale demonstrating adequate to strong psychometric properties.

The Career Maturity (CM) scale achieved acceptable fit across most indices ( $\chi^2/DF = 2.415$ ; RMSEA = 0.067; CFI = 0.908), though the TLI value (0.889) fell marginally below the preferred threshold. This pattern suggests generally sound model specification with minor areas for potential refinement.

Both the Professional Social Support (PSS) and Career Resilience (CR) scales showed contrasting fit profiles. The PSS scale demonstrated strong overall fit ( $\chi^2/DF = 2.192$ ; RMSEA = 0.062; CFI = 0.925; TLI = 0.908), with all indices comfortably exceeding recommended benchmarks. In contrast, the CR scale presented adequate but less robust fit ( $\chi^2/DF = 2.583$ ; RMSEA = 0.072; CFI = 0.892; TLI = 0.874), indicating acceptable yet comparatively weaker structural alignment.

Notably, all scales exhibited RMR values below the 0.05 threshold, confirming minimal residual variance between observed and model-implied covariance matrices. These differential fit patterns across scales provide meaningful insights into their measurement characteristics while supporting their suitability for subsequent analytical applications.

**Table 3: Descriptive Statistics for the Study Variables**

Variable	N	$\bar{x}$	SD	Skewness	Kurtosis
CM	135	2.014	0.236	0.960	5.538
PSS	135	2.012	0.194	0.164	3.048
CR	135	2.009	0.200	-0.059	3.374

**Note.** CM = Career Maturity; PSS = Professional Social Support; CR = Career Resilience.

**Table 3** reports descriptive statistics for the primary study variables. The data reveal consistent response patterns across all three constructs, with mean scores clustering around 2.01 and standard deviations ranging from 0.194 to 0.236.

Distributional characteristics show generally acceptable properties for parametric analysis. Skewness values remain within reasonable bounds, ranging from -0.059 to 0.960, indicating relatively symmetrical distributions. Kurtosis statistics suggest approximately normal distribution shapes for PSS and CR, though the CM variable demonstrates somewhat elevated kurtosis (5.538).

These statistical characteristics support the use of parametric analytical techniques for subsequent hypothesis testing, while acknowledging the slightly leptokurtic distribution of career maturity scores. The overall pattern indicates adequate distributional properties for the planned analytical approach.

**Table 4: Correlations among the Study Variables**

Variable	1	2	3
PSS	1		
CM	0.100	1	
CR	0.032	0.203*	1

**Note.** N = 135.  $p < 0.05$  (two-tailed).

**Table 4** presents the bivariate correlations among the study variables. The interrelationships reveal a generally low level of association across constructs, with only one correlation achieving statistical significance. A modest positive correlation emerges between career maturity (CM) and career resilience (CR) ( $r = 0.203$ ,  $p < 0.05$ ), suggesting that individuals reporting higher career maturity tend to exhibit greater career resilience. In contrast, professional social support (PSS) demonstrates negligible and non-significant correlations with both CM ( $r = 0.100$ ) and CR ( $r = 0.032$ ), indicating its relative independence from the career development constructs in this sample. This pattern of relationships underscores the distinctiveness of each variable and supports their separate consideration in subsequent analytical models.

**Table 5 : Standardized Path Coefficients**

Path	$\beta$	SE	CR (t-value)	p	Hypothesis
PSS $\rightarrow$ CM	0.100	0.070	1.172	0.241	H <sub>1</sub> $\times$
CM $\rightarrow$ CR	0.201	0.072	2.377	0.017	H <sub>2</sub> $\checkmark$
PSS $\rightarrow$ CR (direct)	0.012	0.087	0.138	0.891	H <sub>3</sub> $\times$

**Note.** Note:  $\beta$  = standardized path coefficient; SE= Standard Error; CR = critical ratio (t-value)

The results indicate mixed support for the proposed paths. The path from Professional Social Support (PSS) to Career Maturity (CM) is positive but non-significant ( $\beta = 0.100$ ,  $p = 0.241$ ), leading to the rejection of Hypothesis 1 (H<sub>1</sub>). This suggests that professional social support does not significantly predict career maturity in this sample.

In contrast, the path from Career Maturity (CM) to Career Resilience (CR) is positive and statistically significant ( $\beta = 0.201$ ,  $p = 0.017$ ), supporting Hypothesis 2 (H<sub>2</sub>). This indicates that higher career maturity is associated with greater career resilience. However, the direct path from Professional Social Support (PSS) to Career Resilience (CR) is negligible and non-significant ( $\beta = 0.012$ ,  $p = 0.891$ ), resulting in the rejection of Hypothesis 3 (H<sub>3</sub>).

Overall, the findings highlight the direct role of career maturity in fostering resilience, while professional social support appears to have no significant direct or indirect effects

within this model. The non-significant paths involving PSS suggest that other factors may be more critical in explaining career resilience in this context.

**Table 6. Mediation Test using Sobel and  $\kappa^2$**

Path (Mediation)	a (PSS→CM)	b (CM→CR)	SEa	SEb	Sobel z	p-value	$\kappa^2$	Effect Size	H
PSS→ CM → CR	0.122	0.171	0.105	0.073	1.043	0.297	0.021	Small	H <sub>4</sub> X H <sub>5</sub> X

**Note.** Sobel  $z > 1.96$  and  $p < .05$  indicate significant mediation.  $\kappa^2 = .12$  suggests a medium effect size.

Table 6 presents the results of the mediation analysis, exploring whether career maturity (CM) acts as a mediator in the relationship between professional social support (PSS) and career resilience (CR). The Sobel test shows a non-significant indirect effect ( $z = 1.043$ ,  $p = 0.297$ ), indicating that Hypothesis 4 (H<sub>4</sub>) is not supported. This suggests that, statistically, career maturity does not significantly transmit the influence of professional support to career resilience in this sample.

Looking at the effect size,  $\kappa^2 = 0.021$  falls well below the threshold for a medium effect ( $\kappa^2 \geq 0.12$ ). This indicates that even if there is an indirect effect, its magnitude is minimal. As a result, Hypothesis 5 (H<sub>5</sub>), which proposed a meaningful mediation effect, is also not confirmed.

Overall, these findings suggest that career maturity, in this context, does not play a significant mediating role. It highlights that while professional social support and career resilience may be related, the pathway through career maturity is weak or negligible. This opens the possibility that other variables such as personal traits, motivation, or contextual factors might better explain how professional support contributes to career resilience. In practical terms, interventions aiming to strengthen career resilience may need to consider factors beyond career maturity to be effective.

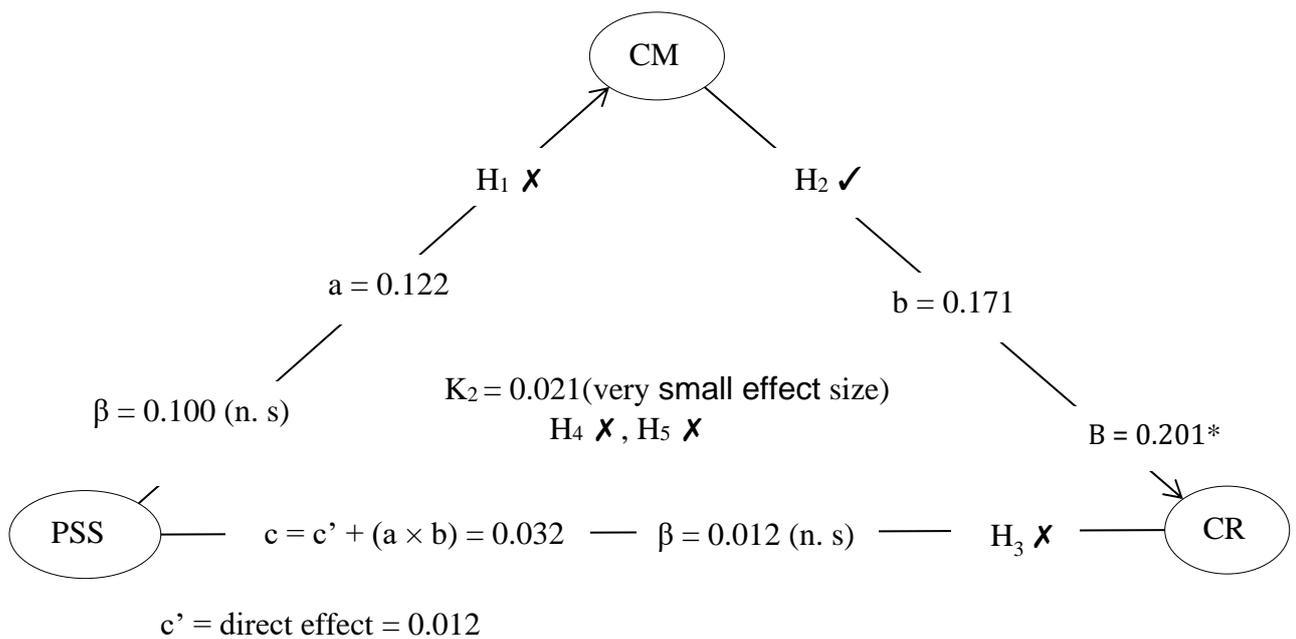


Fig 2. Path Analysis revealing non-significance mediation with very small effect size ( $k^2 = 0.021$ )

**Note.** Note:  $\beta$  = standardized path coefficient; a, b = Unstandardized mediation path coefficients;  $c'$  = Direct effect (PSS  $\rightarrow$  CR);  $c$  = Total effect =  $c' + (a \times b)$ ; n. s. = Non-significance ( $p > 0.05$ );  $k^2$  = Effect size measure for mediation

This figure illustrates the structural relationships among professional social support (PSS), career maturity (CM), and career resilience (CR), as identified through path analysis. The model specifies both direct and indirect (mediated) pathways, with standardized coefficients reflecting the strength and direction of each hypothesized link.

The results reveal a statistically significant pathway from career maturity to career resilience ( $\beta = 0.201, p < .05$ ), indicating that higher levels of career maturity are associated with greater adaptability and persistence in one's career development. This finding underscores the role of career maturity as an internal personal resource that enables individuals to navigate professional challenges and sustain engagement in the face of difficulties. In contrast, the direct effects of professional social support on both career maturity ( $\beta = 0.100, p = .241$ ) and career resilience ( $\beta = 0.012, p = .891$ ) are not statistically significant, suggesting that external support alone may not sufficiently predict either construct within the current sample. Moreover, the indirect effect through career maturity ( $\kappa^2 = 0.021$ ) is minimal, pointing to a weak mediating mechanism. Taken together, these findings offer a nuanced depiction of the model, wherein career maturity emerges as a central yet independently influential factor in fostering resilience, while professional social support appears to play a more peripheral role in this structural framework.

## Discussion

This study examined the interrelationships among professional social support, career maturity, and career resilience among vocational trainees. The overall pattern of results reveals a nuanced structure that both aligns with and challenges established frameworks in career development theory. The measurement models showed satisfactory psychometric adequacy, as confirmed by confirmatory factor analyses yielding fit indices within acceptable to strong ranges. Specifically, the Professional Social Support (PSS) scale demonstrated solid construct validity ( $\chi^2/DF = 2.192$ ; RMSEA = 0.062; CFI = 0.925), while the Career Maturity (CM) and Career Resilience (CR) scales achieved adequate fit, suggesting that the observed relationships are grounded in reliable measurement models.

Contrary to expectations in Hypothesis 1, professional social support did not exhibit a significant relationship with career maturity ( $\beta = 0.100$ ,  $p = 0.241$ ;  $r = 0.100$ ). This finding diverges from traditional models of career development, which position social support as a key driver of vocational readiness and decision-making competence. A possible explanation lies in the developmental stage of vocational trainees, for whom career maturity may emerge through self-directed exploration and intrinsic motivation rather than through external reinforcement. This interpretation resonates with self-determination theory, which highlights the role of autonomous motivation in personal growth. Another explanation may involve measurement limitations: the operationalization of professional social support might not have fully captured the relational and contextual nuances that shape trainees' professional development.

Still, this outcome contrasts with prior evidence emphasizing the developmental role of social support. For instance, Li, Wang, Zhang, and Zhao (2021) found that social support positively influenced vocational students' career adaptability, with career maturity acting as a mediator. Their study also identified a chain mediation effect involving perceived career barriers, suggesting that supportive environments enhance adaptability through increased maturity and reduced obstacles. The difference between their results and the present study may stem from contextual or cultural factors within Algerian vocational settings, where limited mentoring structures or different conceptions of autonomy may reduce the perceived importance of social support in career development.

In contrast, Hypothesis 2 received strong empirical support, confirming that career maturity significantly predicts career resilience ( $\beta = 0.201$ ,  $p = 0.017$ ;  $r = 0.203$ ). This relationship underscores career maturity as a crucial component of adaptive capacity, as individuals with clear goals and effective decision-making strategies are better equipped to manage vocational challenges. This finding aligns with career construction theory, which regards adaptive readiness as central to career adaptability. Although moderate in strength, this relationship has practical implications for vocational training, emphasizing the value of fostering career maturity to strengthen resilience and persistence.

By contrast, Hypothesis 3 which proposed a direct relationship between professional social support and career resilience was not supported ( $\beta = 0.012$ ,  $p = 0.891$ ;  $r = 0.032$ ). This lack of association suggests that resilience in this context depends more on internal developmental mechanisms than on external support. Previous studies have reported mixed

results: Naz et al. (2024) found a moderate correlation ( $r = 0.31$ ) between social support and resilience among nursing students, while Septyven and Wijono (2024) and Song et al. (2023) observed stronger associations ( $r = 0.443$  and  $r = 0.571$ , respectively). The discrepancy suggests that social support may promote resilience only under specific contextual or occupational conditions, whereas in vocational training environments, individual traits such as self-efficacy, goal clarity, and decision confidence may be more decisive.

Further, mediation analyses clarified the structural dynamics among the study variables. Hypotheses 4 and 5, which proposed indirect effects of professional social support on resilience through career maturity, were not supported (Sobel  $z = 1.043$ ,  $p = 0.297$ ;  $\kappa^2 = 0.021$ ). The absence of mediation suggests that career maturity operates as an independent developmental construct rather than a conduit linking social support and resilience. This finding points to the existence of alternative adaptive pathways perhaps involving psychological resources, coping styles, or contextual moderators that future research should explore.

Taken together, these results contribute to theoretical refinement in the field of career development. The non-significant role of professional social support indicates that its impact may be context-dependent rather than universal. Social support might interact with unmeasured moderating variables such as personality traits, socioeconomic background, or institutional culture. Conversely, the consistent effect of career maturity on resilience reinforces its importance as a core adaptive competency, suggesting that interventions aimed at enhancing vocational readiness, decision-making, and professional identity could yield long-term benefits for trainee resilience.

Methodologically, the study's conclusions are strengthened by adequate model fit, reliable measures, and appropriate analytical techniques. However, limitations such as modest effect sizes and the cross-sectional design warrant caution in causal interpretation. The specificity of the Algerian vocational trainee context may also constrain generalizability to other cultural or institutional settings. Nonetheless, the low risk of common method bias and consistent theoretical alignment support the credibility of the observed relationships.

In summary, the study advances understanding of career development processes by demonstrating that career maturity functions as a direct and meaningful predictor of resilience, while professional social support exerts limited or indirect influence in this context. The absence of mediation challenges traditional assumptions about linear pathways between support and adaptation, emphasizing instead the need for context-sensitive, multidimensional models of career development. These insights have practical implications for vocational education; highlighting the importance of strengthening individual competencies such as self-direction, decision-making, and adaptive coping to promote sustainable career resilience.

#### **Practical Implications and Future Directions:**

These findings suggest that vocational training programs should place stronger emphasis on developing career maturity as a distinct competency, through guidance activities that build decision-making skills, career planning, and self-reflection. Strengthening these capacities can enhance trainees' ability to adapt and remain resilient in uncertain labor

markets. Future research should adopt longitudinal and cross-cultural designs to examine how social support interacts with other psychological and contextual factors over time, providing a more comprehensive understanding of how vocational adaptability develops across diverse settings.

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The authors declare that they have no competing financial or non-financial interests that are directly or indirectly related to the work submitted for publication.

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#### **Author contributions**

Both authors contributed equally to the study's conception and design; the first author was responsible for data collection, formal analysis, and writing the original draft. Meanwhile the second author provided critical review, editing, and supervision; both authors reviewed and approved the final manuscript.

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**Профессиональная зрелость как медиатор во взаимосвязи между профессиональной социальной поддержкой и карьерной устойчивостью у учащихся профессионально-технических учебных заведений (на примере двух учреждений в Тебессе, Алжир)**

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**Аннотация**

В данном исследовании изучалась опосредующая роль профессиональной зрелости во взаимосвязи между профессиональной социальной поддержкой и карьерной устойчивостью среди 135 учащихся профессионально-технических учебных заведений, отобранных методом случайной выборки из двух учебных центров в Тебессе (Алжир). С использованием поперечного (кросс-секционного) дизайна и анализа путей на основе валидированных измерительных инструментов данные были проанализированы с помощью SPSS (версия 27) и R (версия 4.5.1) для проверки выдвинутых гипотез. Результаты показали, что профессиональная социальная поддержка не являлась значимым предиктором профессиональной зрелости ( $\beta = 0,100$ ;  $p = 0,241$ ) и не оказывала прямого влияния на карьерную устойчивость ( $\beta = 0,012$ ;  $p = 0,891$ ). В отличие от этого, профессиональная зрелость продемонстрировала значимое положительное влияние на карьерную устойчивость ( $\beta = 0,201$ ;  $p = 0,017$ ), хотя медиационный анализ не выявил значимого косвенного эффекта (тест Собея:  $z = 1,043$ ;  $p = 0,297$ ;  $K^2 = 0,021$ ). Общая модель свидетельствует о том, что профессиональная зрелость выступает в качестве независимого предиктора устойчивости, а не как опосредующий механизм между социальной поддержкой и адаптивными результатами. Полученные результаты подчеркивают важность развития профессиональной зрелости как ключевой компетенции в системе профессионального образования, одновременно ставя под сомнение предполагаемую центральную роль профессиональной социальной поддержки в формировании устойчивости. Будущие исследования должны быть направлены на изучение альтернативных путей и модулирующих переменных, которые позволят прояснить, как различные формы социальной поддержки влияют на процесс карьерной адаптации.

**Ключевые слова:** профессиональная зрелость, профессиональная социальная поддержка, карьерная устойчивость, учащиеся, учебные центры.