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TITLE OF THE RESEARCH ARTICLE

The Interconnection between Authentic Leadership and Proactive Behavior in Tertiary Academia: The Intervening Influence of Psychological Capital and Gender Dynamics

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Abstract

This study examines the link between authentic leadership and proactive behavioral disposition among university lecturers as well as the mediating role of psychological capital and the moderating role of gender. Guided by a quantitative research methodology, data were obtained from 200 university lecturers of the University of Algiers 03 using an online survey. The relationships in the research model were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and the bootstrapping approach. Both authentic leadership and psychological capital were found to have a direct, positive, and significant influence in proactive behavioral disposition. In addition, it was established that psychological capital is a partial mediator between authentic leadership and proactive behavioral disposition. Gender, in this instance, was found to positively moderate the relationship between psychological capital and proactive behavior disposition, with a higher effect among males than females.

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1- Introduction:

Globalization and technological change are among the most significant factors that have reshaped the world, bringing with them numerous challenges, the most prominent of which is how to develop human resources (Gupta et al., 2017; Roncesvalles et al., 2021). Ethical corruption and global crises have paved the way for a shift from the traditional perspective of human resource development based on human capital (skills and abilities) to a modern view grounded in psychological capital. This view focuses on developing individuals through self-efficacy—possessing the confidence to exert more effort in completing difficult tasks—optimism to foster positive traits about the future, hope to persist in achieving goals and correcting courses when needed, and resilience in overcoming obstacles and emerging victorious. Furthermore, there has been a shift in leadership models, moving from the traditional view that assumes employees are mere followers who rigidly comply with orders to a view that positions individuals as proactive agents working to improve workplace conditions and innovate new behaviors to address organizational problems (Frese, 2008). Participative and motivational leadership styles are seen as key factors in understanding and managing employee behavior (Mirza Prameswari et al., 2020).

The higher education sector has been a focal point for the Algerian government in its efforts to advance the national economy and achieve development through several structural and organizational reforms. However, these reforms have largely focused on traditional methods that address the physiological aspects, while overlooking the psychological dimension. According to (Supriyadi et al. 2020), the higher education sector is one of the most psychologically demanding due to the pressure from the numerous tasks and roles professors face, which require them to perform their work impeccably in order to elevate the university to the ranks of global institutions. Recently, several studies have been conducted on influencing individual behaviors, and psychological capital (PsyCap) is the latest advancement in understanding these behaviors (Mao et al., 2021; Purwanto et al., 2021) . Many researchers have explored the topic of psychological capital (PsyCap) in various articles, addressing its four dimensions: hope, optimism, resilience, and self-efficacy, in an attempt to fully grasp this concept. luthan (2006) argues that these dimensions' complement each other, with a particular emphasis on resilience, which he considers the most prominent and crucial element of psychological capital, as it influences and integrates the other dimensions (Luthans, Vogelgesang, et al., 2006). Therefore, this paper aims to achieve the following objectives:

- Investigate the impact of authentic leadership and psychological capital on proactive behavior.
- Focus on psychological capital as a key element in human resource development within the relationship between authentic leadership and proactive behavior.
- Provide a clear perspective and methodology for researchers and scholars on the topics of authentic leadership, psychological capital, and proactive behavior.

1. Theoretical Background and Hypothesis Development

1.1 Authentic Leadership:

The term "authentic leadership" originates from the concept of authenticity, which refers to self-awareness (李方君 et al., 2014, p. 250) . An authentic leader follows an approach that emphasizes their authenticity, integrity, and alignment with their inner self. According to (Avolio & Gardner, 2005) , authentic leaders exhibit a high level of awareness regarding their thoughts and behaviors, as well as how these are perceived by others. They express their genuine emotions to their followers and demonstrate behaviors consistent with their principles and beliefs. Therefore, authentic leadership is based on three key behaviors (dimensions):

- **Self-Awareness:** The leader's ability to understand themselves by recognizing their strengths, weaknesses, and the impact these have on their followers' perceptions (Walumbwa et al., 2011).
- **Relational Transparency:** The leader's ability to earn the trust of followers by openly sharing information, ideas, and emotions (Coxen et al., 2016).
- **Internalized Moral Perspective:** The leader's ability to align their values and actions in dealing with external pressures, thus appearing transparent to their followers and all who interact with them (Avolio & Gardner, 2005).

Authentic leadership, with its components mentioned above, differentiates itself from other leadership styles, such as transformational, charismatic, ethical, and spiritual leadership. Authentic leadership has demonstrated greater efficacy than transformational and charismatic leadership in building positive psychological capacities in subordinates (Yamak & Eyupoglu, 2021).

1.2 Psychological Capital:

The term "psychological capital" (PsyCap) was coined by Luthans and his colleagues, who developed the theoretical framework for this concept through extensive research. It is defined as a positive psychological state that helps individuals develop themselves through self-efficacy, optimism, hope, and resilience. PsyCap focuses on two key aspects of the individual: first, who are you? (building a strong character), and second, what will you become? (continually developing abilities) (Luthans et al., 2007). Psychological capital consists of factors that help and motivate individuals to exhibit positive psychological traits, enabling them to achieve their potential and perform the behaviors necessary for their job while meeting their set goals (Luthans & Broad, 2022).

Luthans, Avey, et al. (2006) sought to clarify the concept of PsyCap by proposing four elements that address the psychological aspect. These became the core components that form the structure of PsyCap. When all four of these elements are present simultaneously, they have a synergistic effect, significantly predicting performance and satisfaction, beyond any other factors (Luthans, Avey, et al., 2006). These elements are (Luthans & Youssef-Morgan, 2017):

- **Self-Efficacy:** An individual's confidence in their ability to succeed through mobilizing both material and moral resources.
- **Optimism:** The expectation of positive outcomes, focusing on the positive side of situations and avoiding negativity.
- **Hope:** The perseverance to achieve goals and the ability to identify and seize available opportunities while avoiding potential threats through corrective action.
- **Resilience:** The ability to adapt to pressures imposed by various changes, confronting and recovering from them to return to a normal state.

1.3 Proactive Behavior:

Proactive behavior is defined as "the proactive initiatives undertaken by employees to build future-oriented behaviors aimed at changing and developing themselves (their behaviors) and the work environment." This behavior revolves around the "spirit of self-initiative," where employees rely on their own judgment in meeting job requirements without external intervention. This leads to positive outcomes reflected in individual, group, and organizational performance. Proactive behavior includes work characteristics such as independence and complexity, environmental characteristics like leadership style, and individual characteristics such as competency and traits (Bohlmann et al., 2021).

Scholars believe that employees who are provided with favorable work conditions, such as autonomy and simplified job tasks, are more inclined to exhibit proactive behaviors such as taking responsibility and seeking innovative solutions to problems. Regarding the environment, organizational support has an impact on proactive behavior, typically appearing in the form of an inverted U-shape. From an individual characteristics perspective, Tornau and Frese (2013) and Parker and Collins (2010) argue that individuals with strong personalities and cognitive abilities are more likely to engage in proactive behavior. Numerous studies have focused heavily on proactive behavior through two dimensions: idea implementation and proactive problem-solving, as exemplified by Parker et al. (2006). However, in our study, we have delved deeper into the concept of proactive behavior by focusing on responsibility-taking, voice, individual innovation, and problem prevention to provide a more comprehensive understanding of this term and enhance the credibility of the results.

2. Variable-Driven Hypothesis Generation Mechanisms

2.1 The Relationship between Authentic Leadership and Psychological Capital:

Leadership theories and models have aimed to understand the relationship between leaders and followers and how this relationship is directed. Among these theories is the transformational leadership theory, which suggests that in order for followers to realign their personal goals with the organization's shared goals, it is necessary to

manipulate the psychological factors of the followers (Avolio et al., 2004). Psychological factors play a significant role in enhancing the follower's self-confidence, which is reflected in their work performance (Coxen et al., 2016).

H1: *Authentic leadership has a direct impact on the psychological capital of university professors.*

2.2 The Relationship Between Authentic Leadership and Proactive Behavior:

Proactive behavior has gained increasing attention in recent years due to the growing pressure to adopt professional models and innovations. Organizations require employees who engage proactively with job demands through self-initiated actions without the need for constant supervision by leaders (Crant, 2000)(Walumbwa et al. (2007) suggested in their model that ethics serve as the primary driver and controller of decision-making behaviors. Authentic leadership plays a significant role in altering employees' proactive personalities by influencing their emotions, encouraging a positive outlook, and transforming a fear-driven work environment into one that fosters idea generation and problem-solving (Bai et al., 2022) . Based on prior research findings, it can be concluded that authentic leadership enhances proactive behavior by motivating employees to take initiative in improving both themselves and their work conditions. Therefore, the following hypothesis is proposed:

H2: *Authentic leadership has a direct effect on proactive behavior among university professors.*

2.3 The Relationship Between Psychological Capital and Proactive Behavior:

To understand the relationship between psychological capital and proactive behavior, it is essential to first identify the factors controlling proactive behavior. Among these factors are daily work pressures, which can lead to frustration and decreased motivation, subsequently affecting behavior and sometimes resulting in resignation (Fox & Spector, 1999). Consequently, individuals with high levels of psychological capital are better equipped to cope with such pressures. This resilience is supported by self-efficacy, which enhances self-confidence in achieving goals; optimism, which fosters positive expectations about the future; hope, which helps find alternative solutions to overcome obstacles; and resilience, which helps in handling challenges and stress effectively (Avey et al., 2011; Fox & Spector, 1999).

Fredrickson's "Broaden-and-Build" theory posits that positive emotions serve as a continuous reservoir for thinking and personality development, leading individuals to exhibit positive behaviors. Positive emotions result from emotional stimulation and ongoing renewal, thus expanding cognitive flexibility (Fredrickson, 2013; Luthans & Youssef-Morgan, 2017). Furthermore, several studies like Avey et al. (2011); (Avolio et al., 2004; Novitasari et al., 2020) have argued that psychological capital (PsyCap) generates positive emotions, leading to proactive behaviors such as creativity, idea-sharing, and expressing opinions on work-related issues. Employees with high psychological capital commitment exhibit greater positive behaviors than others (Avey et al., 2011). Additionally, studies have shown the positive impact of psychological capital on proactive behavior. Based on these insights, the following hypothesis is proposed:

H3: *Psychological capital directly influences proactive behavior among university professors.*

2.4 The Relationship between Authentic Leadership, Psychological Capital, and Proactive Behavior:

Authentic leadership, as conceptualized by some scholars, involves the idea of "being true to oneself." However, it is important to note that authentic leadership also requires being honest with others to fully develop the leader-follower trust relationship, leading to the creation of positive perceptions (Clapp-Smith et al., 2009; Rego et al., 2012). Numerous studies have demonstrated that both authentic leadership and psychological capital affect proactive work behavior (Hu et al., 2018; Novitasari et al., 2020; Walumbwa et al., 2011).

Rego et al. (2012) provided an example of how authentic leadership influences PsyCap, which, in turn, affects proactive behavior. They argued that authentic leaders encourage creativity through PsyCap mechanisms that improve the leader-follower relationship, thereby boosting self-confidence and fostering proactive behaviors, such as initiating change through innovative ideas and voicing dissenting opinions without fear. Thus, it can be concluded that authentic leadership influences psychological capital, which then affects proactive behavior. Several studies have discussed psychological capital (PsyCap) as a mediating, moderating, or predictive variable in

various relationships. For example, (Rego et al., 2012; Walumbwa et al., 2011) found that PsyCap mediates the relationship between authentic leadership and creativity, as well as organizational citizenship behavior.

Min et al. (2015) discovered that PsyCap moderates the relationship between bi-dimensional stressors and burnout. Furthermore, PsyCap has been shown to predict innovative work behaviors (Novitasari et al., 2020). This study will focus on the three dimensions of PsyCap—self-efficacy, optimism, and resilience—as mediating variables in the relationship between authentic leadership, psychological capital, and proactive behavior. This focus is based on the work environment, which is characterized by high pressure and significant challenges, as well as previous studies showing that these three dimensions better explain the psychological factors involved.

H4: *Psychological capital mediates the relationship between authentic leadership and proactive behavior among university professors.*

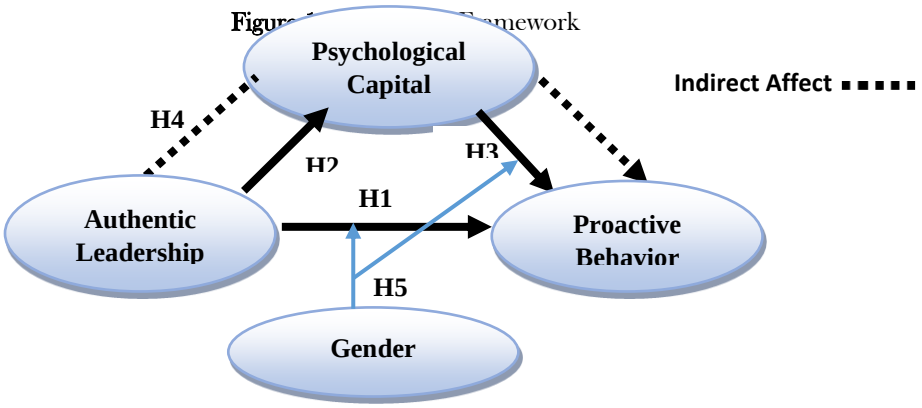
2.5 The Moderating Effect of Gender on the Relationship Between Authentic Leadership, Psychological Capital, and Proactive Behavior:

Several researchers have identified various factors that influence proactive behavior. Among these factors are individual differences and the work environment, both of which play a significant role in stimulating behavior and acquiring proactive knowledge. Individual differences, such as gender, age, and experience, drive individuals to adopt behaviors aimed at changing their work environment and acquiring new knowledge through accumulated experience over the years. Environmental factors include leadership style, prevailing culture, and work conditions, which are often referred to as situational antecedents (Parker & Collins, 2010; Parker et al., 2006). In this study, it is hypothesized that gender may serve as a moderating factor in the relationship between authentic leadership, psychological capital, and proactive behavior. Based on this, the following hypothesis is proposed:

H5: *Gender moderates the relationship between authentic leadership, psychological capital, and proactive behavior among university professors.*

H5.1: *Gender moderates the relationship between authentic leadership and proactive behavior among university professors.*

H5.2: *Gender moderates the relationship between psychological capital and proactive behavior among university professors.*



Note: Authentic Leadership= independent variable, Psychological Capital= mediator, Proactive Behavior=dependent variable, gender=moderator.

3. Methodology and Tools

3.1 Study Population and Sample

The study population consists of all faculty members working at the Faculty of Economic Sciences, Commercial Sciences, and Management Sciences, part of the largest universities in Algeria, specifically the University of Algiers 3, with a total of 800 professors. A simple random sample of 200 individuals was selected to distribute the electronic questionnaire, with 170 responses received, yielding a response rate of 85%. After removing incomplete data, the final sample of 158 participants was used for analysis.

3.2 Study Instrument

A questionnaire was developed consisting of four sections. The first section collected personal data, while the other sections focused on: Authentic Leadership, Psychological Capital, and Proactive Behavior.

Authentic Leadership was measured using the instrument designed by Walumbwa et al. (2008), which consists of 12 items (AL 1–AL 12) distributed across three dimensions:

Self-awareness (AL 1–AL 4): Example: "My leader is well aware of how his/her actions affect others." Rational Transparency (AL 5–AL 8): Example: "My leader encourages employees to express their opinions openly." Ethical Perspective (AL 9–AL 12): Example: "My leader demonstrates beliefs and values that align with his/her actions."

Psychological Capital was measured using 10 items (PsyCa 1–PsyCa 10), adapted from the questionnaire developed by Luthans et al. (2007), and distributed across three dimensions:

Self-efficacy (PsyCa 1–PsyCa 3): Example: "I believe in my ability to undertake new tasks assigned to me." Optimism (PsyCa 4–PsyCa 7): Example: "I believe that all problems at work always have a positive side." Resilience (PsyCa 8–PsyCa 10): Example: "I am currently working actively to achieve my set work goals." Proactive Behavior was measured using 10 items (PB 1–PB 13), adapted from Parker et al. (2006), with an example item: "I try to develop more effective working methods."

The five-point Likert scale was used, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), allowing respondents more flexibility in their answers. The resulting average weight scores were distributed as follows:

1 to 1.79 = **Strongly Disagree**; 1.80 to 2.59 = **Disagree**; 2.60 to 3.39 = **Neutral**; 3.40 to 4.19 = **Agree**; 4.20 to 5 = **Strongly Agree**

3.3 Statistical Software Used in the Research

The SPSS version 26 software was used to describe the levels of the study variables through mean weight scores. Additionally, Smart PLS 4 was utilized, with a significance level of 5% adopted for analysis.

4. Results and Discussion

4.1 Description of the Study Sample

Table 1: Personal Data of the Study Sample

Personal Characteristics		Frequency	Percentage (%)
Gender	Male	72	45.6
	Female	86	54.4
Age	< 35 years	72	45.6
	36-45 years	58	36.7
	> 46 years	28	17.7

Years of Service	< 5 years	72	45.6
	6-15 years	64	40.5
	> 16 years	22	13.9
Job Level	Assistant Professor	88	55.7
	Associate Professor	42	26.6
	Full Professor	28	17.7

Note : N = 158

The results from Table 1 show that the majority of the sample consisted of female participants (n=86). Most of the participants were under 35 years of age (n=72), had less than 5 years of work experience (n=72), and held the rank of Assistant Professor (n=88).

4.2 Phases and Criteria for Evaluating the Research Model According to the (SEM-PLS) Methodology

The research model is evaluated based on the SEM-PLS methodology, as illustrated in figure 02.

4.3 Evaluation of the Measurement Model: Ensuring Reliability and Validity of Variables and Their Indicators

4.3.1 Reliability and Convergent Validity of the Measurement Model

Table 2: Summary of Measurement Model Evaluation Criteria (Reliability, Convergent Validity)

variables		Outer loading	Convergent validity		Internal consistency reliability	
			Cronbach α	CR	Cronbach α	CR
			0.60~0.90	0.60~0.90	0.60~0.90	0.60~0.90
Aut Lea	Sel-aw	AL1	0.881	0.761	0.895	0.927
		AL2	0.888			
		AL3	0.828			
		AL4	0.891			
	Rel tre	AL5	0.857	0.758	0.893	0.926
		AL6	0.833			
		AL7	0.887			
		AL8	0.904			
	Inte m per	AL9	0.894	0.752	0.890	0.924
		AL10	0.825			
		AL11	0.887			

		AL12	0.863			
Psy Ca	**W sel-ef**	**PCY CA1**	0.885	**0.754**	**0.837**	**0.902**
		PCY CA2	0.849			
		PCY CA3	0.871			
	Opt	**PCY CA4**	0.829	**0.722**	**0.616**	**0.838**
		PCY CA5	-			
		PCY CA6	-			
		PCY CA7	0.870			
	felx	**PCY CA8**	0.843	**0.674**	**0.757**	**0.861**
		PCY CA9	0.857			
		PCY CA10	0.760			
Pro Beh		**PB1**	-	**0.606**	**0.935**	**0.944**
		PB2	0.788			
		PB3	0.777			
		PB4	0.727			
		PB5	0.845			
		PB6	0.774			
		PB7	0.816			
		PB8	0.733			
		PB9	0.787			
		PB10	0.777			
		PB11	0.793			
		PB12	-			
		PB13	0.737			

Notes: **Aut Lea** = Authentic Leadership;**Psy Ca** = Psychological Capital; **Pro Beh** = Proactive Behavior; **CR** = Composite Reliability; **AVE** = Average Variance Extracted.

- Convergent Validity: As shown in Table 2, the outer loading values for all indicators are greater than 0.7, indicating that all latent variables and their indicators exhibit high levels of convergent validity. This means each variable explains more than 50% of the variance in its indicators, except for the indicators PB1 and PB12, which were removed, as well as PCY CA5 and PCY CA6.

- Internal Consistency: The reliability of internal consistency was assessed through composite reliability (CR) and Cronbach's alpha for each variable. Most of the values are above the threshold (greater than 0.7), and composite reliability exceeded 80% for all variables, indicating high internal consistency. Therefore, the variables are reliable and can be used for evaluating the structural model and testing the hypotheses.

4.3.2 Discriminant Validity of the Measurement Model

Discriminant validity ensures that the indicators measuring a particular latent variable do not measure other latent variables. To assess discriminant validity, the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT) are used, as shown in Table 3.

Table 3: Discriminant Validity of Latent Variables According to the HTMT Criterion

	Aut Lea	Psy Ca	Pro Beh
Authentic Leadership			
Psychological Capital	0.256		
Proactive Behavior	0.398	0.693	

Notes: **Aut Lea** = Authentic Leadership; **Psy Ca** = Psychological Capital; **Pro Beh** = Proactive Behavior.

The results of the Fornell-Larcker criterion indicate that the model is valid if the correlation values for each variable are greater than the highest correlation with another variable (Hair et al., 2012). This suggests that there is a distinct difference between the variables in the measurement model, and that each variable represents itself. Therefore, the measurement model is suitable for structural model evaluation.

4.4 Evaluation of the Structural Model and Hypothesis Testing

To assess the hypothesized relationships in the structural model and test the hypotheses—specifically, the extent to which the independent variable predicts the dependent variable, as well as the influence of the mediator and moderator variables in various relationships—the analysis relies on examining multicollinearity issues among the variables using the Variance Inflation Factor (VIF) criterion. Additionally, a set of other evaluation criteria is used, such as Q^2, F^2, R^2, and the statistical significance of direct, indirect, mediation, and moderation path coefficients.

4.4.1 Evaluation of Multicollinearity in the Structural Model

To examine the multicollinearity problem among the variables in the structural model, the Variance Inflation Factor (VIF) was assessed, as shown in the table below:

Table 4: Multicollinearity Assessment Using VIF

	Aut Lea	Psy Ca	Pro Beh
Self-Awareness	1.000		
Relation Transparency	1.000		
Internalized Moral Perspective	1.000		
Aut Lea		1.000	1.046
Psy Ca			1.046

Notes: **Aut Lea** = Authentic Leadership; Psy **Ca** = Psychological Capital; **Pro Beh** = Proactive Behavior

It is observed that all VIF values are below 5, which indicates that multicollinearity does not pose a problem in assessing the quality criteria of the structural model concerning the relationships between the variables.

4.4.2 Evaluation of R^2, F^2, and Q^2 in the Study Model

Table 5: Evaluation of R^2, F^2, and Q^2 in the Study Model

	R^2	F^2	Q^2
Independent: Aut Lea		0.116	
Dependent: Pro Beh	0.466		0.128
Mediator: Psy Ca	0.044	0.607	0.026

Note: **Aut Lea** = Independent variable; **Psy Ca** = Mediator; **Pro Beh** = Dependent variable

- **R^2 (Coefficient of Determination):** R^2 is one of the key measures for evaluating the structural model, as it assesses the predictive power of the model. A value of 0.2 or higher is considered acceptable, and values above 0.75 indicate very strong predictive power (Hair et al., 2012; Henseler et al., 2009). The results in the table show that **Aut Lea** explains 46.6% of the variance in **Psy Ca**, and together, **Aut Lea** and **Psy Ca** explain 4.4% of the variance in **Pro Beh**, which are moderate values, as they are above the average threshold of 50%.
- **F^2 (Effect Size):** According to Cohen (2013), an F^2 value greater than 0.35 indicates a large effect size, values between 0.35 and 0.15 indicate a medium effect size, and values between 0.15 and 0.02 indicate a small effect size. Values below 0.02 indicate no effect. Based on the table, the effect size of **Aut Lea** on **Pro Beh** through its dimensions is small (0.116), whereas the effect of **Psy Ca** on **Pro Beh** is large (0.607), as it exceeds 0.35.
- **Q^2 (Predictive Relevance):** Q^2 measures the predictive relevance of the model, with values greater than 0 being acceptable (Geisser, 1974). It is observed that the Q^2 values are greater than 0 for both the **Independent** and **Mediator** variables, indicating that both the independent and mediator variables are able to predict the dependent variable (**Pro Beh**). Therefore, these variables can be considered reliable for the model.

Figure 2: Displays the evaluation of the structural model paths using the Bootstrapping technique.

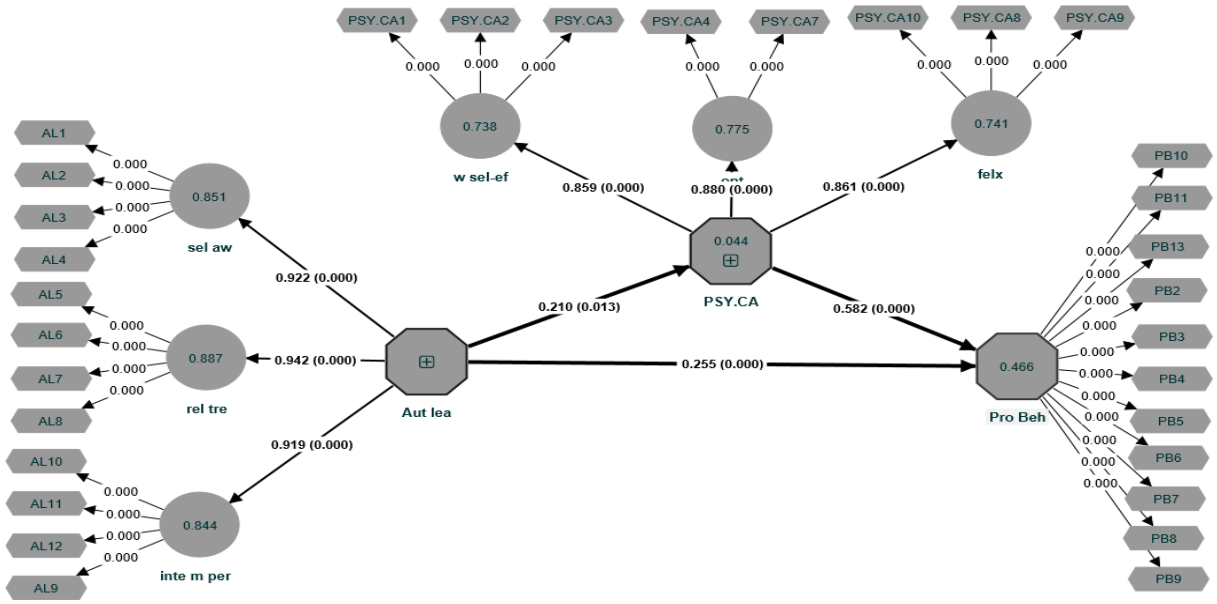


Table 6: Statistical Significance Evaluation of the Relationships (Direct, Mediation, and Moderation Effects)

Type of Effect	Relationships between Variables	Path Coefficient	T	P Values	Hypothesis Decision	Confidence Intervals
Direct Effect	Aut Lea → Pro Beh	0.377	5.372	0.000**	Accept H1	[0.523, 0.248]
	Aut Lea → Psy Ca	0.210	2.492	0.013*	Accept H2	[0.381, 0.045]

	Psy Ca → Pro Beh	0.582	6.875	0.000**	**Accept H3**	[0.720, 0.389]
Indirect Effect (Mediation)	**Aut Lea → Psy Ca → Pro Beh**	0.122	2.633	0.008**	**Accept H4**	[0.214, 0.026]
Moderating Effect	**gender* Aut Lea → Pro Beh**	-0.008	0.072	0.943	**Reject H5-1**	[-0.226, -0.195]
	gender* Psy Ca → Pro Beh	0.350	2.402	0.016	**Accept H5-2**	[0.055, 0.633]

Note: Aut Lea = Authentic Leadership; Psy Ca = Psychological Capital; Pro Beh = Proactive Behavior; ***P Values < 0.01, *p < 0.05.*

1. Direct Effect:

From the results in the table, it is evident that all direct relationships between variables are significant, as the T-values exceed the critical value (T = 1.96). Additionally, the path coefficients for the direct relationships between Aut Lea and Pro Beh, Aut Lea and Psy Ca, and Psy Ca and Pro Beh are statistically significant at the 0.05 level, with their respective confidence intervals not containing zero. Therefore, **hypotheses H1, H2, and H3 are confirmed.**

2. Indirect Effect (Mediation):

The results from the table indicate the presence of a mediating role for Psy Ca between Aut Lea and Pro Beh at the 0.05 significance level. Moreover, the confidence intervals for the path coefficients do not include zero, thus confirming the **validity of hypothesis H4**. The mediation is identified as partial complementary mediation, where both the direct and indirect effects are statistically significant and indicate the same direction, consistent with Zhao et al. (2010, p. 201).

3. Moderating Effect of Personal Variables on the Relationship between Authentic Leadership, Psychological Capital, and Proactive Behavior:

The moderating variable alters the strength or direction of the relationship between two variables in the model, provided that statistical significance is achieved. Based on the results in Table 6, the statistical significance of the gender variable as a moderator of the relationship between authentic leadership and proactive behavior is not established, as the confidence intervals for their path coefficients include zero: [-0.226, -0.195]. Therefore, the sub-hypothesis **H5-1 is rejected**. Conversely, the statistical significance of gender as a moderator in the relationship between psychological capital and proactive behavior is confirmed, as the confidence intervals for their path coefficients do not contain zero: [0.055, 0.633]. Hence, the sub-hypothesis **H5-2 is accepted.**

Figure 3 presents the results of the moderation test on the structural model of the study, and Table 7 displays the path coefficient of the moderation relationships for the study model.

Figure 3: the results of the moderation test for gender

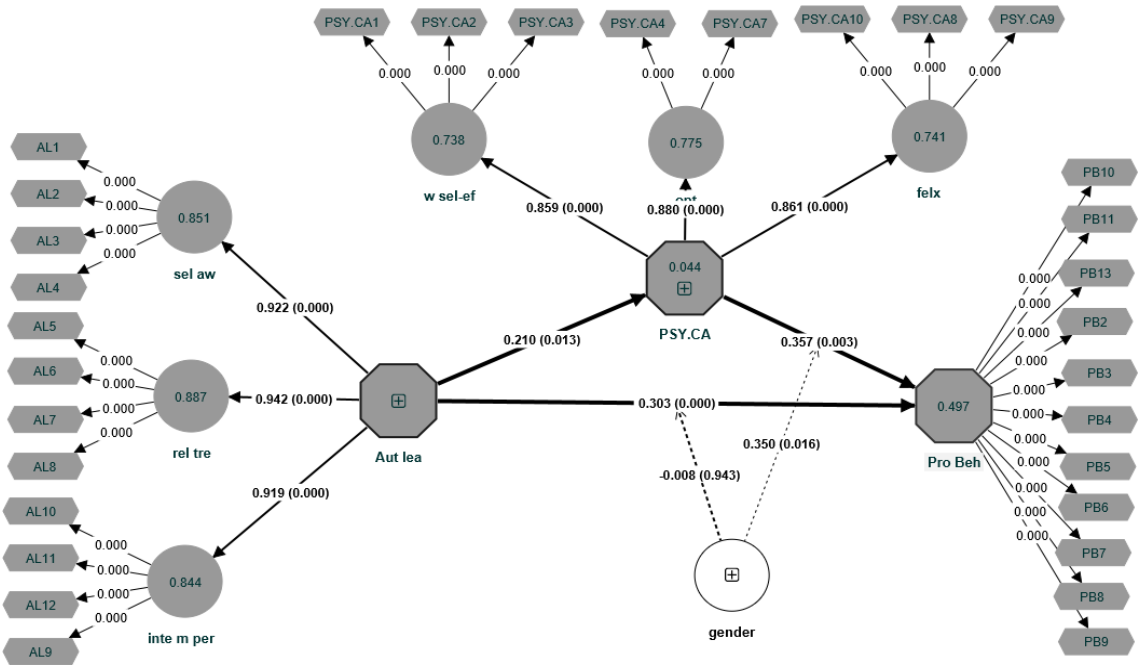


Table 7: Evaluation of males^females in the Study Model for the Moderating Variable (Gender)

	Pro Beh	Psy ca
Aut Lea	0.067	0.046
Psy ca	0.064	
Gender* Aut Lea	0.000	
Gender* Psy ca	0.044	

Note: Aut Lea = Authentic Leadership; Psy Ca = Psychological Capital; Pro Beh = Proactive Behavior.

Moderating Effect of Gender on the Relationship between Aut Lea and Pro Beh: No moderating effect of gender is found on the relationship between the independent and dependent variables at a significance level less than 0.05. Additionally, the confidence intervals for the path coefficient estimate (-0.008) include zero: [-0.226, 0.195]. This indicates that the effect of Aut Lea on Pro Beh does not differ between males and females.

This is further illustrated in Figure 4, which shows the regression curve for the simple regression plot. The red line represents the relationship between the variables for males, while the green line represents the relationship between the variables for females.

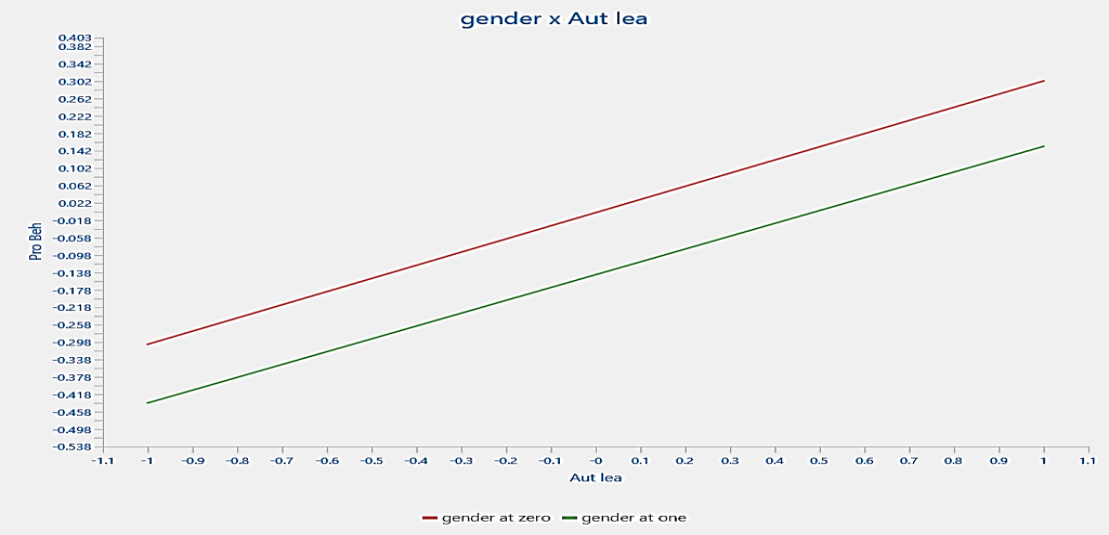


Figure 4: Graphical Curve Showing the Moderating Effect of Gender on the Relationship between Aut Lea and Pro Beh

Moderating Effect of Gender on the Relationship between Psy Ca and Pro Beh: There is a significant moderating effect of gender on the relationship between the mediator and the dependent variable, with a positive effect at a significance level of less than 0.05. The confidence interval for the estimated path coefficient (0.350) does not include 0: [0.055-0.633]. This indicates that the effect of Psy Ca on Pro Beh differs between males and females. The moderating effect of gender on the relationship between Psy Ca and Pro Beh is further illustrated in Figure 5, which presents a graphical curve from a simple regression plot. The red line represents the relationship between the variables for males, while the green line represents the relationship between the variables for females.

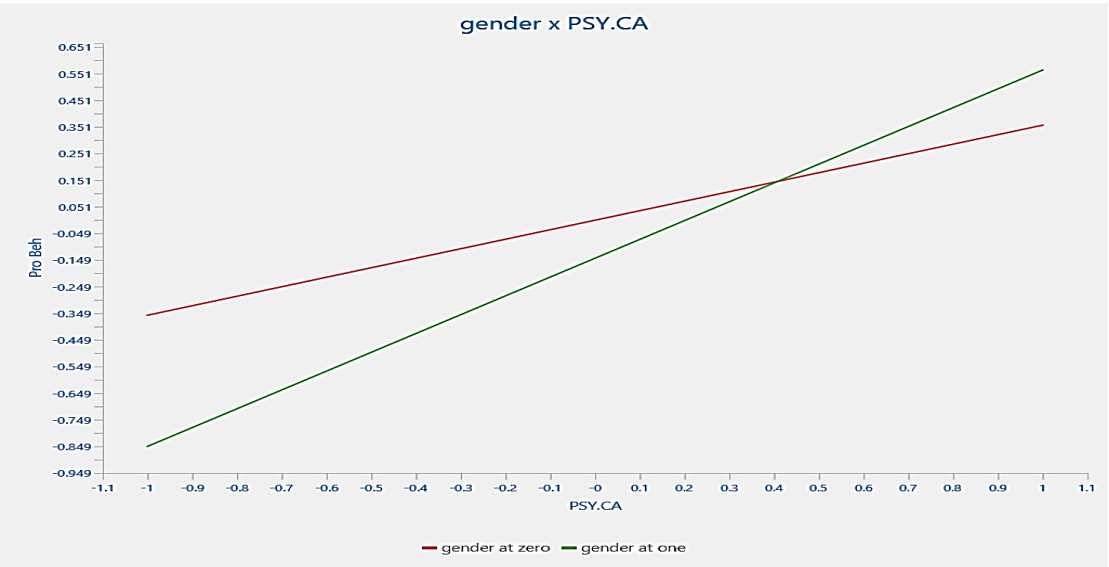


Figure 5: Graphical Curve Showing the Moderating Effect of Gender on the Relationship between PsyCa and Pro Beh

5. Analysis of Results :

The aim of this study was to explore the impact of both authentic leadership and psychological capital on proactive behavior in the higher education sector, which is a critical and sensitive sector influenced by psychological and emotional factors due to the nature of the work performed (Supriyadi et al., 2020) . This study distinguishes itself from others by attempting to understand how authentic leaders influence faculty members to

gain their trust by focusing on psychological aspects (self-efficacy, optimism, resilience), thus motivating them to adopt proactive behaviors in performing their duties in higher education institutions. According to the researchers' current knowledge, no study has addressed this topic in the Algerian higher education sector. This study used PLS-SEM to test the hypotheses we formulated, and the study concluded with the following results:

- Direct Effect of Authentic Leadership on Proactive Behavior: The results indicate a direct effect of authentic leadership on proactive behavior among higher education faculty members. Faculty members tend to favor leaders who establish friendly, trusting relationships that demonstrate their credibility, thereby improving their perception of them. These results align with previous studies (Bai et al., 2022; Hu et al., 2018; Niu et al., 2018; Zhang et al., 2018), who found that authentic leadership significantly affects employees' emotions, leading them to adopt a more optimistic outlook and transform their work environment from one dominated by fear to one that fosters creativity and problem-solving.

- Authentic Leadership's Impact on Psychological Capital: Hypothesis 2 was confirmed, demonstrating that authentic leadership positively influences psychological capital. Faculty members with positive psychological capital are more likely to succeed in both their professional and daily lives compared to their peers, through the high intellectual abilities they exhibit in teaching, research, and other tasks. This finding agrees with (Novitasari et al., 2020) and as Walumbwa et al. (2008) suggest, building employee trust (self-efficacy), enhancing optimism, and fostering resilience can only be achieved through the strong influence of authentic leadership on employee behaviors.

- Impact of Psychological Capital on Proactive Behavior: Hypothesis 3 was confirmed, indicating that psychological capital positively influences proactive behavior. The stronger the psychological capital, the greater the faculty member's ability to engage in proactive behaviors. Psychological capital strengthens faculty members' psychological traits, enhancing their self-confidence in achieving goals, maintaining a positive outlook on the future, and effectively managing challenges. This encourages them not only to stick to traditional methods but also to go beyond their assigned tasks, taking on additional responsibilities and increasing their adaptability, which reflects in overall performance improvement. These results are consistent with studies by (Luthans et al., 2007; Luthans & Youssef, 2004; Parker & Collins, 2010).

- Psychological Capital as a Mediator between Authentic Leadership and Proactive Behavior: The results revealed that psychological capital mediates the relationship between authentic leadership and proactive behavior in higher education faculty. This mediation is partial and complementary, with the direct positive effect of authentic leadership on proactive behavior being stronger than the indirect effect through psychological capital. This can be attributed to the role of authentic leaders (managers) who lead by example and are characterized by relational transparency. This, in turn, affects the emotional state of faculty members. This finding aligns with previous studies, such as those by (Adil & Kamal, 2019; Hu et al., 2018; Luthans, Avey, et al., 2006; Luthans et al., 2007; Luthans et al., 2005) which concluded that psychological capital can mediate the relationship between work engagement and proactive behavior. According to clinical psychology, recovering from previous setbacks is an experience that enhances one's resilience in facing future challenges (Luthans et al., 2007). Roth and Laireiter (2021) described emotions as a complex mixture of joy and love governed by life experiences. By linking these ideas, we conclude that influencing psychological aspects makes an individual more resilient and steadfast due to their past experiences, generating positive emotions that increase their motivation to try again and gain life experiences that contribute to success in future endeavors (Luthans et al., 2005; Luthans, Vogelgesang, et al., 2006).

- Partial Validation of Hypothesis *5*: Hypothesis 5, which posits that gender moderates the relationship between authentic leadership, psychological capital, and proactive behavior in higher education faculty, was partially validated. The results revealed a moderating effect of gender on the relationship between psychological capital and proactive behavior, with a positive effect favoring males compared to females. This can be explained by the fact that men tend to exhibit psychological capital traits such as high self-confidence, ambition, and risk-taking, making them more proactive in decision-making compared to females, who are generally more cautious and thoughtful (Luthans & Youssef, 2004). Additionally, the social and cultural composition plays a significant role in these findings (Schneider & Smith, 2004). The Algerian society is largely based on Islamic principles, which set certain constraints for women in their professional roles compared to men, who have more freedom in pursuing their careers. Many women do not wish to take on higher leadership positions due to the responsibility and fear of being transferred to distant locations, which leads to a sense of routine and lack of proactive behavior.

6. Limitations of the Study:

Although this study has yielded useful results, it is not without certain limitations that could be addressed in future research. First: The data collection in this study was limited to surveys, and the target sample was one-dimensional (faculty members only). Future research could diversify data collection methods, such as incorporating interviews, and expand the target sample to include all stakeholders within the university, which would enhance the credibility of the data. Second: This study aimed to understand the theory of authentic leadership and its influence on behavior through psychological capital, based on findings from previous research. However, there remains a need for experimental studies that focus on social and cultural aspects and how they influence gender responses (male, female) to leadership. Third: The study relied on a simple model with only three variables. Future research could use a more complex model, such as a multimedia model, incorporating other variables to provide a clearer explanation of the studied phenomenon. Additionally, while the results were analyzed using PLS-SEM (Partial Least Squares Structural Equation Modeling), it would be advisable to rely on CB-SEM (Covariance-Based Structural Equation Modeling) in future studies for a more comprehensive analysis using Smart PLS 4 software.

7. Conclusion:

In order for proactive behavior to emerge, it is essential first to understand the behavior through authentic leadership, which motivates faculty members to take initiative in improving themselves and their work environment. This is achieved through the authenticity displayed by the leader (the responsible figure), which inspires creativity and innovation in their field of work. The core of this process lies in gaining the trust of faculty members by openly and transparently sharing the emotions demonstrated by the leader. Leadership theories have substantiated this notion, emphasizing that a true leader is one who earns the trust of their followers, understands their perceptions, and embodies strong ethics and principles in all circumstances, including transparency and integrity. Moreover, such leadership influences followers through psychological capital, which generates positive emotions through self-efficacy, optimism, and resilience.

Ethical Considerations

This study was conducted in accordance with ethical research standards governing social science and behavioral research. Participation was voluntary, and informed consent was obtained from all respondents prior to data collection. Confidentiality and anonymity of participants were strictly ensured, and no identifying personal information was collected. Ethical approval for conducting the study was obtained from the Research Ethics Committee of the Faculty of Economic Sciences, University of Algiers 03. All procedures followed relevant institutional and national research ethics guidelines.

Methodology

A quantitative research methodology was employed to examine the relationships between authentic leadership, psychological capital, and proactive behavioral disposition. Data were collected from a purposive sample of 200 university lecturers from the University of Algiers 03 using a structured online questionnaire. The measurement instruments for authentic leadership, psychological capital, and proactive behavior were adapted from validated scales in prior literature, ensuring reliability and construct validity.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via the SmartPLS software. Reliability and validity tests, including Cronbach's alpha, composite reliability, and average variance extracted (AVE), were applied to ensure internal consistency and convergent validity. Bootstrapping with 5,000 resamples was conducted to assess the significance of structural paths. Mediation and moderation effects were examined to assess the intervening role of psychological capital and the moderating impact of gender, respectively.

Novelty and Contribution

This study provides a unique contribution by empirically examining the interplay between authentic leadership and proactive behavioral disposition in a higher education context in Algeria—an under-studied setting in organizational behavior scholarship. Unlike previous studies that focus primarily on corporate environments, this research expands theoretical knowledge by integrating psychological capital as a mediating variable and gender as a moderating factor within academic institutions. The findings enhance understanding of how authentic leadership fosters proactive behavioral tendencies among university faculty and highlight gender-based variations

in psychological resources and proactive outcomes. The study offers new insights for university governance and leadership development programs in emerging economies.

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Author Contributions . All authors read and approved the final version of the manuscript.

Sami Bessa: Conceptualization, methodology design, data analysis, and manuscript drafting.
Fadila Abdelhamid: Literature review, instrument validation, and data interpretation.
Saadia Khamet: Data collection, statistical support, and manuscript revision.

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Conflict of Interest. The authors declare that there are no conflicts of interest related to this study. The research was carried out independently without any financial, academic, or personal influences that could affect the findings or interpretations.

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