

The Predictive Ability of Psychological Capital on Organizational Integrity among Sonatrach Workers: A Field Study at Berkawi Basin – Ouargla

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Received : 11/01/2026 ; Accepted : 27/06/2026 ; Published : 29/07/2026

Abstract:

The present study aimed to identify the level of psychological capital and organizational virtuousness among workers at Sonatrach Company in the Berkawi Basin, Ouargla, as well as to examine the predictive ability of psychological capital on organizational virtuousness. It also sought to investigate differences in psychological capital and organizational virtuousness according to the variable of work seniority. The study adopted the descriptive correlational method. To achieve its objectives, the researcher used the Psychological Capital Scale developed by Wari Hassan (2023) and the Organizational Virtuousness Scale developed by Abu Shukair Zahra Jamal Sabri (2018). After verifying the psychometric properties of the two instruments, they were administered to a sample of 200 workers from Sonatrach Company in the Berkawi Basin, Ouargla. The findings revealed that the levels of psychological capital and organizational virtuousness were high among the study sample. The results also showed that organizational virtuousness could be significantly predicted through three dimensions of psychological capital, namely resilience, optimism, and hope. Furthermore, no statistically significant differences were found in psychological capital and organizational virtuousness according to work seniority.

Keywords: Psychological Capital – Organizational Virtuousness – Sonatrach Company, Berkawi Basin, Ouargla.

I. Introduction

The contemporary world is witnessing rapid developments across various industrial and technological fields, leading to fundamental transformations in modern work environments, which have become increasingly dependent on advanced technologies and modern production and management systems. Although these transformations have facilitated work performance, enhanced productivity, and improved service quality, they have simultaneously imposed growing professional and psychological demands on employees due to the complexity of work, occupational pressures, and the physical and organizational conditions that characterize different work environments.

These demands become even more pronounced within organizations whose nature of work is highly sensitive and requires exceptional precision, where employees are continuously expected to comply with performance standards, maintain discipline, and assume diverse professional responsibilities, while simultaneously adapting to rapid organizational and technological changes. Furthermore, the multiplicity of tasks, work overload, and accelerated work pace require employees to possess high

levels of concentration, adaptability, and continuous coordination, making certain organizations particularly vulnerable to occupational challenges depending on the nature of their activities and prevailing working conditions.

Petroleum companies are among the organizations in which these challenges are particularly evident due to the distinctive characteristics of their work environment. Their activities rely heavily on field operations and the handling of industrial equipment, chemical substances, and various gases, in addition to shift work conducted in isolated areas far from residential communities. Moreover, work within these organizations requires a high degree of discipline, coordination, and cooperation among employees from different professional specialties to ensure operational continuity and achieve the production objectives of such petroleum enterprises.

Among these organizations is Sonatrach's Berkine Basin (Berkawi) in Ouargla, one of the major oil production sites in southern Algeria, distinguished by its unique organizational and professional characteristics. The nature of work in this company requires a high level of discipline, precision, and coordination among employees from various disciplines. Employees operate in a professional environment characterized by multiple responsibilities, heavy workloads, and continuous shift schedules. These conditions require workers to continuously adapt to varying occupational and field circumstances, which may influence their psychological well-being and their levels of professional and organizational adjustment.

Within this context, increasing attention has been directed toward the positive psychological aspects of employees as a modern organizational approach aimed at enhancing work performance and strengthening the ability to cope with occupational stress. Employees' successful adaptation to demanding work environments depends not only on material resources or technical competencies but also on their psychological condition and the extent to which they possess positive characteristics that enable them to remain resilient, persistent, and optimistic while performing their duties. Consequently, there has emerged a growing need to investigate positive psychological variables that contribute to supporting human resources and achieving a balance between work demands and employee well-being.

In light of this growing interest, the concept of **psychological capital** has emerged as one of the modern constructs in positive organizational psychology. It "enhances individual motivation, generates well-being and the desire to learn, and promotes cooperation and collective intelligence within work teams" (Zinoun & Jamila, 2022, p. 5). The emergence of this concept reflects the increasing interest in employees' positive psychological capacities and resources, given their important role in improving performance and adapting to diverse work demands. Although the term *psychological capital* initially originated in the fields of economics and investment, its theoretical foundation lies in positive psychology, which emphasizes the study of individuals' strengths and positive capacities rather than focusing on weaknesses and psychological disorders (Luthans et al., 2007), as it enhances individual motivation and promotes a positive perception of life events.

Accordingly, psychological capital is regarded as a **positive psychological resource** that enables employees to cope effectively with occupational stress and adapt to the various challenges encountered in the workplace. It may also be reflected in employees' professional and organizational behaviors within the organization. Furthermore, psychological capital extends beyond the concepts of human capital and social capital by focusing more on "**who the individual is**" rather than "**what the individual knows**" or "**whom the individual knows.**" Luthans

emphasized that the growing recognition of human resources as a competitive advantage in the modern economy has directed researchers' attention toward human and social capital, while positive psychological capital has received comparatively less attention despite its significant role in explaining human behavior in the workplace (Al-Anzi & Ibrahim, 2012, pp. 7–8).

Ahmed further stated that psychological capital consists of the positive psychological characteristics and capabilities possessed by individuals, which enable them to adopt and implement the behaviors necessary to achieve success and excellence in the tasks assigned to them (Ahmed, 2017, p. 143). These capabilities include **self-efficacy, hope, optimism, and psychological resilience**, all of which help individuals cope effectively with occupational pressures and challenges. Psychological capital also contributes to enhancing motivation, achievement, and the ability to transform stressful situations into opportunities for growth and development.

This concept has attracted increasing attention in contemporary organizational and management research because of its effective role in enhancing performance, facilitating adaptation to stress, and promoting organizational success. Among these studies is that of **Bordham Kenza** (2018), which investigated the impact of work stress on positive psychological capital through a case study conducted at Saad Dahlab Public Hospital. The findings revealed a statistically significant effect of work stress on positive psychological capital, as well as significant differences in respondents' perceptions attributable to their personal characteristics, including gender, employment status, job permanence, educational level, work experience, and marital status. Likewise, the study conducted by **Abbassi Abdelkaddous** and **Kadi Amna** (2023) examined the impact of positive psychological capital on human performance excellence through a field study at the Office for Promotion and Real Estate Management in Ouargla. Their findings indicated high levels of positive psychological capital and human performance excellence among the study participants (Abbassi & Kadi, 2023).

Similarly, **Wari Hassan** (2023) investigated the mediating role of psychological capital in the relationship between transformational leadership and organizational creativity, while also examining the prevalence of transformational leadership practices and the levels of psychological capital and organizational creativity at **METAL CR**, from the perspective of its managerial staff. The study concluded that transformational leadership, psychological capital, and organizational creativity all exhibited high levels. In contrast, **Mouslemal Amina** (2025) examined the levels of psychological capital and psychological hardiness among individuals with diabetes aged between 24 and 73 years. The findings indicated moderate levels of both psychological capital and psychological hardiness and revealed no significant relationship between the two variables (Mouslemal, 2025).

The foregoing review demonstrates that psychological capital is an important variable influencing numerous psychological and organizational aspects of the work environment. It has been associated with improved human performance, enhanced organizational creativity, and greater ability to cope with work-related stress. While some studies have reported high levels of psychological capital among employees, others have found that its level varies according to the characteristics of the population under investigation and the surrounding contextual conditions. These findings underscore the importance of psychological capital as a positive psychological resource that contributes to strengthening adaptation and effectiveness across diverse occupational and organizational settings.

It is worth noting that although psychological capital represents one of the positive psychological resources that help employees adapt to work demands and improve their professional performance, the effectiveness of these resources cannot be separated from the organizational environment in which individuals work. Modern organizations no longer focus exclusively on material and structural aspects; they also emphasize the ethical values and practices governing workplace relationships because of their role in fostering trust, cooperation, and organizational stability.

Within this framework, the concept of **organizational virtuousness** has emerged as a relatively recent construct, arising in response to the ethical and financial failures experienced worldwide and within the business community during recent decades. It was introduced at both the individual and organizational levels to enhance individual performance and organizational effectiveness (Lilius et al., 2008). Organizational virtuousness is considered one of the most prominent positive constructs in organizational behavior because of its close association with ethical conduct, commitment to organizational values and professional standards, and the reduction of negative workplace practices. In this regard, Mustafa and Amin (2023, p. 61) argued that organizational virtuousness serves as an ethical compass within organizations, positively influencing behavioral and organizational outcomes while stimulating positive motivation toward work.

This concept is closely associated with individuals' behaviors within organizational settings and with the dissemination of virtuous practices across different organizational contexts. It encompasses the practice of positive habits, intentions, and actions that are reinforced at both individual and collective levels. It is likewise associated with the finest attributes of human resources, ethical values, organizational integrity (Al-Maitri, 2022, p. 237), and adherence to organizational laws and professional procedures. In this respect, Abu Shukri argued that organizational virtuousness represents a multidimensional managerial system that describes organizational behaviors and their socially accepted outcomes. Employees are committed to implementing its principles in ways that fulfill their aspirations and strengthen reciprocity among organizational members. It also involves adopting, sustaining, and broadly sharing these virtuous behaviors to promote the happiness and well-being of others (Abu Shukri, 2018, p. 84).

Furthermore, organizational virtuousness embodies managerial ethics and virtue-based organizational behavior. Its influence extends to interpersonal relationships within the organization, contributing to improved organizational quality of life, enhanced organizational effectiveness, and encouraging employees to support the organization, particularly during times of crisis. Studies addressing organizational virtuousness have indicated that it represents a revival of traditions rooted in managerial ethics and virtue-based behavior, extending to social relationships within organizations, commonly referred to as **social capital**. Moreover, organizational virtuousness enhances the well-being of organizational members and stakeholders, improves organizational effectiveness, and increases employees' willingness to support their organizations during crises (Nikandrou & Tsachouridi, 2015).

Since 2003, numerous theoretical and empirical studies have examined organizational virtuousness and its role in organizational success (Cameron, 2003). Among these is the study by **Kooshki and Zeinabadi** (2015), which investigated the relationship between organizational virtuousness, job satisfaction, and organizational commitment among teachers in schools in Karaj, Iran. The study concluded that the level of organizational virtuousness in schools was high and that it played a

significant positive role in promoting teachers' job satisfaction and organizational commitment (Niryokh, 2024, p. 60).

Similarly, the study conducted by **Yazid Hammouda** and **Ti Ahmed** (2024) examined the impact of organizational virtuousness on employees' work engagement at the Municipality of El-Triat in Annaba. The findings demonstrated a statistically significant effect of organizational virtuousness on work engagement within the organization. The study also found no statistically significant differences in work engagement or organizational virtuousness attributable to gender or length of service (Hammouda & Ti, 2024).

Likewise, the study conducted by **Niryokh Shahd Rafiq Sadiq** (2024) explored the reality of organizational virtuousness among school principals and its relationship with job performance and achievement motivation from teachers' perspectives. The findings revealed that organizational virtuousness among public school principals in the Directorates of Education in Hebron Governorate was perceived to be at a high level. Furthermore, no significant differences were found in organizational virtuousness, job performance, or achievement motivation attributable to gender or years of experience (Niryokh, 2024).

Previous studies have demonstrated that organizational virtuousness is an important factor in improving organizational performance and behavior within institutions. It has been positively associated with job satisfaction, organizational commitment, and work engagement. Moreover, most studies have reported high levels of organizational virtuousness and found that it is generally unaffected by certain demographic variables, such as gender and years of experience. These findings highlight the importance of organizational virtuousness in fostering a positive organizational climate within institutions.

However, despite the growing interest in the construct of organizational virtuousness in psychological and organizational research, studies examining its relationship with psychological capital remain limited, particularly within the Algerian context and the hydrocarbon sector. This gap highlights the scientific and practical significance of the present study, as it contributes to enriching the theoretical literature on these two constructs while providing empirical evidence that enhances the understanding of their relationship within the petroleum work environment. Furthermore, the study seeks to examine the predictive ability of psychological capital for organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla by addressing the following research questions:

- What is the level of psychological capital among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla?
- What is the level of organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla?
- To what extent can the dimensions of psychological capital predict organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla?
- Are there significant differences in psychological capital and organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla attributable to gender?

I.1. Study Hypotheses

1. Organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla can be significantly predicted by the dimensions of psychological capital, namely **self-efficacy, resilience, optimism, and hope**.
2. There are significant differences in psychological capital and organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla attributable to **length of work experience**.

I.2. Significance of the Study

The significance of the present study is reflected in the following aspects:

- The importance of this study stems from the significance of **psychological capital** and **organizational virtuousness** as contemporary concepts in organizational psychology and management, given their important role in improving organizational performance and workplace behavior.
- This study derives its importance from the target population, namely the employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla, who constitute a fundamental human resource within a vital economic sector. Human resources represent the cornerstone for achieving organizational objectives and enhancing both productive and organizational efficiency. Moreover, the nature of work at Sonatrach requires employees to possess substantial positive psychological capacities, such as resilience, optimism, and self-efficacy, in addition to commitment to ethical and organizational values.
- The findings of this study may provide a foundation for future research investigating psychological and organizational variables associated with psychological capital and organizational virtuousness across different work environments.

I.3. Objectives of the Study

- To identify the levels of psychological capital and organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla.
- To examine the predictive ability of the dimensions of psychological capital for organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla.
- To determine whether significant differences exist in psychological capital and organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla attributable to gender.

I.4. Operational Definitions of the Study Variables

a. Operational Definition of Psychological Capital

Psychological capital refers to an individual's possession of a set of positive psychological characteristics that enable them to perform their tasks efficiently and effectively (self-efficacy), pursue goals while possessing the ability to plan and identify appropriate alternative pathways to achieve them (hope), overcome obstacles and recover from failures and difficulties (resilience), and maintain the belief that positive outcomes will occur in their future professional life (optimism). Psychological capital is measured through the combined assessment of these four dimensions.

Operationally, psychological capital is measured by the total score obtained by employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla on the Psychological Capital Scale

developed by Wari Hassan (2023), comprising the dimensions of self-efficacy, resilience, optimism, and hope, as applied in the 2026 study.

b. Operational Definition of Organizational Virtuousness

Organizational virtuousness refers to a multidimensional managerial system that characterizes organizational behaviors and their expected outcomes, which are socially accepted and to which organizational members are committed. These behaviors include **optimism, trust, compassion, integrity, and forgiveness**, reflecting the standards that individuals aspire to for themselves and others, while promoting reciprocity, sustaining virtuous behaviors, and encouraging their widespread adoption to foster happiness and well-being for others.

Operationally, organizational virtuousness is measured by the **total score** obtained by employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla on the **Organizational Virtuousness Scale** developed by **Abu Shukair Zahra Jamal Sabri (2018)**, consisting of the dimensions of **organizational optimism, organizational trust, organizational compassion, organizational integrity, and organizational forgiveness**, as applied in the **2026** study.

I.5. Delimitations of the Study

- ✓ **Human Delimitation:** The present study is limited to a sample of employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla.
- ✓ **Spatial Delimitation:** The study was conducted at Sonatrach, Berkine (Berkawi) Basin, Ouargla.
- ✓ **Temporal Delimitation:** The study was conducted from **12 to 25 April** during the **2025/2026 academic year**.

II. Materials and Methods

II.1. Research Design

The research design was determined according to the nature of the study. Since the present study aims to examine the predictive ability of psychological capital for organizational virtuousness, the descriptive correlational approach was adopted because of its suitability for this type of research.

II.2. Population and Sample

The study population consisted of all employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla, totaling 1,371 employees in 2026.

The study sample consisted of 200 employees selected using a simple random sampling technique. A total of 220 questionnaires were distributed, of which 200 questionnaires were returned, yielding a response rate of 86.95%.

II.3. Research Instruments

a. Psychological Capital Scale

The study employed the Psychological Capital Scale developed by Wari Hussein (2023), which consists of 16 items distributed across four dimensions as follows:

3.1.1. Self-Efficacy

Measured by items: (1, 2, 3, 4).

3.1.2. Hope

Measured by items: (5, 6, 7, 8).

3.1.3. Resilience

Measured by items: (9, 10, 11, 12).

3.1.4. Optimism

Measured by items: **(13, 14, 15, 16)**.

All scale items were positively worded. The Psychological Capital Scale was scored using a **five-point Likert scale** consisting of: **Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree**, with scoring values of **1, 2, 3, 4, and 5**, respectively.

The psychometric properties reported by the developer of the Psychological Capital Scale were as follows:

1. **Content Validity:** To establish content validity, the preliminary version of the questionnaire was evaluated by **11 expert reviewers**. The **Content Validity Ratio (CVR)** was calculated using **Lawshe's formula**, yielding a value of **85.4%**.
2. **Internal Consistency Validity:** The correlation coefficients for the scale dimensions were as follows:
 - Self-efficacy: **0.685**
 - Optimism: **0.709**
 - Resilience: **0.943**
 - Hope: **0.670**

All coefficients were statistically significant at the **0.001** significance level.

3. **Reliability:** The scale demonstrated satisfactory internal consistency, with a **Cronbach's alpha coefficient of 0.789**.

b. Organizational Virtuousness Scale

The study employed the **Organizational Virtuousness Scale** developed by **Zahra Jamal Sabri Abu Shukair (2018)**. The instrument consists of **15 items** distributed across five dimensions as follows:

3.2.1. Organizational Optimism

Measured by items: **(1, 2, 3)**.

3.2.2. Organizational Trust

Measured by items: **(4, 5, 6)**.

3.2.3. Organizational Integrity

Measured by items: **(10, 11, 12)**.

3.2.4. Organizational Compassion

Measured by items: **(7, 8, 9)**.

3.2.5. Organizational Forgiveness

Measured by items: **(13, 14, 15)**.

All items were positively phrased. The Organizational Virtuousness Scale was scored using a **five-point Likert scale** with the response options: **Strongly Agree, Agree, Uncertain, Disagree, and Strongly Disagree**, assigned scores of **1, 2, 3, 4, and 5**, respectively.

The psychometric properties reported by the developer of the Organizational Virtuousness Scale were as follows:

1. **Content Validity:** The initial version of the questionnaire was reviewed by a panel of experts specializing in management and organizational sciences to assess the appropriateness of the items, their consistency with the research hypotheses and objectives, and the instrument's ability to measure the study variables while ensuring clarity and practical relevance.

2. **Confirmatory Construct Validity:** The Organizational Virtuousness construct is measured through **five sub-dimensions**, each comprising **three items**. Examination of the standardized parameter estimates revealed that all factor loadings exceeded the acceptable threshold of **0.40** and were statistically significant. Furthermore, all critical ratios exceeded **1.96** at the **0.05** significance level, confirming the adequacy and validity of the estimated parameters.

Regarding the model fit indices, the results indicated that all indices fell within acceptable ranges, demonstrating a high degree of model fit. Accordingly, the findings confirmed that the construct of Organizational Virtuousness is appropriately measured by **15 items** distributed across **five interrelated dimensions**.

II.4. Pilot Study

The pilot study sample consisted of 60 employees from Sonatrach at the Berkine (Berkawi) Basin in Ouargla, who were selected using a simple random sampling technique, as presented in the following table.

Table (01): Cronbach's Alpha Coefficients for the Psychological Capital and Organizational Virtuousness Scales

Dimensions of Psychological Capital	Item Number	Cronbach's Alpha	Dimensions of Organizational Virtuousness	Item Number	Cronbach's Alpha
Self-Efficacy	01	.890	Organizational Optimism	01	.866
	02	.887		02	.864
	03	.895		03	.863
	04	.892	Organizational Trust	04	.851
Hope	05	.884		05	.852
	06	.892		06	.852
	07	.885	Organizational Integrity	07	.850
	08	.890		08	.849
Resilience	09	.884		09	.851
	10	.889	Organizational Compassion	10	.851
	11	.887		11	.851
	12	.889		12	.854
Optimism	13	.886	Organizational Forgiveness	13	.860
	14	.883		14	.859
	15	.881		15	.866
	16	.883	Overall Organizational Virtuousness Scale		.856
Psychological Capital Scale		.894			

The following table presents the Cronbach's alpha coefficient values for the two study instruments. The Cronbach's alpha coefficient was estimated at (0.894) for the Psychological Capital Scale and (0.856) for the Organizational Virtuousness Scale. The values for the items of both scales ranged

between (0.850–0.895). These values indicate a high level of reliability because they exceeded (0.70). Therefore, both instruments can be relied upon for collecting the data of the main study.

III. Results and Discussion

This section presents the results of the main study, as revealed by the statistical analysis of the data obtained after administering the two study instruments to a sample of (200) employees at Sonatrach, Berkawi Basin, Ouargla. The results of the field study are presented according to the proposed hypotheses, as demonstrated by the statistical analysis conducted using SPSS Version 25, followed by their analysis and discussion. However, before testing the hypotheses, the normality of the data had to be examined in order to select the appropriate statistical method.

a. Normality Test for the Psychological Capital Scale

To verify the normality of the data, the skewness and kurtosis coefficients were calculated. The skewness value was estimated at ($SK = -0.613$), indicating a slight negative skewness. The kurtosis coefficient was estimated at ($Ks = 0.856$), indicating a slight positive kurtosis in the distribution.

It is observed that both values, namely the skewness coefficient and the kurtosis coefficient, are close to zero and do not exceed (± 3), which indicates that the data follow a normal distribution. This is further confirmed by the significance value (Sig.) of the Kolmogorov–Smirnov test, which was equal to (.200*), a value greater than (0.05). This indicates that the data of the Psychological Capital Scale conform to the normal distribution.

b. Normality Test for the Organizational Virtuosity Scale

To verify the normality of the data, the skewness and kurtosis coefficients were calculated. The skewness value was estimated at ($SK = 0.172$), indicating a slight positive skewness. The kurtosis coefficient was estimated at ($Ks = 0.427$), indicating a slight positive kurtosis in the distribution.

It is observed that both values, namely the skewness coefficient and the kurtosis coefficient, are close to zero and do not exceed (± 3), which indicates that the data follow a normal distribution. This is further confirmed by the significance value (Sig.) of the Kolmogorov–Smirnov test, which was equal to (.200*), a value greater than (0.05). This indicates that the data of the Organizational Virtuosity Scale conform to the normal distribution.

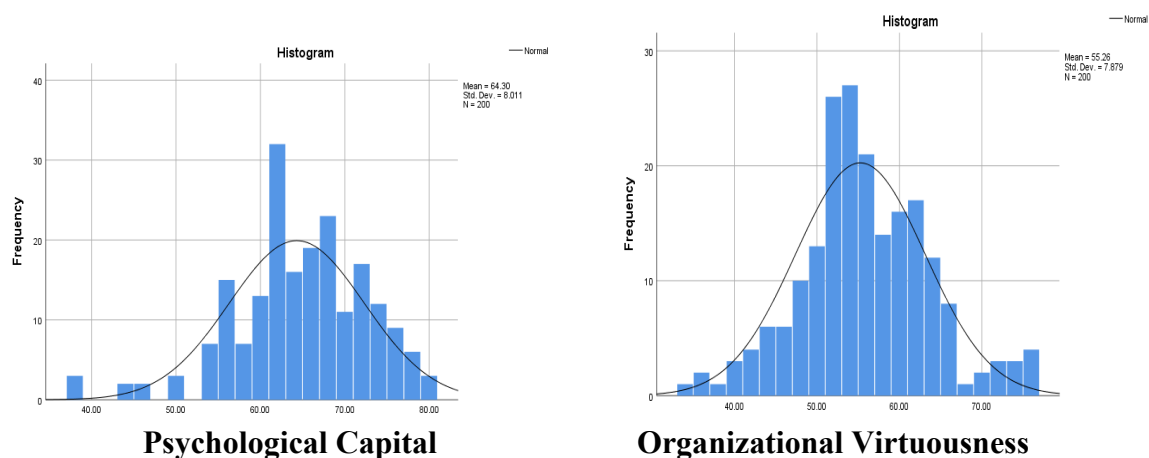


Figure (01): Normal Distribution of the Study Data

As shown in Figure (01), the frequency distribution curve approximates a bell-shaped curve for both variables. Therefore, it can be concluded that the data for both the Psychological Capital Scale and the Organizational Virtuousness Scale follow a normal (Gaussian) distribution.

III.1. Presentation, Analysis, Interpretation, and Discussion of the Results of the First Research Question

The first research question is stated as follows:

What is the level of psychological capital among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla?

To answer this research question, the mean and standard deviation of the respondents' scores on the Psychological Capital Scale were calculated. It should be noted that the theoretical mean of the scale used in this study is 48. The results obtained are presented in the following table.

✓ Theoretical Mean = (Maximum Score + Minimum Score) ÷ 2

✓ Theoretical Mean = $[(16 \times 5) + (16 \times 1)] \div 2 = 48$

Table (02): Results of the One-Sample t-Test Examining the Significance of the Difference Between the Theoretical Mean and the Sample Mean of the Participants' Scores on the Psychological Capital Scale

Variable	Number of Items	Theoretical Mean	Sample Mean	Standard Deviation	Degrees of Freedom (df)	Calculated t-value	P-value (Sig.)	Significance Level (α)
Psychological Capital	16	48	64.30	8.01	199	28.81	.000	0.05

As shown in **Table (02)**, the sample mean of the participants' responses on the study instrument was higher than the theoretical mean. The theoretical mean of the instrument was calculated to be 48. The difference between the two means was examined using a **one-sample t-test**, and the results indicated that the difference was in favor of the sample mean. The calculated **t-value** was 28.81, while the **significance value (Sig.)** was .000, which is lower than the significance level of 0.05, with 199 degrees of freedom. This difference is statistically significant, indicating that the observed difference between the two means reflects a true difference rather than random variation. Accordingly, it can be concluded that the **level of psychological capital among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla is high**.

This finding is consistent with the results reported by **Abbassi Abdelkaddous and Kadi Amna (2023)** and **Wari Hassan (2023)**, both of whom found high levels of psychological capital. However, it differs from the findings of **Mouslemal Amina (2025)**, who reported a moderate level of psychological capital among individuals with diabetes.

This finding may be explained by the fact that the employees possess positive psychological capacities, including **self-efficacy, hope, optimism, and resilience**, which enable them to cope effectively with occupational stress and adapt successfully to professional challenges. The high

level of psychological capital may also be attributed to the nature of work at Sonatrach, which requires self-confidence, responsibility, and the ability to make decisions under various circumstances, thereby fostering employees' positive psychological resources. In addition, a supportive work environment, continuous professional training, and accumulated work experience contribute to strengthening employees' motivation, organizational commitment, and confidence in their ability to achieve professional success and organizational goals. Furthermore, job stability and positive interpersonal relationships within the organization may enhance employees' optimism and psychological resilience, which is reflected in their elevated level of psychological capital.

The high level of psychological capital among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla may also be interpreted in light of the influence of **religious commitment**, which represents an important source of positive psychological resources among this workforce. Religious values foster optimism, hope, patience, perseverance, and the ability to cope confidently with occupational pressures and challenges. Moreover, religious commitment promotes psychological well-being and emotional stability while encouraging diligence, professionalism, and positive work behavior. These factors may have contributed to the high level of psychological capital observed among the employees.

III.2. Presentation, Analysis, Interpretation, and Discussion of the Results of the Second Research Question

The second research question is stated as follows:

What is the level of organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla?

To answer this research question, the **mean** and **standard deviation** of the respondents' scores on the Organizational Virtuousness Scale were calculated. It should be noted that the **theoretical mean** of the scale used in this study is **45**. The results obtained are presented in the following table.

✓ **Theoretical Mean = (Maximum Score + Minimum Score) ÷ 2**

✓ **Theoretical Mean = [(15 × 5) + (15 × 1)] ÷ 2 = 45**

Table (03): Results of the One-Sample t-Test Examining the Significance of the Difference Between the Theoretical Mean and the Sample Mean of the Participants' Scores on the Organizational Virtuousness Scale

Variable	Number of Items	Theoretical Mean	Sample Mean	Standard Deviation	Degrees of Freedom (df)	Calculated t-value	P-value (Sig.)	Significance Level (α)
Organizational Virtuousness	15	45	55.26	7.87	199	17.87	.000	0.05

As shown in Table (03), the sample mean of the participants' responses on the study instrument was higher than the theoretical mean. The theoretical mean of the instrument was calculated to be 45. The difference between the two means was examined using a one-sample t-test, and the results indicated that the difference was in favor of the sample mean. The calculated t-value was 17.87, while the significance value (Sig.) was .000, which is lower than the significance level of 0.05, with 199 degrees of freedom. This difference is statistically significant, indicating that the observed difference between the two means reflects a true difference rather than random variation. Accordingly, it can be concluded that the level of organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla is high.

This finding is consistent with the results of Kooshki and Zeinabadi (2015), who reported that the level of organizational virtuousness in schools was high, as well as with the findings of Niryoukh Shahd Rafiq Sadiq (2024), who found that organizational virtuousness among public school principals in the Directorates of Education in Hebron Governorate was perceived by teachers to be at a high level.

This finding may be explained by the fact that Sonatrach at the Berkine (Berkawi) Basin in Ouargla seeks to promote ethical and organizational values among its employees through adherence to professional rules and regulations governing work within the organization. The company strives to establish a positive organizational climate based on cooperation, mutual respect, and continuous learning, thereby contributing to the professional and ethical development of its workforce. This interpretation is consistent with Niryoukh (2024, p. 21), who stated that organizational virtuousness is associated with organizational actions and structures themselves; therefore, some organizations seek to establish organizational structures that support interpersonal relationships, learning, and employee development, thereby enhancing virtuousness within the organization.

The high level of organizational virtuousness may also be attributed to the provision of a work environment characterized by cooperation, trust, and mutual respect between employees and management, which strengthens employees' sense of organizational belonging and commitment while promoting positive workplace behaviors. Furthermore, continuous training and orientation programs, together with accumulated professional experience, contribute to increasing employees' awareness of the importance of organizational virtuousness and its role in achieving organizational objectives, maintaining organizational stability, and ensuring long-term success.

III.3. Presentation, Analysis, Interpretation, and Discussion of the Results of the First Hypothesis

The first hypothesis is stated as follows:

Organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla can be significantly predicted by the dimensions of psychological capital, namely self-efficacy, resilience, optimism, and hope.

To test this hypothesis, standard multiple linear regression analysis was employed to evaluate the adequacy of the regression model applied in the present study. In this model, organizational virtuousness was treated as the dependent variable, whereas the dimensions of psychological capital (self-efficacy, resilience, optimism, and hope) served as the independent variables.

Table (04): Standard Multiple Linear Regression Analysis Predicting Organizational Virtuousness from the Dimensions of Psychological Capital

Order of Entry of the Independent Variables into the Prediction Equation		B	Standard Error	Standardized Coefficient (β)	T-test	P-value (Sig.)	F-test	P-value (Sig.)	R	R ²	Adjusted R ²
Dependent Variable: Organizational Virtuousness		15.954	3.112	/	5.127	000.	86.45	000.	.800	.639	.632
Independent Variables	Self-efficacy	.269	.149	.080	1.808	.072					
	Hope	.665	.155	.216	4.294	.000					
	Resilience	1.142	.149	.372	7.682	.000					
	Optimism	1.068	.140	.397	7.610	.000					

As shown in Table (04), the self-efficacy dimension of psychological capital was excluded from the regression model based on the results of the standard multiple linear regression analysis because of its weak effect on organizational virtuousness. Statistically, self-efficacy did not have a significant effect on the dependent variable (organizational virtuousness) within the regression model. The standardized regression coefficient was $\beta = 0.269$, with a t-value of 1.808 and a significance level of Sig. = 0.072, which exceeds the significance threshold of 0.05. Therefore, self-efficacy was not a statistically significant predictor.

In contrast, the hope dimension remained in the regression model, as it demonstrated a statistically significant effect on organizational virtuousness. The standardized regression coefficient was $\beta = 0.665$, with a t-value of 4.294 and a significance level of Sig. = 0.000, indicating statistical significance at the 0.01 level.

Similarly, the resilience dimension exerted a statistically significant effect on the dependent variable. The standardized regression coefficient was $\beta = 1.142$, with a t-value of 7.682 and a significance level of Sig. = 0.000, indicating statistical significance at the 0.01 level.

Likewise, the optimism dimension also showed a statistically significant effect on organizational virtuousness. The standardized regression coefficient was $\beta = 1.068$, with a t-value of 7.610 and a significance level of Sig. = 0.000, indicating statistical significance at the 0.01 level.

Furthermore, the results indicate that the correlation coefficient (R) between the dependent variable (organizational virtuousness) and the independent variable (psychological capital) was 0.800, reflecting a strong positive relationship between the two variables. The coefficient of determination (R²) was 0.629, while the adjusted coefficient of determination (Adjusted R²) was 0.623. These findings indicate that the dimensions of psychological capital retained in the model (hope,

resilience, and optimism) explained 62.3% of the variance in organizational virtuousness, representing a substantial and statistically meaningful proportion of the explained variance. The remaining 37.7% of the variance can be attributed to other factors not included in the regression model.

The results presented in Table (04) also show that the F-statistic was 86.45, which is statistically significant at Sig. = 0.000. This indicates that the regression model as a whole is statistically significant. In other words, the independent variables—hope, resilience, and optimism—collectively exert a significant effect on organizational virtuousness. These findings confirm the explanatory power and overall significance of the regression model, indicating that the regression equation provides a good fit to the observed data, as illustrated in the following figure.

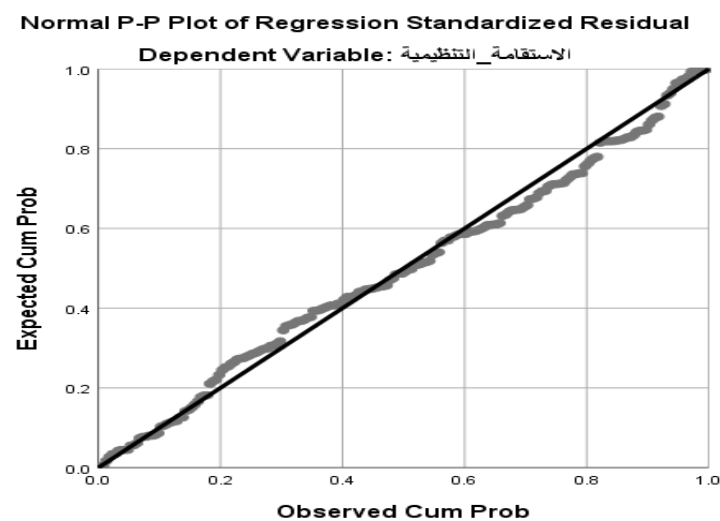


Figure (02): Scatter Plot Demonstrating the Goodness-of-Fit of the Regression Line Between the Dependent and Independent Variables

Based on the results presented in the table, the regression equation can be expressed as follows:

$$Y=15.95 + (0.665)X_1 + (1.142)X_2 + (1.068) X_3$$

Interpretation of the Regression Equation

The regression equation indicates that:

$$\text{Organizational Virtuousness} = 15.95 + (0.665 \times \text{Hope}) + (1.142 \times \text{Resilience}) + (1.068 \times \text{Optimism})$$

- ✓ For every one-unit increase in hope, organizational virtuousness increases by 0.665 units.
- ✓ For every one-unit increase in resilience, organizational virtuousness increases by 1.142 units.
- ✓ For every one-unit increase in optimism, organizational virtuousness increases by 1.068 units.

The regression results indicate that the dimensions of psychological capital—hope, resilience, and optimism—have a positive effect in predicting organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla. These findings suggest that higher levels of psychological capital contribute to strengthening positive organizational behavior and employees' commitment to ethical and organizational values within the organization. Consequently, the results confirm that developing the dimensions of psychological capital among employees can contribute to enhancing the level of organizational virtuousness within the organization.

Among the three dimensions, psychological resilience emerged as the strongest predictor of organizational virtuousness. Resilience enables employees to adapt effectively to occupational

pressures and challenging situations while overcoming crises without compromising their organizational commitment or professional conduct. This explains why its standardized effect was greater than that of the other dimensions. Employees who possess high levels of resilience are better able to adapt to work-related pressures and organizational changes while maintaining their adherence to organizational values and ethical principles, thereby promoting sound organizational behavior and contributing to a stable work environment. Coutu defined resilience as an individual's capacity to remain strong when confronted with significant stress or major change. Likewise, Hassan argued that psychological resilience is a characteristic encompassing behaviors, thoughts, beliefs, and actions that can be learned and developed, enabling individuals to adapt effectively to various life circumstances. This adaptive capacity can therefore be directly associated with organizational virtuousness (Jallab & Al-Taieen, 2015, p. 15).

Optimism ranked second in terms of its influence on organizational virtuousness. This finding may be explained by the fact that optimism enhances employees' positive perceptions of both their work and their organization, increasing their motivation and confidence in achieving favorable outcomes. Consequently, optimism is reflected in positive interactions with colleagues and greater commitment to organizational values. Optimism has been described as the belief that good things will happen and the tendency to maintain a positive outlook on life. Individuals possessing optimistic self-beliefs expect success when confronting challenges, are more willing to accept them, and engage in dealing with them more actively and enthusiastically (Mahia & Rahal, 2024, p. 19).

Hope ranked third among the significant predictors of organizational virtuousness. This result may be attributed to the role of hope in enabling employees to establish clear goals and pursue them with determination, thereby encouraging positive behaviors that are consistent with organizational values and ultimately enhancing organizational virtuousness. According to Luthans (2008, p. 223), hope reflects employees' perseverance in pursuing organizational goals, together with their ability to identify alternative pathways when necessary to achieve those goals. Similarly, Rennick argued that hope instills confidence by enabling individuals to perceive positive outcomes as attainable, thereby strengthening their belief in their ability to make meaningful contributions to their lives. Individuals characterized by hope continue striving toward their goals even when encountering obstacles because they possess effective problem-solving abilities and the capacity to organize their thinking (Al-Ani, 2022, p. 213). Accordingly, employees with higher levels of hope are more committed to organizational values and principles, better equipped to cope with work-related pressures, and more likely to behave ethically and positively within the organization, thereby promoting sound organizational behavior and contributing effectively to the achievement of organizational goals.

III.4. Presentation, Analysis, Interpretation, and Discussion of the Results of the Second Hypothesis

The second hypothesis is stated as follows:

There are significant differences in psychological capital and organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla attributable to length of work experience.

To test this hypothesis, a One-Way Analysis of Variance (One-Way ANOVA) was conducted. The following table presents the results.

Table (05): One-Way ANOVA Results Showing the Significance of Differences in Psychological Capital and Organizational Virtuousness Among the Study Participants According to Length of Work Experience

Variable	Source of Variation	Sum of Squares	df	Mean Square	F-value	Sig.
Psychological Capital	Between Groups	105.565	2	52.782	.819	.443
	Within Groups	9018.141	140	64.415		
	Total	9123.706	142	//		
Organizational Virtuousness	Between Groups	136.661	2	68.330	1.065	.347
	Within Groups	12643.959	197	64.183		
	Total	12780.620	199	//		

For the **Psychological Capital** variable, the results of the **One-Way Analysis of Variance (ANOVA)** indicate that the calculated **F-value** was **0.819**, with a significance level of **Sig. = 0.443**, which is greater than the adopted significance level of **0.05**. Therefore, the research hypothesis is not supported. Accordingly, the alternative hypothesis is rejected, and the null hypothesis is accepted, indicating that **there are no statistically significant differences in psychological capital among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla attributable to length of work experience**.

For the **Organizational Virtuousness** variable, the results of the **One-Way Analysis of Variance (ANOVA)** show that the calculated **F-value** was **1.065**, with a significance level of **Sig. = 0.347**, which is also greater than the adopted significance level of **0.05**. Consequently, the alternative hypothesis is rejected, and the null hypothesis is accepted, indicating that **there are no statistically significant differences in organizational virtuousness among employees of Sonatrach at the Berkine (Berkawi) Basin in Ouargla attributable to length of work experience**.

Interpretation of the Findings for Psychological Capital

This finding may be explained by the fact that **psychological capital** represents a set of positive psychological characteristics and capacities that may be present among individuals regardless of their years of professional experience or organizational tenure. The dimensions of **self-efficacy, hope, optimism, and resilience** are more strongly associated with employees' personal characteristics and a supportive organizational environment than with the length of their work experience.

This result may also be attributed to the similarity of working conditions, professional training, and administrative systems experienced by employees within the organization, resulting in comparable levels of psychological capital regardless of differences in organizational tenure. Furthermore, the organization may be committed to providing a work environment that promotes the development of

positive psychological resources among all employees, thereby reducing differences across experience groups.

This finding differs from that reported by **Bordham Kenza (2018)**, whose study investigating the impact of work stress on positive psychological capital at Saad Dahlab Public Hospital found significant differences in psychological capital attributable to employees' length of work experience.

Interpretation of the Findings for Organizational Virtuosity

This finding may be explained by the fact that **organizational virtuosity and ethical conduct** are fundamental organizational principles that the institution seeks to instill in all employees, irrespective of their years of professional experience or organizational tenure. Employees operate under the same regulations, organizational policies, and shared organizational culture, resulting in similar levels of organizational virtuosity across different experience groups.

Moreover, the organization may place considerable emphasis on reinforcing ethical and organizational values through continuous guidance and strict adherence to professional standards. As a result, employees with both shorter and longer organizational tenure tend to adopt similar organizational behaviors. In addition, the organizational work environment may foster common attitudes toward commitment, integrity, and cooperation, thereby explaining the absence of significant differences associated with length of work experience.

This finding is consistent with the results of **Yazid Hammouda and Ti Ahmed (2024)**, who reported no statistically significant differences in organizational virtuosity attributable to length of service among employees in their study. It is also consistent with the findings of **Niryoukh Shahd Rafiq Sadiq (2024)**, who found no statistically significant differences in organizational virtuosity attributable to years of professional experience.

IV. Conclusion

The present study aimed to investigate the level of psychological capital and organizational virtuosity among the study sample. It also sought to examine the predictive ability of the four dimensions of psychological capital in explaining organizational virtuosity among employees of Sonatrach, Berkine Basin, Ouargla, in addition to identifying differences in both variables according to work seniority. Following the statistical analysis and hypothesis testing, the study yielded the following results:

- The level of psychological capital among employees of Sonatrach, Berkine Basin, Ouargla, was **high**.
- The level of organizational virtuosity among employees of Sonatrach, Berkine Basin, Ouargla, was **high**.
- Organizational virtuosity can be **significantly predicted** by the psychological capital dimensions of **hope, resilience, and optimism** among the study participants.
- There were **no statistically significant differences** in psychological capital among employees of Sonatrach, Berkine Basin, Ouargla, according to **work seniority**.

V. Recommendations and Suggestions

- Promote ethical behavior within the organization by fostering the values of **integrity, transparency, and compliance with professional regulations**, thereby reinforcing a culture of organizational virtuosity.

- Continue providing a work environment based on **respect and cooperation** in order to maintain the high levels of both psychological capital and organizational virtuousness.
- Extend the study to include other organizations and sectors to compare the findings and examine their generalizability.
- Investigate the impact of other demographic variables such as **gender, age, educational level, and job position**.
- Conduct future studies examining the relationship between psychological capital and other variables such as **job satisfaction, organizational commitment, quality of work life, and job performance**.

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