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Research Article

Activating Organizational Memory To Enhance Intellectual Capital: A Case Study Of The National Electricity And Gas Company In El Oued, Algeria

Taibi Abdelatif[1*], Ben Amor Mohammed Bachir[2], Fateh Serdouk[3]

[1*]Finance Laboratory, Market Finance and Corporate Finance. University of Kasdi Merabah Ouargla, Algeria, abdelatifta1984@gmail.com
[2]University of El Oued, Algeria, Laboratory of economic growth and développement in Arab countries, benamor-medbachir@univ-eloued.dz
[3]University of El Oued, Algeria, serdouk-fateh@univ-eloued.dz

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ABSTRACT

This study aims to examine the relationship between organizational memory and intellectual capital within the National Electricity and Gas Company in El Oued, Algeria. The research investigates the impact of adopting an organizational memory philosophy on the development of intellectual capital. The study employs a dual-method approach: a documentary (descriptive) method, which reviews relevant literature to establish the theoretical framework for organizational memory, and a survey (analytical) method, which uses a questionnaire as the primary tool for data collection. The validity and reliability of the sample, comprising 40 participants, were confirmed, achieving a high reliability score of 95%. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS 21) and various descriptive statistical tools. The findings indicate that the company exhibits a moderate level of organizational memory and intellectual capital. Moreover, a statistically significant relationship exists between organizational memory and intellectual capital within the company at a significance level of 0.05, based on the dimensions and types outlined in the study model.

Keywords: Organizational memory, types of organizational memory, intellectual capital, SPSS 21, National Electricity and Gas Company, El Oued, Algeria.

Introduction:

In recent decades, the world has witnessed tremendous developments and transformations across various fields. One of the most significant changes is the shift towards a knowledge-based economy, where knowledge has become a key resource in the production processes, surpassing the importance of traditional material resources. Knowledge is now a fundamental driver in wealth creation and global prosperity. This shift in the global economy has affected both the inputs and outputs of organizations, necessitating corresponding advancements in management and intellectual capital. Given the vast influx of information and knowledge into organizations, organizational memory has emerged as a crucial component, enhancing organizational effectiveness by optimizing knowledge management practices, which, in turn, significantly contribute to intellectual capital.
This paper is structured into three main sections:

1. **Theoretical Literature**: An overview of organizational memory and its classifications.
2. **Intellectual Capital**: The concept, characteristics, and importance of intellectual capital.
3. **Empirical Study**: An applied analysis of the National Electricity and Gas Company in El Oued, Algeria.

Based on this structure, the following main research question is proposed:
Research Question: What is the impact of organizational memory on enhancing intellectual capital within the National Electricity and Gas Company in El Oued?
From this primary question, the following sub-questions arise:

Sub-Questions:

1. Is there a statistically significant impact of administrative organizational memory on the enhancement of intellectual capital in the company at a significance level of α≤0.05\alpha \leq 0.05α≤0.05?
2. Is there a statistically significant impact of technical organizational memory on the enhancement of intellectual capital in the company at a significance level of α≤0.05\alpha \leq 0.05α≤0.05?
3. Is there a statistically significant impact of cultural organizational memory on the enhancement of intellectual capital in the company at a significance level of α≤0.05\alpha \leq 0.05α≤0.05?

Research Hypotheses: The study begins with a null hypothesis stating that there is no statistically significant impact of organizational memory on enhancing intellectual capital within the National Electricity and Gas Company in El Oued. This is further divided into three sub-hypotheses:

- There is no statistically significant impact of administrative organizational memory on intellectual capital at a significance level of α≤0.05\alpha \leq 0.05α≤0.05.
- There is no statistically significant impact of technical organizational memory on intellectual capital at a significance level of α≤0.05\alpha \leq 0.05α≤0.05.
- There is no statistically significant impact of cultural organizational memory on intellectual capital at a significance level of α≤0.05\alpha \leq 0.05α≤0.05.

Study Objectives: This study aims to explore the role of organizational memory in developing the intellectual capital of the National Electricity and Gas Company in El Oued, and to assess its impact by achieving the following objectives:

- To understand the critical role of knowledge management and its relationship with organizational memory within the company.
- To describe the construction and design of organizational memory in the National Electricity and Gas Company.
- To examine the fundamentals and current status of building organizational memory in the company.

Study Significance: The importance of this study lies in its focus on the emerging topic of organizational memory, which has garnered the interest of scholars and researchers in various fields, including management studies. Organizational memory documents the experiences and knowledge of the organization in different forms, serving as a primary resource for management and helping to structure information efficiently. The significance is highlighted in the following aspects:

1. The study provides a deeper understanding of organizational memory and its various dimensions, potentially contributing new insights to academic research in management and, specifically, in the area of organizational memory.
2. It underscores the essential role of knowledge management systems in enhancing the competitive edge of organizations by building organizational memory.
3. It highlights the role of organizational memory in managing the organization's intellectual resources, avoiding organizational inefficiency, and preventing knowledge loss.

Research Model: A conceptual model is proposed based on the researchers' perspective and is illustrated in Figure 1.

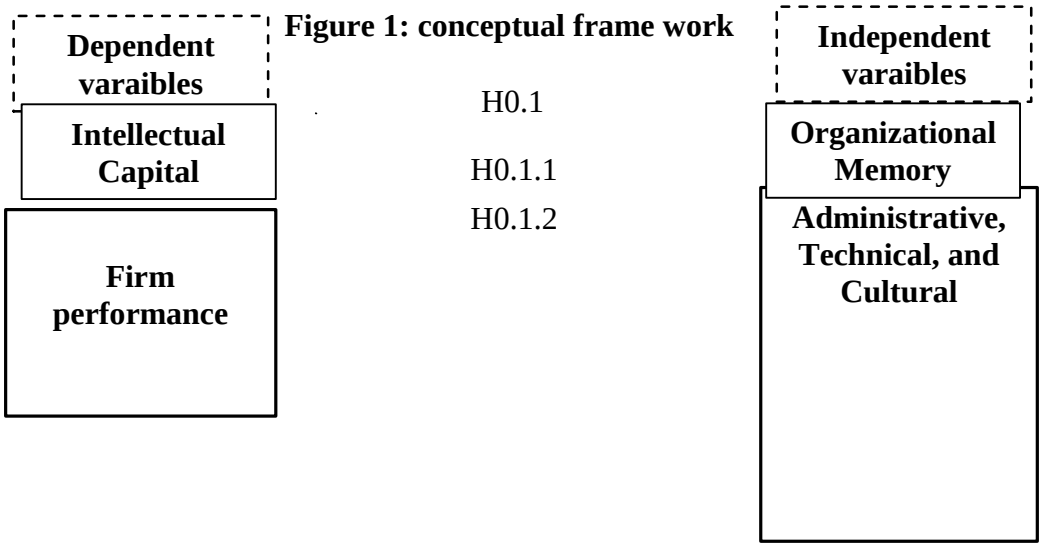


Figure 1: conceptual frame work

Section I:Literature review

1. First Study: "The Impact of Organizational Memory on Organizational Performance: A Case Study of Studebaker Corporation"

This study builds upon the research conducted by Li et al. (2004) across 164 Chinese industrial firms. It aimed to explore various dimensions of organizational memory, including management, culture, technology, and market orientation, and assess their impact on administrative, cultural, technical, and marketing performance. The findings revealed a strong relationship between robust organizational memory and positive organizational performance.

Siegel (2006) employed a case study approach with Studebaker Corporation, highlighting the need for caution when linking organizational memory to organizational performance. The study noted limitations in leveraging organizational memory for performance enhancement and critiqued Li et al. (2004) for overlooking the significant role of managers and individuals in interpreting organizational memory.

Additionally, Siegel (2006) emphasized that organizational memory provides a general framework for understanding an organization's culture. The researcher used a qualitative approach, unlike the current study, which integrates both qualitative and quantitative methods to examine the role of knowledge management in strengthening and developing organizational memory.

2. Second Study: "The Role of Intellectual Capital Management in Building a Learning Organization: A Case Study of the Scientific and Technical Research Center for Arid Regions (CRSTRA)"

This study focuses on the concepts of intellectual capital management and the learning organization as modern frameworks. It theoretically examines the supportive role of each aspect of intellectual capital management—human capital, structural capital, and customer capital—in building a learning organization. The study also aims to identify the fundamental requirements and pillars necessary for shaping the characteristics of a learning organization and explores the extent of intellectual capital management's contribution to this process.

3. Third Study: "For an Operational Definition and Modeling of Organizational Memory"

This study seeks to provide a practical definition of organizational memory, distinguishing itself from previous works by scholars such as Levitt and March (1988), Stein (1989), Walsh and Ungson (1991), and Koenig (1995), who offered comprehensive definitions. These scholars generally view organizational memory as the collective knowledge stored in individuals' memories, documents, archives, rules, databases, culture, and organizational structure.

The researchers benefited from this study by reviewing the main definitions presented and adopting them to establish a practical definition of organizational memory.

Theoretical Framework on Organizational Memory and Its Classifications

This section is divided into several components:

1. Operational Definition of Study Terms: 1.1 Theoretical Concepts of Organizational Memory:

Organizational memory has garnered significant attention from researchers across various disciplines, including psychology, sociology, communication theory, and information systems. In an exploratory study, Stein identified three main reasons for focusing on the concept of organizational memory:

1. Organizational memory reflects the competitive dynamics and life cycle of the organization.
2. It is an interdisciplinary field derived from multiple management theories.
3. It forms a crucial foundation for managerial practices.

Researcher Yean Yreo Per further emphasized that organizational memory is essential for:

- Avoiding costly incidents and solving problems efficiently.
- Enabling continuous learning from the experiences of team members during projects.

Despite ongoing research, organizational memory remains a relatively new concept, with many researchers still striving to clarify its meaning. Hulrevson and Ackerman (2003) noted that even after a decade of study, the term "organizational memory" remains ambiguous and contradictory, as confirmed by Spender, who highlighted confusion in the literature regarding the concept's origin.

1.2 Types of Organizational Memory: Various scholars have proposed different classifications of organizational memory. Ashcraft suggested three key components:

- **Episodic Memory**: Knowledge related to events experienced by individuals.
- **Semantic Memory**: Technical knowledge.
- **Procedural Memory**: Acquired skills.

Biroc further classified organizational memory into three types:
- **Declarative Memory**: Contains explicit, accumulated knowledge related to facts, objects, and events.
- **Procedural Memory**: Implicit knowledge on how tasks are performed.
- **Wisdom Memory**: Derived from the personal experiences of individuals.

Classifications of Organizational Memory
It is widely acknowledged that organizational memory is not limited to the skills and knowledge accumulated by employees. Instead, it encompasses administrative memory, linked to past and present organizational structures (e.g., administrative human resources), as well as project memory, which includes capitalized lessons and experiences from projects. Tourtier identified four main types of organizational memory:
- **Professional Memory**: Includes documents, tools, and methods specific to a particular profession.
- **Corporate Memory**: Relates to the organization's activities, products, and key stakeholders (e.g., clients, suppliers).
- **Individual Memory**: Refers to the skills and competencies of individual employees.
- **Project Memory**: Encompasses historical activities and productivity insights.

2.1 Technical Organizational Memory
Technical organizational memory comprises knowledge related to professional expertise, technical skills, and related experiences that enhance systematic operations, product development, and production control. This memory includes the use of information technology (e.g., internet systems), equipment, reengineering processes, and total quality management. It impacts product quality and cost efficiency, positioning the organization as a leader in its industry through improved productivity.

2.2 Administrative Organizational Memory
Administrative organizational memory includes knowledge related to managing organizational tasks and processes. It can be categorized into:
- **Management Style**: Examples include knowledge related to knowledge management, total quality management, human resource management, strategic management, and crisis management.
- **Organizational Structure**: Represents knowledge stored in the organizational hierarchy, defining relationships, responsibilities, and operational workflows.

2.3 Cultural Organizational Memory
Cultural organizational memory is the intellectual wealth accumulated over the organization's development. It encompasses the organization's history, shared values, informal structures, norms, and traditions. Shein described it as embodying the essence of the organization's memory, reflecting both its past and present.

Section II: Understanding Intellectual Capital (Concept, Characteristics, Components, Divisions, and Importance)
This section covers several key aspects of intellectual capital as outlined by researchers:

1. Concept of Intellectual Capital
The concept of intellectual capital gained prominence in the 1990s, when it began to be viewed as a true indicator of an organization's competitive capabilities and success. Previously, natural resources were seen as the primary source of wealth for companies. However, the focus has shifted towards the cognitive abilities of firms, which cannot be easily replicated by competitors. Interest in intellectual capital within organizations began in the 1980s, when managers, academics, and consultants worldwide acknowledged that intangible assets, or intellectual capital, are key determinants of organizational profitability.
Intellectual capital has various synonymous terms such as intangible assets, non-material assets, knowledge capital, intellectual assets, and knowledge resources. Below are some of the prominent definitions:
- **Stewart** defines intellectual capital as "the knowledge, information, intellectual property, and expertise that can be employed to create wealth and enhance an organization's competitive capabilities."
- **Al-Anzi** describes intellectual capital as "complex knowledge that can be effectively utilized for the benefit of the organization, which exists implicitly within individuals and cannot be touched, seen, or easily measured."
- **Edvinsson** views intellectual capital as "intangible assets lacking a physical presence, with uncertain future benefits, making them difficult to measure and generalize. However, these assets are among the primary determinants of an organization's competitive strength."

2. Characteristics and Importance of Intellectual Capital
Researchers highlight the key characteristics and significance of intellectual capital within organizations, showing how it contributes to value creation. The main points are summarized as follows:

2.1 Characteristics of Intellectual Capital
- It is intangible and challenging to measure.

- It is dynamic and evolves through continuous investment.
- It is embodied in highly skilled individuals.
- It significantly influences the performance of organizations.

These characteristics underscore the value of human resources, as knowledge leads to improved processes at all organizational levels, enhances production methods, and fosters sustainable excellence.

2.2 Importance of Intellectual Capital The business world is undergoing rapid and dynamic changes, characterized by increasing competition, technological advancements, and evolving markets. These changes, coupled with shifting customer preferences, have accelerated the transition towards a knowledge-based economy, where knowledge and intellectual assets are key drivers of strategic advantage. Intellectual capital, therefore, plays a crucial role in enhancing the value of an organization. According to Stewart, intellectual capital helps reduce costs and optimize the use of tangible resources within the organization, making it a vital competitive tool.

3. Components of Intellectual Capital

Identifying the components of intellectual capital is essential for its measurement and evaluation, which in turn determines the true value of modern businesses. According to researcher **Attan**, intellectual capital comprises four main elements that interact to create value:

3.1 Human Capital: Refers to the company's human resources, encompassing the knowledge that can be converted into value. This includes employees' skills, expertise, and organizational knowledge.

3.2 Structural Capital: Represents the infrastructure and organizational systems, including policies, processes, and procedures that support value creation.

3.3 Scientific Assets: Part of structural capital, these assets facilitate business processes, such as operational systems and distribution networks.

3.4 Intellectual Assets: These are the company's intellectual properties, which require legal protection. Kotel further categorizes intellectual capital assets into:
- Internal structural assets.
- External structural assets.
- Human capital assets.

The components of intellectual capital are illustrated in Table 1 below:

Type of Intellectual Capital	Components
External Structural Assets	Alliances, customer relationships, supplier relationships, investor relations, brand reputation
Human Capital Assets	Abilities, knowledge, skills, problem-solving capabilities of employees
Internal Structural Assets	Systems, processes, information technology, organizational models

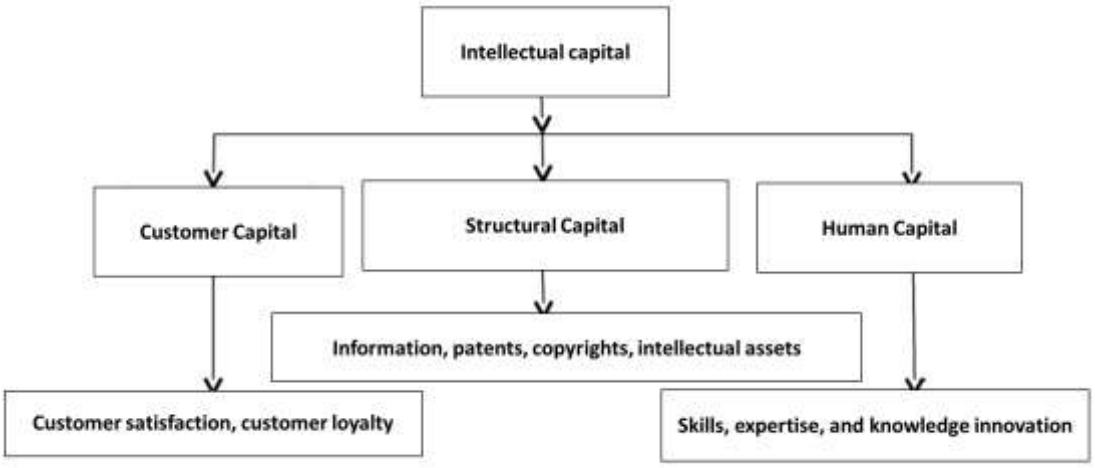
Source: Saad Ali Al-Ezz, Ahmed Yahya Saleh, previously cited reference, p. 176.

4. Divisions of Intellectual Capital

According to **Stewart**, intellectual capital is divided into three main categories:
4.1 Human Capital: Represents the knowledge held by individuals within the organization, including skills, expertise, and innovation.

4.2 Structural Capital: Encompasses the organizational knowledge embedded in structures, systems, and procedures.

4.3 Customer Capital: Reflects the value derived from satisfied, loyal customers, trusted suppliers, and other external sources.
The divisions of intellectual capital are illustrated in Figure 2 according to Stewart's model.



Source: Performance Strategies in Labor Organizations," Athraa Publishing and Distribution, Amman, Jordan, 2008, p. 133. Author: Hussein Kahlani Husseini.

Section III: Applied Study at the National Electricity and Gas Company, El Oued Agency, Algeria
In this section, the researchers build on the theoretical framework and apply it to a field study conducted at the National Electricity and Gas Company (Sonelgaz) in the El Oued region of Algeria. The study is structured around key aspects covering all dimensions of the topic, including:

1. Establishment of the Parent Company (Electricity and Gas) and the Formation of the El Oued Agency

1.1 Establishment of the Parent Company (Sonelgaz), Algeria The National Electricity and Gas Company (Sonelgaz) was established on July 28, 1969, under Decree No. 69/59, as recorded in the official gazette. Sonelgaz is a major state-owned enterprise, historically known as "EGA" (Electricité et Gaz d'Algérie) during the colonial era, with roots dating back to 1947. It was nationalized after independence. Initially, the company operated through four regional directorates (Algiers, Oran, Constantine, and Ouargla). In 1975, the structure was modified into distribution zones covering various provinces. By 1991, the company's name was changed to a public industrial and commercial enterprise. Subsequently, on June 1, 2002, the company transitioned into a joint-stock company due to the state's inability to cover operational costs. The current structure includes:

- **Production Directorate** (Electricity Production)
- **Transmission Directorate** (Electricity and Gas Transmission)
- **Distribution Directorate** (Electricity and Gas Distribution)

1.2 Establishment of the El Oued Distribution Center Previously, the El Oued region received electricity through the distribution center in Biskra. Due to population growth, a dedicated distribution center for El Oued was established in the late 1980s. In 1992, it was officially recognized as a distribution center for electricity and gas, now operating as a district with three sub-agencies: El Oued, El M'ghair, and Debila. It serves multiple functions, including:

- **Customer Services** (e.g., billing)
- **Electricity Services** (e.g., electrical network management)

1.3 Responsibilities of the El Oued Distribution Center The center manages subscribers (electricity and gas), oversees electrical and gas installations, develops energy infrastructure, represents the company at the provincial level, and liaises with local authorities.

2. Field Study

2.1 Research Methodology This study investigates the role of organizational memory in enhancing intellectual capital at the National Electricity and Gas Company in El Oued, as perceived by employees, including executives, department heads, and decision-makers.

2.2 Study Population The study population consists of all employees at the National Electricity and Gas Company in El Oued. A random sample of 50 questionnaires was distributed, with 40 valid responses returned, achieving an 80% response rate.

2.3 Study Boundaries To ensure objectivity and facilitate logical conclusions, the study is framed within the following boundaries:

- **Theoretical Scope**: Although the added value of the research lies in its empirical aspect, understanding related knowledge management concepts is essential for addressing the research problem, formulating hypotheses, and reaching sound conclusions.
- **Practical Scope**: This study is classified as applied research, aiming to examine real-world scenarios through field surveys and analysis, focusing on potential value additions.
- **Conceptual Scope**: The study clarifies key concepts such as administrative, technical, and cultural organizational memory, along with intellectual capital.
- **Geographical Scope**: The study focuses on the implementation of organizational memory in enhancing intellectual capital at the El Oued Agency of the National Electricity and Gas Company.

3. Research Tools

The primary tool for data collection was a structured questionnaire, developed based on previous studies. The questionnaire consists of four parts:

- **Part 1**: Information on Administrative Organizational Memory (3 items)
- **Part 2**: Information on Technical Organizational Memory (3 items)
- **Part 3**: Information on Cultural Organizational Memory (3 items)
- **Part 4**: Information on Intellectual Capital (3 items)

A five-point Likert scale was used for responses:

Rating	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Score	1	2	3	4	5

Source: Uma Sekaran, Research Methods for Business: A Skill-Building Approach, translated by Ismail Ali Bassiouni, Dar Al-Mareekh Publishing, Riyadh, Saudi Arabia, 2006, p. 284.

2.1 Validity and Reliability of the Study Instrument

The face validity of the study tools was confirmed by presenting them to a panel of experts and specialists in the fields of management and information systems for their feedback, observations, and suggestions. Based on their input, certain items were revised or removed to ensure the study instrument aligns with the intended research focus and meets the necessary standards.

Table 3: Internal Consistency Reliability (Cronbach's Alpha) for Independent and Dependent Variables

Variable	Cronbach's Alpha
Independent Variable: Organizational Memory	0.95
- Administrative Memory	0.81
- Technical Memory	0.88
- Cultural Memory	0.84
Dependent Variable: Intellectual Capital	0.902

Source: Prepared by the researchers using SPSS (Version 21).

The Cronbach's Alpha test was utilized to assess the reliability and internal consistency of the study instrument. The overall Cronbach's Alpha coefficient for the questionnaire was 0.95, indicating a high level of reliability. This suggests that the study tool is robust and capable of producing consistent results, meeting the objectives of the research.

2.2 Normality Test

The Kolmogorov-Smirnov (K-S) test was employed to assess whether the data follow a normal distribution. The significance value (Sig) for each variable exceeded 0.05, indicating that the data follow a normal distribution. The results are presented in Table 4.

Table 4: Normality Test Results for the Sample Data

Variable	Sig Value
Administrative Organizational Memory	0.111
Technical Organizational Memory	0.310
Cultural Organizational Memory	0.205
Intellectual Capital	0.247

Source: Prepared by the researchers using SPSS (Version 21).

From Table 4, it is evident that the sample data from the National Electricity and Gas Company in El Oued follow a normal distribution, as indicated by the Sig values. This supports the assumption of normality required for further statistical analysis.

3. Statistical Analysis

To answer the research questions and test the hypotheses, the Statistical Package for the Social Sciences (SPSS) was used. The following methods were applied:

- **Descriptive Statistics**: Means and standard deviations were calculated to address the research questions.
- **Regression Analysis**: Both multiple and simple regression tests were conducted to test the study hypotheses.

3.1 Characteristics of the Study Sample

The frequencies and percentages were used to describe the sample responses based on demographic and occupational characteristics:

3.1.1 Gender Distribution The gender distribution of the study sample is presented in Table 5.

Table 5: Gender Distribution of the Study Sample

Gender	Frequency	Percentage
Male	25	62.5%
Female	15	37.5%
Total	40	100%

Source: Prepared by the researchers using SPSS (Version 21).

As shown in Table 5, the majority of the sample consists of male participants (62.5%), while female participants make up 37.5%.

3.1.2 Age Distribution The age distribution of the study sample is detailed in Table 6.

Table 6: Age Distribution of the Study Sample

Age Group	Frequency	Percentage
Under 30 years	18	45%
30 to 40 years	10	25%
41 to 50 years	7	17.5%
Over 50 years	5	12.5%
Total	40	100%

Source: Prepared by the researchers using SPSS (Version 21).

The data in Table 6 indicate that 45% of the sample is under 30 years old, while 25% are between 30 and 40 years. Participants aged 41 to 50 years represent 17.5%, and those over 50 years make up 12.5%.

3.1.3 Educational Qualification The educational levels of the study sample are presented in Table 7.

Table 7: Educational Qualification of the Study Sample

Qualification	Frequency	Percentage
Master's Degree in Electricity (LMD)	6	15%
State Engineer in Electronics	2	5%
Bachelor's Degree in Electricity (LMD)	25	62.5%
Advanced Technician in Electricity and Gas	7	17.5%
Total	40	100%

Source: Prepared by the researchers using SPSS (Version 21).

The majority of the sample (62.5%) holds a Bachelor's Degree in Electricity (LMD), followed by 17.5% who have an Advanced Technician qualification in Electricity and Gas.

3.1.4 Professional Experience The distribution of the sample based on years of professional experience is shown in Table 8.

Table 8: Professional Experience of the Study Sample

Years of Experience	Frequency	Percentage
Less than 5 years	10	25%
6 to 10 years	7	17.5%
11 to 15 years	11	27.5%
16 to 32 years	12	30%
Total	40	100%

Source: Prepared by the researchers using SPSS (Version 21).

Table 8 shows that 30% of the sample has 16 to 32 years of experience, making it the largest group. Participants with less than 5 years of experience account for 25%, while those with 11 to 15 years represent 27.5%.
Overall, the analysis indicates that the sample consists of experienced employees with relevant educational backgrounds, making it suitable for evaluating the impact of organizational memory on intellectual capital at the National Electricity and Gas Company in El Oued, Algeria.

3. Presentation of Study Results

The mean (average) and standard deviation were calculated to describe the responses of the sample towards the study items, as detailed below:

1. First Dimension: Technical Organizational Memory

The researchers identified the dimension of technical organizational memory and presented the mean and standard deviation of the sample responses, as shown in Table 9.

Table 9: Mean and Standard Deviation for Technical Organizational Memory

Item	Mean	Standard Deviation	Rank
The implemented technologies meet the employees' needs (e.g., computer systems, internet, email, database).	4.2533	0.6878	1
Work procedures rely on human resources systems.	4.0503	0.73079	2
Knowledge is exchanged among employees.	3.9800	0.90707	3
Overall Mean	4.10	0.78	—

Source: Prepared by the researchers using SPSS (Version 21).

The results in Table 9 indicate positive trends in the sample responses, as the mean values are higher than the scale's midpoint. The first item had the highest mean (4.2533), indicating strong agreement that the implemented technologies meet the employees' needs. The second item had a mean of 4.0503, showing reliance on human resources systems in work procedures. The third item, with a mean of 3.9800, suggests relatively lower but still positive knowledge exchange among employees. The overall mean of 4.10 reflects a high level of implementation of technical organizational memory.

2. Second Dimension: Administrative Organizational Memory

This dimension examines the administrative memory of the sample, based on the mean and standard deviation, as presented in Table 10.

Table 10: Mean and Standard Deviation for Administrative Organizational Memory

Item	Mean	Standard Deviation	Rank
There are competent staff capable of performing tasks efficiently.	3.7667	0.85465	1
The current organizational structure facilitates effective knowledge sharing.	3.3267	0.93763	2
The existing systems and instructions support and encourage employees to present ideas for work improvement.	3.3000	1.08529	3
Overall Mean	3.47	0.96	—

Source: Prepared by the researchers using SPSS (Version 21).

Table 10 shows that the sample responses are generally positive. The first item received the highest mean (3.7667), indicating the presence of competent staff. The second item had a mean of 3.3267, suggesting effective knowledge sharing facilitated by the organizational structure. The third item had the lowest mean (3.3000),

indicating moderate support for employees to propose ideas. The overall mean of 3.47 indicates a high level of implementation of administrative organizational memory.

3. Third Dimension: Cultural Organizational Memory

This dimension explores the cultural behaviors of the sample, as influenced by the organization's culture. The results are presented in Table 11.

Table 11: Mean and Standard Deviation for Cultural Organizational Memory

Item	Mean	Standard Deviation	Rank
There is effective communication among employees.	3.586	0.88376	2
Employee complaints are addressed and followed up on.	3.3267	1.12026	3
Employees adhere to behaviors stemming from the organization's values and culture.	3.755	0.85087	1
Overall Mean	3.56	0.96	—

Source: Prepared by the researchers using SPSS (Version 21).

The results in Table 11 show positive trends in the responses. The third item had the highest mean (3.755), indicating strong adherence to the organization's cultural values. The second item had the lowest mean (3.3267), suggesting moderate follow-up on employee complaints. The overall mean of 3.56 indicates a high level of implementation of cultural organizational memory.

4. Analysis of the Dependent Variable: Intellectual Capital

The researchers analyzed the responses related to the dependent variable, intellectual capital, using mean and standard deviation, as presented in Table 12.

Table 12: Mean and Standard Deviation for Intellectual Capital

Item	Mean	Standard Deviation	Rank
Retaining employees with high skills and expertise.	3.913	0.6945	2
The program continuously updates information systems and databases.	4.006	0.79001	1
The program ensures equality when providing services to beneficiaries.	3.7200	0.89832	3
Overall Mean	3.88	0.80	—

Source: Prepared by the researchers using SPSS (Version 21).

The data in Table 12 reveal positive trends. The second item had the highest mean (4.006), indicating continuous updates to information systems. The first item, with a mean of 3.913, shows strong retention of skilled employees. The third item had the lowest mean (3.7200), indicating moderate focus on equality in service delivery. The overall mean of 3.88 reflects a high level of intellectual capital implementation.

5. Hypothesis Testing

Main Hypothesis:

- **H0**: There is no statistically significant relationship between organizational memory and intellectual capital at a 0.05 significance level.
- **H1**: There is a statistically significant relationship between organizational memory and intellectual capital at a 0.05 significance level.

Table 13: Main Hypothesis Test Results

Calculated F	Tabulated F	Sig	Null Hypothesis Result	Correlation (R)	Determination Coefficient (R^2)
1.608	1.25	0.000	Reject H0	0.715	0.332

Source: Prepared by the researchers using SPSS (Version 21).

The calculated F value (1.608) exceeds the tabulated F value (1.25), leading to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (H1). The strong correlation ($R = 0.715$) indicates a significant relationship between organizational memory and intellectual capital, with the independent variables explaining 33.2% of the variation in the dependent variable ($R^2 = 0.332$).

Sub-Hypothesis 1:

- **H0**: There is no statistically significant relationship between technical organizational memory and intellectual capital at a 0.05 significance level.
- **H1**: There is a statistically significant relationship between technical organizational memory and intellectual capital at a 0.05 significance level.

Table 14: Sub-Hypothesis 1 Test Results

Calculated T	Tabulated T	Sig	Null Hypothesis Result	Correlation (R)	Determination Coefficient (R^2)	Constant (b_0)	Slope (b_1)
8.655	3.487	0.000	Reject H0	0.77	0.326	1.632	0.572

Source: Prepared by the researchers using SPSS (Version 21).

The calculated T value (8.655) is greater than the tabulated T value (3.487), leading to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (H1). The strong correlation (R = 0.77) and determination coefficient (R^2 = 0.326) indicate a significant impact of technical organizational memory on intellectual capital. The regression equation suggests that a one-unit increase in technical organizational memory results in a 0.572-unit increase in intellectual capital.

Based on the results shown in Table 14, the calculated T value (8.655) is greater than the tabulated T value (3.487). This indicates the acceptance of the alternative hypothesis (H1) and the rejection of the null hypothesis (H0). The strong correlation (R = 0.77) between the variables suggests a statistically significant relationship. The independent variables explain 32.6% of the variance in the dependent variable, as indicated by the coefficient of determination (R^2 = 0.326). This confirms a statistically significant relationship between technical organizational memory and intellectual capital at a 0.05 significance level.

1.2 Second Sub-Hypothesis

- **H0**: There is no statistically significant relationship between administrative organizational memory and intellectual capital at a 0.05 significance level.
- **H1**: There is a statistically significant relationship between administrative organizational memory and intellectual capital at a 0.05 significance level.

Table 15: Results of the Second Sub-Hypothesis Test

Calculated T	Tabulated T	Sig	Null Hypothesis Result	Correlation (R)	Determination Coefficient (R^2)	Constant (b_0)	Slope (b_1)
13.698	2.532	0.000	Reject H0	0.752	0.302	2.035	0.543

Source: Prepared by the researchers using SPSS (Version 21).

The results in Table 15 show that the calculated T value (13.698) is higher than the tabulated T value (2.532). This supports the acceptance of the alternative hypothesis (H1) and the rejection of the null hypothesis (H0). The strong correlation (R = 0.752) and the coefficient of determination (R^2 = 0.302) indicate a statistically significant relationship between administrative organizational memory and intellectual capital at a 0.05 significance level.

1.3 Third Sub-Hypothesis

- **H0**: There is no statistically significant relationship between cultural organizational memory and intellectual capital at a 0.05 significance level.
- **H1**: There is a statistically significant relationship between cultural organizational memory and intellectual capital at a 0.05 significance level.

Table 16: Results of the Third Sub-Hypothesis Test

Calculated T	Tabulated T	Sig	Null Hypothesis Result	Correlation (R)	Determination Coefficient (R^2)	Constant (b_0)	Slope (b_1)
12.477	1.9759	0.000	Reject H0	0.777	0.35	1.562	0.652

Source: Prepared by the researchers using SPSS (Version 21).

As shown in Table 16, the calculated T value (12.477) exceeds the tabulated T value (1.9759). This indicates the acceptance of the alternative hypothesis (H1) and the rejection of the null hypothesis (H0). The strong correlation (R = 0.777) and a coefficient of determination (R^2 = 0.35) confirm a statistically significant relationship between cultural organizational memory and intellectual capital at a 0.05 significance level.

Conclusion

Knowledge is one of the most valuable assets an organization possesses, and organizational memory represents a collection of these assets. Therefore, organizational memory is closely linked to intellectual capital, as it embodies practices that organizations aim to implement to achieve their goals. This study highlights the importance of organizational memory as a cornerstone of knowledge management, despite arguments suggesting its limited effectiveness in preventing organizational dysfunction.

Relying solely on a "memory-less organization" model is a risky strategy. Organizations should recognize the functional significance of organizational memory and find ways to transform it from an inactive asset into a resource that positively influences intellectual capital. The effective role of organizational memory lies in its contribution to strategic decision-making and efficient future management, supported by the available knowledge within its repositories.

Research Findings and Recommendations

Research Findings:

- Organizational memory constitutes a collection of an organization's assets.
- Intellectual capital is dynamic, interacting with and influenced by the various types of organizational memory.
- Employees of the National Electricity and Gas Company in El Oued, Algeria, exhibit a moderate level of organizational memory and intellectual capital.
- Different types of organizational memory (technical, administrative, and cultural) enhance intellectual capital, leading to improved performance of the company.
- The study sample followed a normal distribution, as indicated by the results in Table 4.
- The Cronbach's Alpha reliability test yielded a high coefficient of 95%, confirming the strong reliability of the study instrument.
- There is a statistically significant relationship between organizational memory and intellectual capital in the National Electricity and Gas Company in El Oued at a 0.05 significance level.
- Strong correlations were found between the types of organizational memory (technical R = 0.77, administrative R = 0.752, and cultural R = 0.777) and intellectual capital in the company.
- The main hypothesis and the three sub-hypotheses were confirmed, leading to the acceptance of the alternative hypothesis (H1) and rejection of the null hypothesis (H0), as detailed in Tables 13, 14, 15, and 16.

Recommendations:

- Integrate these essential systems into the organizational programs of the National Electricity and Gas Company in El Oued, Algeria.
- Provide specialized training for the company's employees in this field.
- Effective management of different types of organizational memory will contribute to increasing the intellectual capital of the company.
- Enhancing intellectual capital will boost the competitive advantage of the National Electricity and Gas Company among other agencies across the country.
- Conduct comparative studies with similar organizations in neighboring countries (North Africa), particularly the parent electricity and gas company of Algeria.
- Acquire professional, technical, and administrative expertise from successful organizations in North African countries.

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