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"The Role of Corporate Knowledge Strategy in Strengthening Competitiveness: A Case Study of Two Energy Companies, Sonelgaz and Naftal in Tlemcen"

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Abstract:
This study aims to demonstrate how a corporate knowledge strategy contributes to enhancing competitiveness in companies, particularly in light of the information and technology revolution. With the very dynamic nature of today's business environment, corporations are looking to cope with new innovations on a permanent basis. One of the key ways of doing this is through encouraging human resources to embrace continuous learning, knowledge accumulation, and effective management of that knowledge. The researcher utilized the application of a questionnaire and interpreted the findings with the aid of SPSS software. The study established numerous important findings, the most notable being a high correlation between innovation and knowledge management. Among the suggested recommendations, it stresses placing emphasis on knowledge and innovation as the major enablers for ensuring competitiveness and success, which are necessary to promote improvement and organizational growth.
Keywords: corporate knowledge strategy, innovation, information, competitiveness, success.
JEL Classification: O32, M10, D83

1. Introduction:

Continuous developments in all areas of companies—particularly with the emergence of globalization, the revolution in information and communication technologies, and the intensification of competition—have compelled organizations to adapt and innovate continuously. In the interests of survival, continuity and growth, institutions strive to increase innovation to reach high levels that allow them to lead. This trend has led to relying on high human knowledge in the organization, as well as the development of the human resources function, as it works on management and knowledge in order to improve innovation and the quality of organization's services and products..

Research Problem: In an era of increasing global competition and rapid technological changes, how can a corporate knowledge strategy enhance the competitiveness of companies in the Algerian energy sector, specifically Sonelgaz and Naftal?

1.1. Main Hypothesis:

The implementation of a corporate knowledge strategy has a significant and positive impact on the competitiveness of companies in the Algerian energy sector.

1.2.Research Aims:

- To define the concept and components of corporate knowledge strategy.
- To analyze the relationship between knowledge strategy and competitiveness.
- To measure the effectiveness of knowledge strategy in enhancing the competitive advantage of Sonelgaz and Naftal.

–**1.3. Study Approach**: This study adopts a descriptive-analytical approach. The descriptive part aims to clarify the theoretical concepts related to corporate knowledge strategy and competitiveness, while the analytical part focuses on interpreting the data collected from the field (Sonelgaz and Naftal) using statistical tools, to understand the relationship between knowledge strategy practices and competitive performance within the energy sector.

2. Literature review:

2.1. Knowledge

2.1.1. The concept of knowledge

The word "knowledge" is derived from the verb know, and knowledge of a thing is its awareness of one of the senses.

Where it can be considered as: "a set of skills and capabilities that people use to solve a problem. Knowledge depends on data and information and is always linked to human resources, and it is based on their expectations about the cause." (Houda, 2015, p. 406).

The concepts of knowledge also differed according to the perspective, where we find: (Bassel et al., 2014, p. 248)

A- Administrative Perspective: According to this perspective, knowledge is the competitive assets of the company that undertakes the process of creative and strategic development based on creativity and renewal, which are considered the basis for survival in the changing environment and described it as a vital asset for consultancy.

b- The economic perspective: which sees knowledge as a resource as an intellectual capital and an added value that is achieved upon actual investment, and thus knowledge is always an economic and essential resource for business.

C - The informational perspective: This perspective holds that knowledge is the ability to deal with information and use it to achieve a specific goal. In many cases, knowledge is generated from data, where raw data can be processed and transformed into information and then into knowledge.

2.1.2.Knowledge traits:

Knowledge has many features, the most important of which are: (Ahmed, 2009, p. 8)

- Intangible means that it is intangible.
- It is not fixed as it is subject to continuous change by changing information.
- Knowledge is the product of knowledge, learning and experience.
- Previous knowledge is the basis for generating new knowledge.
- Knowledge is cumulative, renewed and increased.
- Cognitive ability can be interactive knowledge achieved through dialogue.

2.1.3. Types of knowledge:

Researchers differed in defining the types of knowledge and their classifications, according to Nonaka and Takeuchi: (Abdelmalek & Sarra, 2014, p. 128)

A- Visible knowledge: It is formal, organized, coded, expressive, transferable and easily learnable knowledge that can be embodied in the organization's products and services, work procedures and plans, and business evaluation criteria.

b- Implicit knowledge: It is that knowledge that individuals possess and stored in their minds. It is informal and difficult to express or transmit because it is linked to individual competencies.

2.2. Knowledge Management

2.2.1. The concept of knowledge management

There are many definitions of knowledge management, the most important of which are:

- It is the process of converting information and intellectual resources into resources of high value in order to develop the capabilities of human resources and the capabilities of the company and help it take effective measures to achieve its goals.
- There are also those who defined it on the basis of its operations and activities, as it is the set of processes developed in the organization to generate, store, transform and apply knowledge" (Hocine et al., 2016, p. 1688).
- It was also defined as: "The process in which information and intellectual resources are transformed into resources of high value in order to develop the capabilities of human resources and companies for the purpose of achieving their goals. (Houda, 2015, p. 406).
- Knowledge management constitutes a distinct administrative methodology adopted by many contemporary companies in managing and achieving its goals, and therefore it is carried out through several integrated processes as follows: (Bouhania, 2008, p. 237).
- Searching for internal and external sources of knowledge and identifying their contents and their suitability with the needs and requirements of the company.

- Attempting to reveal the sources of knowledge inherent in human resources and motivating them in order to employ them in the performance of their work and exchange them with the rest of the members of the company.
- Generating coordinated and integrated organizational knowledge that is a basis for the knowledge development of human resources and a basis for performance in the various sectors and levels of the company.
- Develop interaction and knowledge exchange between members of the organization through various organizational communication channels.
- Incorporating the available knowledge into business design, performance plans, and defining human resources tasks, so that organizational knowledge is put into actual use and is constantly developed and updated.
- Disseminating the available knowledge between the various sectors and levels of the company, and transferring it outside the company through its dissemination among clients and customers, and the formation of a broad knowledge base that represents the advanced technical and administrative level that the company enjoys.

2.2.2. Knowledge management processes:

The researcher concluded a set of essential processes for knowledge management consisting of: (Rateb et al., 2011, p. 516)

A- Knowledge creation: It means all the activities through which the company seeks to obtain and acquire knowledge from its multiple sources, such as those containing explicit or tacit knowledge.

B-Knowledge storage and organization: They are the processes that include the preservation, preservation, perpetuation and organization of knowledge, facilitation of research, access to it, and facilitation of ways to retrieve it, as this process is the organizational memory of the company.

C- Knowledge transfer and sharing: It means the dissemination and sharing of knowledge among the members of the company, where tacit knowledge is distributed through training and dialogue methods, while explicit knowledge can be disseminated through documents, internal publications, and learning.

D- Knowledge application: It is the purpose of knowledge management, which means using this knowledge at the appropriate time, and investing the opportunity of its presence in the company, as it must be employed in solving the problems facing the company, and this application should aim to achieve the goals and objectives of the company.

2.3. Knowledge management as a basis of company's innovation :

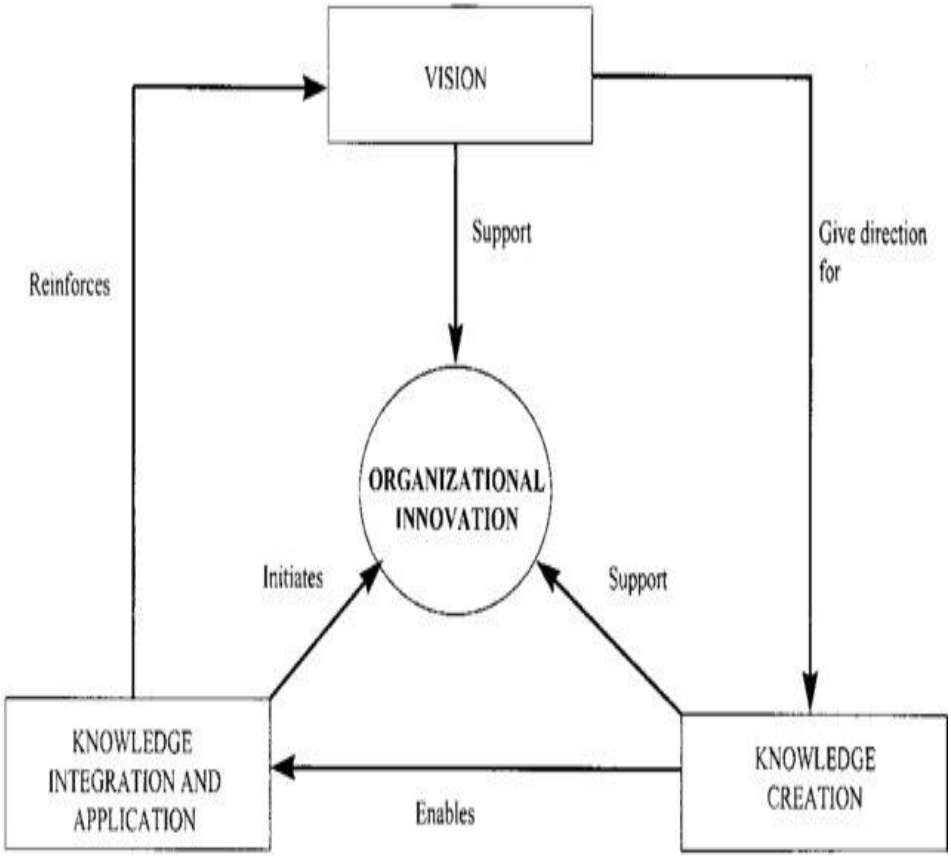
2.3.1. Innovation: "Innovation can be defined as 'the intentional introduction and application within a job, work team or organization of ideas, processes, products or procedures which are new to that job, work team or organization and which are designed to benefit the job, the work team or the organization.

2.3.2. Innovation Management: The process of creating and implementing a business design surrounding a creative idea, with the goal of transforming an invention into an

innovation, and ultimately to achieving sustained competitive advantage, leading to growth and profit, in the marketplace. (Reddy & Reddy, 2014, p. 20)

Innovation management can be seen as the creation and application of a practice, a process, a structure or a management technique (Bessaid, 2023, p. 390).

Figure 1: Vision, knowledge and organizational innovation.



Source: Johannessen, J. A., Olsen, B., & Olaisen, J. (1999). Aspects of innovation theory based on knowledge management. International Journal of Information Management, 19, p. 124.

Figure 1 shows how a clear corporate vision enables the integration and application of knowledge, which in turn supports organizational innovation a major driver of competitiveness. This highlights the strategic role of knowledge as a resource in competitive positioning.

The way knowledge is created, combined, and applied within the organization. A clear and forward-looking vision provides direction and alignment, which ensures knowledge assets are focused on strategic objectives.

In this model: Vision gives meaning and direction to organizational activities.

Knowledge creation, integration, and application become the operating instruments that convert vision into innovation.

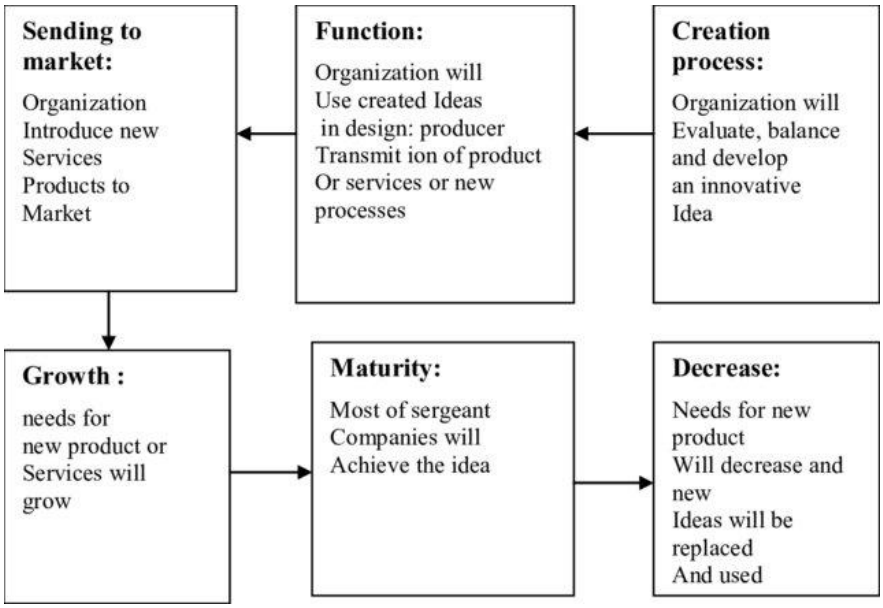
Knowledge-driven innovation is an important outcome that raises competitiveness through the provision of new products, processes, or approaches that meet market demands.

The above figure supports the fact that knowledge is not only an operating asset but also a strategic one, driving innovation and contributing to competitive positioning directly. It

further indicates that knowledge can be fragmented or wasted without a vision, failing to deliver strategic value.

In the Sonelgaz and Naftal case, this model would forecast that the connection of knowledge practices with a clear corporate vision can yield more effective innovation programs especially needed in the energy industry where technological progress and global competition are so prevalent.

Figure 2: Innovation process



Source: Hamid Tohidi and Mohamed Mehdi Jabbari, 2012, The important of Innovation and its Crucial Role in Growth, Survival and Success of Organizations Procedia Technology 1, p562.

This figure2 illustrates the lifecycle of innovation in an organization from idea creation to market introduction. It emphasizes that innovation is a multi-stage process

The diagram shows a six-stage process flowing from creation to decline, organized in two rows of three boxes each:

1. **Creation process:** Organization evaluates, balances, and develops innovative ideas.
2. **Function:** Organization uses created ideas in design, handles production and transmission of products/services, or implements new processes
3. **Sending to market:** Organization introduces new services and products to the market
4. **Growth:** Needs for new products or services grow
5. **Maturity:** Most sergeant companies (possibly "significant" companies) achieve the idea
6. **Decrease:** Need for new products decreases, existing ideas are replaced and used

This diagram represents a standard product lifecycle model conceptualized in academic literature, showing how organizations develop innovations from conception through market introduction, growth, maturity, and eventual decline. The arrows indicate the sequential progression through these stages.

2.3.3. The importance of knowledge management in improving the performance of the company.

- In general, it leads to the achievement of three very important things for any company, locally or globally, and these things are: (Mohamed, 2014, p. 130)
- Expand the expertise of human resources.

- Support and increase customer satisfaction.
- Increase profit and returns.
- It is considered one of the most important indicators of economic growth in light of the resource-based company theory, as it contributes to creativity and the abundant and continuous flow of data and information due to the communication revolution and the freedom and speed of information transmission, integration, reproduction and investment. (Mohamed & Hamed, 2011, pp. 181–182)

2.3.4. The impact of knowledge strategy on strengthening innovation and company competitiveness:

It is represented in the following: (Al-Anazi, 2013, p. 280)

- Dissemination and expansion of a knowledge culture that is reflected in the values of human resources in exchanging knowledge and increasing their creativity and competitiveness.
- Deepening the competencies of companies and their intrinsic capabilities that are not imitable, and the radical or additional innovations in products and services, which the company aims to provide a new positive competitive field.
- Knowledge management helps in improving the creative and competitive capabilities of organizations by collecting new ideas and solutions, and emphasizing that these capabilities are common to the various human resources in the organization.
- Contribute to the diversification of competitive strategies through the ideas generated by unique creative solutions.

3. Previous studies

3.1. S. Zia, M. Shafiq, 2017, Innovation and knowledge management: a literature review and research framework, Journal of Quality and Technology Management, Volume XIII, Issue I.

This paper discusses the relationship of knowledge creation process (KCP) and innovation also the role of organizational culture (OC) in this relationship. The controversial arguments in the literature regarding this relationship provoked this discussion. The paper covers the theoretical discussion on innovation and knowledge creation modes and formulates a research framework based on previous literature. The research argues that all four modes of knowledge creation (socialization, externalization, internalization and combination) are positively associated with product and process innovation. Furthermore, flexibility-oriented organizational culture moderates the relationship of KCP and innovation.

3.2. Katarzyna Walecka-Jankowska, 2015**,** Relationship between Knowledge Management and Innovation, Social Sciences, Vol. 4 / No. 90

The article presents the results of empirical research related to determinants of innovation. Both practitioners and theoreticians deal with the problems of managing innovation, seeking its determinants which can emerge by minimizing barriers to the creation and implementation of innovations The author concentrate on one of the most important determinant: knowledge management. The purpose of this article is to present which

knowledge process is the most important for supporting business innovation in comparison to other variables

3.3.**Jenny Darroch**, 2005, Knowledge management, innovation and firm performance, journal of knowledge management , VOL. 9 NO. 3

This paper presents knowledge management as a coordinating mechanism. Empirical evidence supports the view that a firm with a knowledge management capability will use resources more efficiently and so will be more innovative and perform better.

4. RESULTS AND DISCUSSION

4.1. Study Methodology

A questionnaire consisting of 28 questions has been developed, divided into two axes: knowledge strategy and competitiveness.

The human spatial boundaries included some workers from some production establishments in Tlemcen are: **Sonelgaz, Naftal.** Participants were selected purposively based on their direct involvement in corporate knowledge strategy functions within the two companies. This non-probability sampling approach was deemed appropriate given the specialized nature of the study population and the limited number of staff holding relevant positions. It is acknowledged that purposive sampling may introduce selection bias and limits the generalizability of findings beyond the studied organizations**..**

4.2. Reliability and Validity

A test of the degree of the “Reliability Analysis” tool was carried out by calculating the value of the “Cronbach’s Alpha” coefficient. It reached 88.9% and the validity ratio reached 94.2%. This indicates that the questionnaire has a good coefficient validity and reliability adapted to the needs of the research.

Table 1: Reliability Statistics

Alpha Cronbach	Number of eleme
,894	28

Source: Prepared by researcher based on SPSS.V21

4.3. Descriptive statistics

We use the five-point Likert scale, which included the following degrees of use: (1) strongly disagree, (2) disagree, (3) somewhat agree, (4) neutral, and (5) strongly agree.

Table 2*:* Descriptive statistics

	N	Mean	Standard deviation	Min	Max
Human resources possess qualifications and knowledge that allow them to accomplish the tasks assigned to them	37	2,38	,953	1	5
Human resources are characterized by the ability to deal with and use information.	37	2,19	,701	1	4
The company owns unique human resources that make the difference	37	2,76	,830	1	4
The competencies present in the organization are closely linked with business strategies and market needs	37	2,68	,915	1	4
The organization possesses the competencies that enable it to achieve excellence and respond quickly to changes in the environment.	37	2,65	1,086	1	5
The organization contains high-level talents that enable it to excel.	37	2,95	1,026	1	5
The organization works on developing and maintaining competencies.	37	2,92	,829	2	4
The Foundation organizes periodic meetings and seminars to present experiences and expertise in order to reach effective decisions.	37	3,03	,833	2	5
The company is interested in its human resources to provide ideas and suggestions.	37	3,08	,795	2	4
The organization provides communication technology to transfer information and use it quickly and flexibly.	37	2,59	,896	1	4
The Foundation works to develop teamwork to exchange knowledge and experiences and encourage participation in decision-making.	37	3,03	,957	1	4

The company owns technologies and information systems to store knowledge and positive solutions and benefit from them.	37	2,62	,758	1	4
The company has means and methods that help in the good use and application of knowledge.	37	2,65	,789	1	4
The organization works to attract and develop talents at various administrative levels	37	3,05	,848	2	4
Talent is evaluated and its effectiveness in achieving the organization's goals	37	2,86	,787	2	4
I have the ability to present new ideas and solutions to work methods.	37	2,35	,824	1	4
I have the ability to suggest quick solutions to face work problems in different circumstances.	37	2,41	,865	1	5
I have the ability to provide new ideas for business development easily and automatically	37	2,38	,794	1	4
I develop plans and solutions to face work problems that may occur.	37	2,43	,899	1	4
I have the ability to understand and explain the relationship between the results and the causes that led to them.	37	2,27	,871	1	5
New ideas gain importance and acceptance in the organization.	37	2,81	1,244	1	5
The administration adopts a policy of improvement by attracting human resources with creative orientations.	37	3,16	,800	2	5
The Foundation cooperates and communicates with universities and research centers as an important source for increasing creativity.	37	3,54	,869	2	5

Senior leaders in the organization put ideas on human resources for discussion and adopt their targeted suggestions.	37	3,19	,811	2	5
The organization's communication style is characterized by openness at all levels	37	3,08	,894	1	4
The Foundation has means for expressing opinion and dialogue such as the Foundation's magazine, a register or the Complaints and Suggestions box.	37	2,78	1,058	1	4
Creations and innovations in the organization are valued financially and morally.	37	3,59	,896	2	5
The Foundation works on developing and consolidating a culture of creativity.	37	3,30	,939	2	5

Source: Prepared by researcher based on SPSS.V21

The descriptive statistics reveal that while Sonelgaz and Naftal have made significant progress towards adopting a corporate knowledge strategy particularly in areas of innovation recognition and external partnership, there are still large deficiencies in the areas of employee empowerment, creativity, and analytical thinking.

The following are highlight statistics from the table to support these facts:

Strengths – High Mean Scores:

"Creations and innovations in the organization are valued financially and morally

Mean = 3.59, SD = 0.896

Shows strong recognition of innovative contributions.

"The Foundation cooperates and communicates with universities and research centers"

Mean = 3.54, SD = 0.869

Shows openness to external sources of knowledge, a positive sign of competitiveness.

"The administration adopts a policy of improvement by attracting human resources with creative orientations"

Mean = 3.16, SD = 0.800

Shows efforts in talent acquisition in alignment with strategic knowledge goals.

Weaknesses – Low Mean Scores:

"I can understand and interpret the relationship between the outcomes and the causes that produced them"

Mean = 2.27, SD = 0.871

Indicates restricted analytic ability among staff.

"I can easily and naturally generate new ideas for business development"
Mean = 2.38, SD = 0.794
Indicates low levels of self-reported creative initiative.
"Human resources possess qualifications and knowledge that allow them to perform the tasks assigned to them" Mean = 2.38, SD = 0.953
Reflects gaps in employees' basic knowledge or confidence.

Summary Statement :

These figures suggest that while the baseline structure for a corporate knowledge strategy is available through external collaboration and innovation valorization a need to improve internal capabilities, specifically in developing individual competences that are essential for competitiveness.

Table 3: Descriptive statistics of the axes

		knowledge strategy	**competitiveness**
N	Valid	37	37
	Missing	0	0
Mean		2,7622	2,8690
Standard deviation		,45881	,51565
Min		1,87	1,77
Max		3,73	3,77

Source: Prepared by researcher based on SPSS.V21

The mean score for the knowledge strategy dimension was 2.762 (average). The highest sub-item score (3.08) corresponded to “The organization works to attract and develop talents at various administrative levels.”

The mean score for the **competitiveness** dimension was 2.869 (average). The highest sub-item score (3.59) corresponded to “Creations and innovations in the organization are valued financially and morally.”

4.4- The Correlations between knowledge strategy and strengthening company competitiveness

Table 4: Correlations

		knowledge strategy	company competitiveness
Knowledge Strategy	Correlation of Pearson	1	,750
	Sig. (bilateral)		,000
	N	37	37
Company Competitiveness	Correlation of Pearson	,750	1
	Sig. (bilateral)	,000	
	N	37	37

Source: Prepared by researcher based on SPSS.V21

Table 4 illustrates the correlation shows that there is a significant relationship between knowledge strategy and strengthening company competitiveness as the P-Value is below than (0.05).

The correlation between knowledge strategy and organizational innovation (r = 0.750) indirectly supports the idea that better knowledge management fosters innovation, which in turn strengthens competitiveness. This confirms the theoretical link between knowledge-based strategy and competitive advantage.

4.5- The impact of corporate knowledge strategy on strengthening company competitiveness

- **H0:** There is no significant effect of corporate knowledge strategy on strengthening the company's competitiveness.
- **H1:** There is a significant and positive effect of corporate knowledge strategy on strengthening the company's competitiveness.

Table 5: Regression ANOVA

Model		**Sum Squares**	df	**Mean Squares**	D	Sig.
1	Regression	5.381	1	5.381	44.937	0.000
	Residual	4.191	35	0.120		
	Total	9.572	36			

Source: Prepared by researcher based on SPSS.V21

Table 6: Coefficients

Model		Sig.
1	(Constant)	,133
	knowledge strategy	,000

Source: Prepared by researcher based on SPSS.V21

Based on the results presented in the table, the ANOVA model is statistically significant (F = 44.937, df = 1/35, Sig. = 0.000), indicating that the regression model fits the data well. The R^2 value derived from the regression sum of squares (5.381/9.572) equals approximately 0.562, meaning that corporate knowledge strategy explains about 56.2% of the variance in company competitiveness. The significance level (Sig.) for the predictor variable "corporate knowledge strategy" is less than 0.05, confirming statistical significance. Therefore, we reject the null hypothesis and accept the alternative hypothesis, which states that **corporate knowledge strategy has a significant effect on strengthening the company's competitiveness.**

5. Conclusion

This study underscores that adopting a corporate knowledge strategy is no longer an option but a strategic necessity, especially in rapidly changing sectors like energy.

By the systematic institutionalization of knowledge sharing, stimulation of innovations, and alignment with long-term vision, organizations like Sonelgaz and Naftal can be sustainably and competitively positioned.

The research has brought to light several key findings:

- A comprehensive corporate knowledge strategy is critical to improving overall organizational performance.
- Competitive success increasingly depends on the ability to manage and mobilize knowledge assets.
- Innovation is not solitary but integrated within knowledge processes.
- Employees who contribute knowledge and generate ideas are central to the success of any enterprise.

6. Recommendations

- Develop and implement an integrated corporate knowledge strategy that is aligned with the firm's competitive goals.
- Invest in advanced digital infrastructure to facilitate knowledge sharing and access.
- Recognize human talent as a strategic resource and invest in developing it.
- Establish a culture of organizational learning and continuous innovation.
- Strengthen collaboration with universities and research organizations to build the knowledge base and enable innovation-led competitiveness.

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