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The degree of availability of core capabilities to improve the quality of scientific research, Analytical study on a sample of researchers from the University of Adrar.

درجة توافر المقدرات الجوهرية لتحسين جودة البحث العلمي، دراسة تحليلية على عينة من باحثي جامعة أدرار

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Abstract:
The study aimed to measure the degree of availability of core capabilities among researchers at Adrar University, using the descriptive and analytical approach, relying on the electronic questionnaire as a tool for data collection and analysis, with the help of the SPSS program, the sample was randomly represented by (296) researchers, based on Morgan's table (N = 975), and selected by computer.
The results showed the average level of the degree of availability of substantive capabilities from the viewpoint of researchers at Adrar University, where the arithmetic mean was (3.11), i.e. (62.26%), and the results also showed that there were no differences between the total degree of response of the sample members and the faculty of affiliation of the researcher.
Keywords: core capabilities; quality; scientific research; differences; researchers.
JEL Classification Codes : M1, J24, I23

ملخص:
هدفت الدراسة إلى قياس درجة توافر المقدرات الجوهرية لدى الباحثين بجامعة أدرار، مستخدمين بذلك المنهج الوصفي والتحليلي، بالاعتماد على الاستبيان الإلكتروني كأداة لجمع البيانات وتحليليها، بالاستعانة ببرنامج *(SPSS)* وكانت العينة عشوائية ممثلة في (296) باحث، بناء على جدول مورغان*(N = 975)* ، وفي اختيارها عن طريق الحاسوب.
وأظهرت النتائج المستوى المتوسط لدرجة توافر المقدرات الجوهرية من وجهة نظر الباحثين بجامعة أدرار حيث بلغ المتوسط الحسابي (3.11) أي بنسبة (62.26 %) كما أظهرت النتائج عدم وجود فروق بين الدرجة الكلية لاستجابة أفراد العينة وكلية انتماء الباحث.
كلمات مفتاحية: مقدرات جوهرية، جودة، بحث علمي، باحثين، فروق.
تصنيفات JEL : M1، J24، I23

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Introduction

The investment in the human resource is one of the prominent challenges facing business organizations in our time, as it represents the distinguishing mark in the degree of competitiveness of these organizations, not to mention the excellence of this element over the other elements of production with characteristics that make it a full priority such as creativity, innovation and learning, these characteristics may be personal gains or as a result of friction and dealing with other parties within the organization, which generates new gains for the organization, termed as core capabilities.

There is no doubt that the degree of availability of these capabilities within the organization will be different depending on the nature of its activity and the nature of the relationship prevailing among its human crews, which is directly reflected on the extent to which these capabilities contribute to improving the performance of the organization.

In order to get closer to the concept of core capabilities, we will drop the subject of the study in practice through a survey study for researchers at the level of Adrar University, in order to identify the degree of availability of core capabilities and the extent of the latter's contribution to improving the quality of scientific research at the level of Adrar University.

problematic

From the above, the following problemtic can be formulated:

What is the degree of availability of core capabilities to improve the quality of scientific research at Adrar University?

The following questions arise from the main question:

1. Are the researchers of Adrar University available intrinsic capabilities to improve the quality of scientific research?

2. Are there statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the total degree of response of the sample members towards the degree of availability of core capabilities to improve the quality of scientific research according to the researcher's affiliation college?

1.1.2 : Study Hypothesis

There are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the total degree of response of the study sample and the researcher's college affiliation.

1.1.1 : importance

The study seeks to highlight the role of core capabilities to improve the quality of scientific research by enriching the knowledge related to it and trying to benefit from it by researchers and academics, who in turn seek to explore the fields of strategic management, and we also seek to highlight the importance through the results reached through the field study.

1.1.2 : Objectives: The study seeks to achieve the following objectives:

- ✓ Definition of core capabilities.
- ✓ Highlighting the role of core capabilities in raising the productivity and improving scientific research.
- ✓ Recognizing the degree of availability of core capabilities to improve the quality of scientific research.
- ✓ To reveal the significance of the differences in the sample under study.

1.1.3 : Study Approach

The descriptive and analytical approach was relied upon in presenting and analyzing the study, which is the appropriate approach to the problem of the study, as it was relied on describing the phenomenon by using the means and tools of scientific research in order to identify the achieved results.

The first axis: the theoretical framework

2.2.2 : The concept of core capabilities

There is a clear discrepancy in the attitudes of researchers and writers regarding defining an accurate concept of intrinsic capabilities, it is possible that the concept of core capabilities, core capabilities, or scarce resources may be used to refer to the same meaning, defining the concept of core capabilities depends on the organization's strategic direction and thinking, the nature of its work units, as well as the most important characteristics it enjoys, this concept also varies depending on the nature of the industry in which the organization operates, and some research never identifies the differences between these terms.

Core capabilities are defined as the unique integration of technologies, specialized knowledge, skills, and experience that a company possesses and typically possesses the following characteristics: complexity, invisible, difficult to imitate, robust, unique, irreplaceable, and superior (Yang, 2015, p. 176), it is the equivalent of a family's precious metal that should not be mortgaged or sold for short-term gain, and can be tested for its ability to meet the following criteria. (Tampoe, 1994, p. 67)

- ✓ Necessary for the short and long term survival of organizations.
- ✓ Invisible to competitors.〕It is difficult to imitate.
- ✓ Unique to the organization.〕It is a combination of skills, resources and processes. The ability that the organization can maintain over time.
- ✓ Greater than the efficiency of individuals within the organization.
- ✓ Necessary to develop core products and services.
- ✓ Fundamental to the implementation of the strategic vision of the organization.
- ✓ Necessary for the organization's strategic decisions, i.e. on diversifying downsizing, rationalizing expenditures, and creating alliances and joint projects.
- ✓ Marketable and commercially valuable.
- ✓ They are few.

2.2.2. The concept of the quality of scientific research

It means the scientific quality of the research goals and objectives, the quality of knowledge within the discipline and across different fields, clarity of hypotheses and theories, originality, innovation, added value locally and internationally, and applicability. It reflects the creative characteristics of scientific research activities and their contributions to the development of knowledge.

The second axis: the application framework

2-1: study population and sample

The study population consisted of researchers at Adrar University, represented by doctoral students and professors, according to the faculties included in the questionnaire, numbering (975) researchers. Morgan (Krejcie & Morgan, 1970, p. 608) table was adopted to extract the appropriate sample size for the study, which can represent The original community, and through the table below we can clarify it.

Table No. 1: Study sample according to Morgan's table.

community size (N)	required sample (n)	desired sample (n)	Retrieved Questionnaires	response rate
975	276	320	296	93%

Source: prepared by researchers

2.2: honesty and reliability test

2-2-1: Honesty

It represents the accuracy of a measure or the degree that represents the concept, in other words “Are we measuring what we think we measure?” (Zikmund, et al, 2013, p. 303) That is, how can we be reasonably sure when implementing the scale that we are measuring the concept we intended to measure, and not measure something else? We can measure the honesty of the internal consistency by performing the correlation coefficient shown in the table below.

Table 2: The honesty of the internal consistency of the instrument.

Number	Questionnaire phrases	Correlation coefficient	Indication level
1	I benefit from assistance in my research project based on my friendly relations with the rest of my fellow researchers.	.632**	0.000
2	I create scientific flexibility by communicating and exchanging information with researchers.	.549**	0.000
3	I do some consultations with researchers to build on previous experiences of publishing on the ASJP platform.	.601**	0.000
4	I would prefer to contribute to joint research projects in order to enhance teamwork with researchers.	.643**	0.000
5	I seek to form a diverse research team and work with it	.648**	0.000

	for as long as possible.		
6	I have the competence to address issues that I may encounter on the ASJP platform.	.626**	0.000
7	I can manage time in an appropriate way and get rid of psychological burdens (physical and intellectual fatigue, anxiety…etc).	.536**	0.000
8	As a researcher, I am involved in some decisions related to researchers.	.630**	0.000
9	As a researcher, I am involved in some decisions related to researchers.	.552**	0.000
10	I take full responsibility when performing my research assignments.	.483**	0.000
11	I take full responsibility when performing my research assignments.	.513**	0.000
12	The goals of researchers by publishing on the ASJP platform are part of the goals of the university.	.584**	0.000
13	The distinguished publications of researchers on the ASJP platform are highly appreciated by the university researchers.	.558**	0.000
14	The common vision in the field of scientific research is widely supported and accepted among researchers.	.596**	0.000
15	Exempting the researcher from multiple responsibilities allows allocating sufficient time to keep pace with scientific research.	.599**	0.000

Source: prepared by researchers

2.2.2 :Constancy

Reliability is an indicator of a measure's internal consistency, and a scale is reliable when different attempts to measure something lead to the same result (Zikmund, et al, 2013, p. 301), it is related to estimates of the degree to which a measurement is free from random error or unstable, and the instrument has strong high stability when it performs well at different times and under different conditions (Cooper & Schindler, 2014, p. 260), it is performed by (Cronbach's Alpha) whose value ranges between (0 and 1) and in general its value should be higher than (0.70) and less than (0.95) to prove internal consistency. (Hair, et al, 2019, p. 760).

Table No. 3: Tool stability test

Statement	Cronbach's Alpha coefficient	
Degree of availability of core capabilities	Stability value	number of phrases
	0.868	15

Source: prepared by researchers

Through the above table, we note that the coefficient (Cronbach's Alpha) exceeded the standard value and its value was (0.868), and from it it can be said that the tool is valid for conducting the analysis.

2.3. Test for the normal distribution of the data

The appropriate statistical method is determined based on the quality of the distribution to which the data belongs. If the distribution is normal, then the appropriate statistical method is laboratory statistics, and if it is abnormal, the nonparametric statistical method is appropriate (Conover, 1999, p. 116), (Kim H.-Y. , 2013, p. 53) presented a method showing the values of torsion and oblateness , accepted in proportion to the sample sizes that range between (50 < n < 300) and correspond to the level of significance (0.05) by specifying the absolute (Z) value, he sees that the data are normally distributed if this value is less than or equal to (±3.29) for skewness and splaying through the following equation:

$$\boldsymbol{Zskew} = \frac{\boldsymbol{Skew\ value}}{\boldsymbol{SEskewness}};\ \boldsymbol{Zkurt} = \frac{\boldsymbol{Excess\ kurtosis}}{\boldsymbol{SEexcess\ kurtosis}}$$

Résultats de traduction

Table 4: Results of the normal distribution of the data.

Variables	**Skewness**	**SEskewnwss**	**Zskew**	**Kurtosis**	**SEkurtosis**	**Zkurt**
core capabilities	-0.002	0.142	-0.016	-0.441	0.282	-1.562

Source: Prepared by researchers based on SPSS outputs. V. 26

Through the above table, we note that the intrinsic capabilities variable follows a normal distribution as it has achieved the required standard.

2.4 : View results

During the preparation of the questionnaire, questions were taken into consideration that cover all aspects of the theoretical aspect of the study and meet all requirements that affect the hypotheses of the study, taking into account that the questions are clear and understandable for the speed of response, and the five-point Likert scale was used, consisting of (05) degrees, to determine the importance of each paragraph Measuring the respondents' answers according to the table below:

Table 5: Lower and upper limits of the Likert pentagonal scale.

Likert values	**Arithmetic mean classes**	**Percentage (p.c)**	**Availability**
1	1 to 1.79	20 % to 36%	Very few
2	1.80 to 2.59	37 % to52 %	few
3	2.60 to 3.39	53 % to 68 %	medium
4	3.40 to 4.19	69 % 84 %	Big
5	4.20 to 5	85 % to 100 %	Very large

Source: Pimentel, Jonald L. (2010). A note on the usage of Likert Scaling for research data analysis. USM R&D Journal, 18(2), p. 111.

2.4.1 : The first question

Are the researchers of Adrar University available intrinsic capabilities to improve the quality of scientific research?

Table No. 6: Results of Availability of Core Capabilities.

Number	Questionnaire phrases	Simple moving average (SMA)	Standard deviation	Percentage	Availability
1.	I benefit from assistance in my research project based on my friendly relations with the rest of my fellow researchers.	3.25	0.77	64.93	**Average**
2.	I Create scientific flexibility by communicating and exchanging information with researchers.	3.15	0.78	62.91	**Average**
3.	I do some consultations with researchers to build on previous experiences of publishing on the ASJP platform.	3.18	0.81	63.58	**Average**
4.	I prefer to contribute to joint research projects in order to enhance teamwork with researchers.	3.04	0.78	60.81	**Average**
5.	I seek to form a diverse research team and work with it for as long as possible.	3.27	0.77	65.41	**Average**
6.	I have the competence to address issues that I may encounter on the ASJP platform.	3.08	0.77	61.69	**Average**
7.	I can manage time in an appropriate way and get rid of psychological burdens (physical and intellectual fatigue, anxiety…etc).	2.85	0.76	57.03	**Average**
8.	As a researcher, I am involved in some decisions related to researchers.	2.78	0.74	55.61	**Average**
9.	I have the full opportunity to practice my research activity freely.	3.43	0.74	68.58	**Average**
10.	I take full responsibility when performing my research assignments.	2.85	0.82	57.03	**Average**
11.	The ASJP platform provides researchers with a clear research view while preparing and following up on research projects.	3.25	0.77	64.93	**Average**
12.	The goals of researchers by publishing on the ASJP platform are part of the goals of the university.	3.04	0.75	60.81	**Average**
13.	The distinguished publications of researchers on the ASJP platform are highly appreciated by the university administration.	3.27	0.70	65.34	**Average**
14.	The common vision in the field of	3.28	0.74	65.68	**Average**

	scientific research is widely supported and accepted among researchers.				
15.	Exempting the researcher from multiple responsibilities allows allocating sufficient time to keep pace with scientific research.	3.14	0.70	62.84	**Average**
Total Availability		**3.11**	**0.45**	**62.26**	**Average**

Source: prepared by researchers

The above table shows that the intrinsic abilities are of an average level, which is indicated by the arithmetic mean of (3.11) compared to the hypothetical mean (3), and with a standard deviation of (0.45), which is a value close to zero, which means the great harmony of the answers of the study sample, as for the paragraphs, paragraph (9) obtained the highest arithmetic average of (3.43), which indicates complete freedom on the part of the university in dealing with the researcher's research projects, paragraph (8) also recorded the lowest level, with an arithmetic mean of (2.78) and a high standard deviation compared to the previous paragraph, which reflects the researcher's lack of participation in the formulation of research decisions.

2.4.2 : second question

Are there statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the total degree of response of the sample members towards the degree of availability of core capabilities to improve the quality of scientific research according to the researcher's affiliation (college)?

Table 7: Results of the One-Way ANOVA

variable	Contrast source	sum of squares	degree of freedom	medium squares	F Value	Sig.Value	The result
Degree of availability of core capabilities	between groups	0.944	4	0.236	1.161	0.328	There are no differences
	within groups	59.141	291	0.203			
	total	60.085	295				

Source: prepared by researchers

Through the above table, we note that the significance level (0.328) is greater than the level of significance and therefore we accept the null hypothesis, meaning that there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the total degree of response of the sample members towards the degree of availability of essential capabilities to improve the quality of scientific research According to the researcher's affiliation.

Conclusion

Although intrinsic capabilities are an essential foundation for practicing any activity, not to mention the field of scientific research, which is characterized by dynamism and rapid development, which requires researchers and heads of research teams to think seriously about the foundations to improve the quality of scientific research, there are many core capabilities such as the successful implementation of a knowledge management system, excellent management of research teams, investment in research and development, etc. These are the main resources and most of them are valuable, scarce, unique and irreplaceable resources.

Through what was reviewed regarding determining the degree of availability of core capabilities to improve the quality of scientific research from the point of view of researchers at Adrar University, and to answer the questions of the study, the most important conclusions and recommendations related to core capabilities were drawn, which would improve the quality of scientific research according to the analysis of the study evidence as follows:

Deductions

1. There is a strong correlation between the paragraphs of the questionnaire and the total score.
2. The total degree of availability of the core capabilities of the researchers of Adrar University came to a medium degree, where the ratio reached (62.26%) with an arithmetic average of (3.11).
3. The study showed that opportunities are available for researchers to practice their research activities with complete freedom and comfort.
4. The study indicates that the university administration is interested in the distinguished publications of researchers and receives all appreciation and praise from its side.
5. It was found through the study that researchers are working on cooperation and creating scientific flexibility through communication and information exchange with researchers. And take advantage of the friendly relations that bind them with the rest of the fellow researchers in launching research projects.
6. The study indicates that researchers always seek to form diverse research teams and work with them for as long as possible.
7. There are no statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the responses of the study sample members towards the degree of availability of core capabilities to improve the quality of scientific research from the viewpoint of researchers at the University of Adrar. Therefore, the researcher's college affiliation will not constitute an obstacle to the availability of core capabilities.

Recommendations

Based on the results of the study, we recommend the following:

- ✓ The necessity of paying attention to the core capabilities as they are the cornerstone on which scientific research is based, on the one hand, and on the other hand, the criterion that defines the university's competitiveness at the local and global levels.
- ✓ Increased interest by the university in motivating researchers to publish their research at the local and global levels.

- ✓ The need to maintain cooperation between researchers to create a dynamic scientific environment that keeps pace with the development in the field of scientific research.
- ✓ Training researchers on managing research projects.
- ✓ Supporting and backing cohesive research teams among themselves for the longest possible period.

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