

KNOWLEDGE MANAGEMENT IMPLEMENTATION AT MOROCCAN UNIVERSITIES, TESTING AVAILABILITY OF ADEQUATE INFRASTRUCTURE (CULTURE-STRUCTURE-LEADERSHIP AND I.T): CASE OF ABDELMALEK ESSAADI UNIVERSITY

Yassine BOUSSENNA

P.H.D.

Research group: Management & Information System

National School of Business and Management, (E.N.C.G), Tangier, Morocco

y.boussenna@gmail.com

ABSTRACT

Effective knowledge management implementation requires organizational, Human, and Technological appropriate infrastructure. Throughout the literature, most authors cite (Culture, Structure leadership, and Information Technology).

The primary aim of this study was to verify the success factors for knowledge management implementation at Moroccan universities via the Abdelmalek Essaadi University subject of this work. Through a deductive reasoning approach and a quantitative working method, using the questionnaire as a tool to collect data from a proportional random and representative sample of 88 teacher-researchers from the different institutions of the university under study, the analysis of the data was done according to two logics, a descriptive logic by calculating the means and the standard deviations and an analytical logic for the test of the hypotheses by using regression.

This paper presents empirical evidence of the positive relationship between (Management leadership, IT) and (KM) implementation at Moroccan universities with a Pearson correlation rate of $R = 0,635$ For Leadership, $0,712$ for Culture, $0,576$ for Structure, and $0,554$ for Information Technology.

Also, the results got to show the insufficient presence of initiatives for (KM) application, with an average of $2,14$ for leadership and $2,29$ concerning (IT), $1,89$ for culture, and $2,03$ for the structure according to the university's teachers.

This paper presents empirical evidence on the importance of organizational, technical, and human factors in knowledge management implementation.

Key Words: *Knowledge Management, Organizational Culture, Organizational Structure, Leadership, Information Technology, University.*

1. INTRODUCTION

The changes in the global economy have resulted from a different approach to value creation. This new economy recognizes the importance of knowledge resources as a key factor in maintaining a competitive advantage. The shift from a manufacturing economy to a knowledge economy has significantly increased the importance of intangible capital in the value creation process.

Knowledge is thus recognized as a source of competitive advantage not only for organizations but also for countries. Drucker (1993) states that “increasingly, knowledge productivity will become the determining factor of competitiveness for a country, an industry or a company. No country, no industry, no company has a “natural” advantage or disadvantage in knowledge. The only advantage that it can ensure is to make better use of the knowledge available to all than the others.

Several types of research have established that most universities do not have an explicit KM strategy even if they are aware of the importance of such a strategy, as its implementation remains difficult (Trivella and Dimitrios, 2015). Hence, it the importance of being aware of the enabling factors and barriers associated with KM processes, for example, knowledge creation, knowledge sharing, and utilization at the level of these organizations (Rowley and Veer Ramjeawon, 2020).

In developed countries, universities already play a key role in economic and social development through the quality of scientific research, adaptation to new technologies, development of human capital, encouragement of innovation, and training of managers capable of leading change in all fields.

In the Moroccan context, higher education is constantly floundering with many problems, despite the multitude of reforms that have followed one another since the beginning of the third millennium. The quest for academic performance is at the heart of royal speeches and governmental polemics (Bouayad et al., 2017).

And throughout the literature, several factors positively affecting KM initiatives in public organizations and specifically in universities are discussed. For Ranjan and Bhatnagar (2008), these are factors or parameters necessary for the continued success of an organization and these factors represent the areas of management that require special and continuous attention to achieve high performance. Some are the same as those identified for private organizations and others are specific to public organizations. Most authors (Butler and Murphy, 2007; Cong, 2008; Ansari et al., 2012) cite several factors; but in this article, we will focus on (Culture-Structure-leadership and I.T).

An open culture characterized by employee participation and employee initiatives is conducive to creating and sharing knowledge. A flexible culture, however, promotes pro-activeness to changes. But the culture of individualism where one wants to dominate discourages knowledge transfer, while in an organization that fosters cooperation, knowledge sharing and knowledge transfer are high (Ahmadi et al., 2016). A learning culture that emphasizes continuous learning is thus essential and brings success to knowledge management (Goran and Sağsanb, 2021).

Also, an organizational structure must be flexible to promote the distribution of knowledge within the organization. In contrast, a centralized and overly formalized structure will prevent communication between units and the profusion of the distribution of ideas. The communication channels will not favor a fluid diffusion and efficient sharing of knowledge. The structure was particularly highlighted as a factor affecting the successful implementation of KM. Thus, horizontal organizations are more convenient for the information and knowledge era because of the flexibility that this type of organization offers (Ansari et al., 2012).

As well, leadership plays an important role in managing knowledge within organizations. Insufficient or ineffective support from top managers can lead to the failure of knowledge management projects. Traditionally, leadership research has not specifically considered leadership as an enabler of knowledge management. However, recent research has emphasized the importance of leaders in managing knowledge.

Several studies have shown the importance of management leadership in supporting the implementation of the KM process (Donate and De Pablo, 2015; Jiang and Chen, 2018; Akram et al., 2019; Rao Jada et al., 2019; Singh et al., 2019; Shahnawaz and Halil, 2020).

In parallel, effective knowledge management (KM) requires the use of organizational strategies and information technology (IT). Our definition of IT includes computers and communications technologies, IT is likely to play a crucial role in implementing most KM initiatives (Stansky, 2005; Fullwood et al., 2013).

Several researchers have insisted on the importance of information technology (IT) to support the creation, storage, retrieval, transfer, and application of knowledge in organizations through data mining and learning tools, knowledge repositories, databases, electronic bulletin boards, discussion forums, intranets, email, calendaring tools, collaboration tools, including text-based and audio chat tools, telecommunication, and video-conferencing.

The preliminary aim of this research is to verify first the existence of infrastructure conducive to knowledge management implementation at the Moroccan universities through the Abdelmalek Essaadi University subject of this work. and secondly to misuse the application of the process K.M (creation, storage, sharing, and use of knowledge) within this university from the point of view of teachers.

Thus, our reflection will focus on the treatment and analysis of the following three elements: (1) Literature review and development of hypotheses (2) Epistemological positioning and methodological choice, (3) presentation of the results, and (4) discussion of the outcomes.

2. THEORETICAL BACKGROUND AND HYPOTHESES

The enormous amount of information in our daily life and the continuous work to organize it, in order to organize in order to exploit it in the best possible way, has led to the emergence of a new concept known as knowledge management.

In addition, the term "performance" has been much talked about. It is a widely used vocabulary in the field of management. The quest for performance was the ultimate goal of all organizations.

2.1 KNOWLEDGE MANAGEMENT IN THE UNIVERSITY CONTEXT

2.1.1 DEFINITION OF KNOWLEDGE MANAGEMENT IN UNIVERSITIES

There is no one definition of knowledge management in universities. Several researchers have used different approaches to define university knowledge management. According to (Abu Naser et al., 2016) It can be said that K.M in universities is similar to knowledge management in industry or services in terms of operation and focusing on the linkage between individuals, with the aim of achieving a competitive advantage in terms of performance and results.

Laal defined it as "the process of converting information and intellectual assets to a permanent value that allows individuals to use the necessary knowledge at the right time (laal, 2010).

Ramachandran et al. defined KM in universities as "a systematic attempt to develop and implement knowledge in universities through the support of strategic support factors (Ramachandran et al., 2013).

Also, Petrides and Nodine defined KM in universities as a way for people working in educational institutions to develop a set of practices of creating and sharing what they know, which consequently allows for improving the level of services and products offered by educational institutions (Petrides and Nodine, 2003).

2.1.2 THE KNOWLEDGE MANAGEMENT PROCESS FOR UNIVERSITIES

Knowledge assets are managed in several ways, namely: through capitalization, sharing, and knowledge creation (Ermine, 2008).

There is no unified agreement among authors and researchers regarding the number of K.M processes, as different researchers define them in different ways (Costa and Monterio, 2016) and with several models as they are defined as three stages: knowledge generation, knowledge codification, and knowledge transfer. Or four consist of Acquiring, storing, sharing, and applying knowledge or it is a five-step process consisting of (knowledge acquisition, knowledge formation, knowledge transfer, knowledge storage, and application) (Abidi et al., 2018, p 5). (Becerra et al., 2004) integrated the empirical research findings of Nonaka (1994) (socialization, externalization, internalization, combination), and distinguished four knowledge management processes: knowledge discovery, knowledge capture, knowledge sharing, and knowledge application.

On our part in this work, we will opt for the most used model and the most adapted to the universities in four stages consisting of: acquiring, storing, sharing and using knowledge, (Alavi and Leidner, 2001; Laudon and Laudon, 2007, Douih, 2009).

2.2 ORGANIZATIONAL CULTURE

The concept of organizational culture is not new. For a long time, organizational leaders have sought to create an "in-house spirit", characterizing the specificity of their know-how against all competitors. In this first observation, organizational culture allows the organization to stand out from those around it. The organization is in fact a zone of conflict and tension between several cultures. Organizational culture is both a motivating factor and the bearer of an image that enhances its value to the outside world. Organizational culture is a moving, living and complex concept that is attracting a lot of attention in the professional world today. Intranets, charters, seminars...

There are many initiatives aimed at shaping it, whether to stimulate the feeling of belonging among employees or to drive a change in an organization or method. In light of the above, we can say that the organizational culture represents A set of features that characterize the organization of Other organizations, which strongly influence The behavior of individuals within the organization and has constituted a framework that guides the behavior Human of individuals has certain values such as laws, efficiency, effectiveness...

2.2.1 ORGANIZATIONAL CULTURE AND K.M IN THE PUBLIC SECTOR

The culture in the public sector continues to be aligned with traditional models of bureaucracy. Moreover, public sector organizations are fundamentally different from private sector organizations on a number of dimensions, including the diversity of their goals, access to resources, and the nature of organizational constraints (Parker and Bradley, 2000). De Long and Fahey (2000, p.122) discuss various characteristics that determine social interaction in an organization (El moustafid, 2015, p 111).

Organizations that do not face competition are not motivated to create efficient processes. In these organizations, the bureaucratic culture leaves little room for creativity and knowledge-based initiatives. The public sector, unlike the private sector, adopts an asymmetric reward logic: unsuccessful innovations are punished while successful ones are rewarded (Abdullah and Date, 2009, p.7).

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The various theoretical arguments and empirical studies presented previously allow us to deduce the first hypothesis: ***“There is a positive relationship between the organizational culture and Knowledge Management implementation at Abdelmalek Essaadi University from the point of view of teacher-researchers”.***

2.3 ORGANIZATIONAL STRUCTURE

The term "organizational structure" comes from organizational theory and refers to the hierarchical framework that defines the internal division of labor within an organization. An organizational structure is used to structure an organization according to its objectives (to increase production, to secure the future, to promote growth). It helps to clarify the following points:

- ✓ What functions and departments exist in the organization?
- ✓ What responsibilities do they have?
- ✓ How is the network of relationships structured?
- ✓ What does the hierarchy of information and orders look like?

2.3.1 LINK BETWEEN ORGANIZATIONAL STRUCTURE AND K.M

Organizational structure refers to the way in which an organization allocates human resources and tasks in order to achieve its goals (Helms, 2006, p 629). The organizational structure thus determines the decision-making process as well as the responsibilities for materials, resources, and human processes.

There is literature on how organizational structure improves KM efficiency in organizations (Downes, 2014; Mahmoudsalehi and Sfari, 2012; Yousif, 2012; Allameh et al., 2011; Yang and McLean, 2010). According to Mahmoudsalehi and Safari (2012), organizational structure impacts KM processes as it determines the ways and rates of communication between members of the organization. They further stated that organizational structure specifies a point (place) where the decision is taken in an organization which affects the efficiency and effectiveness of new knowledge implementation. Yang and McLean (2010) said the structural impact on KM improves organizational efficiency, effectiveness, and performance through a pattern of knowledge organization, KM activities coordination, and the degree to which practices of KM are entrenched in routine job processes in an organization. Downes (2014) argued that organization structure influences KM efficiency. Furthermore, bureaucratic structure hinders the free flow of information and knowledge. Organizations that are characterized by strong hierarchy structures adversely affect knowledge flow (Umale et al., 2020). In continuation, Riege (2005), Syed-Ikhsan and Rowland (2004) posit that knowledge transfer flourishes when organizational structure encourages the free flow of information with limited boundaries between business units and management levels. (Roper and Pettit, 2002).

An organizational structure must be flexible to promote the distribution of ideas and knowledge within the organization. In contrast, a centralized and overly formalized structure will prevent communication between units and the profusion of the distribution of ideas. The communication channels will not favor a fluid diffusion and efficient sharing of knowledge in such a structure. The organizational structure thus determines the decision-making process as well as the responsibilities for materials, resources, and human processes (Boussenna, 2021). Also, the organizational structure was particularly highlighted as a factor affecting the

successful implementation of KM. Thus, horizontal organizations are more convenient for the information and knowledge era due to the flexibility that this type of organization offers (Ansari et al., 2012, p.215).

The main factors related to organizational structure identified in the literature are (Ansari et al., 2012, p.215; Cong, 2008, p.111; Butler & Murphy 2007, p 615).

- ✓ The degree of centralization;
- ✓ The degree of formalization;
- ✓ Communication flows.

The various theoretical arguments and empirical studies presented previously allow us to deduce the second hypothesis: *“There is a positive relationship between the organizational structure and Knowledge Management implementation at Abdelmalek Essaadi University from the point of view of teachers researchers”*.

2.4 LEADERSHIP

2.4.1 HISTORICAL OVERVIEW OF THE EVOLUTION OF LEADERSHIP

According to Pelletier (2017), classical theories of leadership fall into three categories. First, some research focused on leader characteristics such as gender, size, and intelligence (Kenny and Zaccaro, 1983; Potter and Fiedler, 1981; Stogdill, 1948; Worchel, et al 1998). However, this research was not very successful. Then, research turned to the behavior of the leader. McGregor (1960) developed the X and Y theories. Likert (1961) developed a continuum of four leadership styles, while Blake and Mouton (1964) developed a grid of five main styles: autocratic, paternalistic, democratic, collegial. Finally, Hersey and Blanchard (1982), Vroom and Yetton (1973) as well as House (1971) show that the elements of a situation often influence the choice of the leader and his style (Labelle and Jacquin 2018, p 182).

2.4.2 KNOWLEDGE MANAGEMENT AND LEADERSHIP

The role of leadership in knowledge management (Batista, 2012; Forcadell and Guadamillas, 2002) and innovation processes (Drucker, 2001; Terra et al., 2012; Abdolmaleki et al., 2013) is crucial. Several authors agree with this statement. That said, the Leadership dimension attempts to understand this relationship in this research.

We can first ask whether there are innovations without leadership. there is no innovation without leadership. According to (Szezerbicki, et al.,2003), the existence of leaders who can put feelings and ideas into practice and turn them into concrete results for the organization is very important. Leaders such as Steve Jobs, Henry Ford, Jack Welch, Jeff Bezos, or Bill Gates, are illustrations of this. It is hard to imagine what Apple, Ford, General Electric, Amazon.com or Microsoft would look like without these motivational and visionary leaders (Neves, 2017, p 156).

According to Donate and Sanchez De Pablo (2015) found that knowledge-oriented leadership positively affected knowledge management's success. Similarly, (Akram et al., 2019) showed that empowering leadership enhanced the relationship between various knowledge management practices, contributing to knowledge management success.

In a team context, Jiang and Chen (2018) showed that transformational leadership can provide the right kind of environment and encouragement required for knowledge management success. There is substantial evidence indicating that leadership plays an important role in knowledge management's overall success within organizations (Akram et al., 2019; Rao Jada et al., 2019; Singh et al., 2019; Shahnawaz and Halil, 2020).

Lakshman (2007) points out that from all perspectives on leadership – such as the trait approach, behavioral approach, contingency approach, transformational approach and charismatic approach – leadership can be viewed as impacting knowledge management within organizations. Similarly, social exchange theory suggests that how these managers interact and set the stage related to knowledge management can impact its success (Kulkarni et al., 2006). Leaders supportive of knowledge management can facilitate the structural, relational, and cognitive aspects necessary not only for promoting knowledge sharing but also for broader knowledge management success within organizations (Jiang and Chen, 2018).

- ✓ The leader must reinforce the vision and strategies of knowledge management that must be consistent with the overall goals of the organization;
- ✓ The leader is responsible for the allocation of financial resources ensuring the improvement of processes, products, and services;
- ✓ The leader is responsible for the allocation of financial resources to ensure the improvement of processes, products, and services;
- ✓ The leader is responsible for setting up a policy.

The various theoretical arguments and empirical studies presented previously allow us to deduce the third hypothesis: ***“There is a positive relationship between the Management Leadership and Knowledge Management implementation at Abdelmalek Essaadi University from the point of view of teachers researchers”.***

2.5 INFORMATION TECHNOLOGY

Information and communication technologies refer to all techniques used in the processing and transmission of information, mainly computers, the Internet, and telecommunications.

By extension, it also refers to the economic sector of information and communication technologies. Although old, the term technology has begun to be studied seriously as a systematic and formalized field since production techniques have become more complex.

Information Technology (IT) can be defined as the set of activities and solutions related to computer resources. IT is the "hardware-software" package dedicated to the creation of Information Systems (IS) (Balarine, 2002). IT and IS are used by individuals and organizations to support environmental change. They are used by organizations to increase production, improve products and services, and outperform competitors (Rossetti and Morales, 2007).

2.5.1 INFORMATION TECHNOLOGY AND KNOWLEDGE MANAGEMENT

Effective knowledge management (KM) requires the appropriate use of organizational strategies as well as information technology (IT) has greatly boosted knowledge management through the implementation of KMS. IT services supporting knowledge management include database decision support systems, enterprise resource planning systems, expert systems, management information systems, lessons learned systems, etc. In addition, social mechanisms also support knowledge management. On-the job training, observational learning, face-to-face meetings, mentoring for knowledge sharing, and employee rotation between departments are examples of such mechanisms.

Technology has greatly enhanced the ability of organizations to foster the exchange of information between individuals. Information Technology (IT) has long played a fundamental role in the management of organizations. Initially, the objective was to automate business processes, the simplest tasks that support daily activities. But, today the role of IT is mostly strategic (Laudon and Laudon, 2007; Kang et al., 2012).

New information and communication technologies can play a strategic role in improving organizational performance and enabling the development of sustainable competitive advantages. Indeed, the role of IT in organizations has evolved from a departmental activity to one that encompasses the entire organization. Hundreds of organizations are using IT as a competitive differentiator, such as Bradesco Bank S.A., Amazon.com, and FedEx. It is fair to say that without new information and communication technologies, KM would not be at the advanced stage it is today. Without them, the socialization and formalization of knowledge would be almost impossible in organizations (Szezerbicki et al., 2003).

The main factors identified related to information technology that can foster KM are the following (Ansari et al., 2012, p.216; Cong 2008, p.115; Cong and Pandya 2003, p.31; Ikhsan and Rowland, 2004, p.102):

- ✓ A technological infrastructure for access and sharing;
- ✓ Access to applications ;
- ✓ Technological know-how.

The various theoretical arguments and empirical studies presented previously allow us to deduce the fourth hypothesis: *“There is a positive relationship between the Information Technology and Knowledge Management implementation at Abdelmalek Essaadi University from the point of view of teachers researchers”*.

2.6 RESEARCH MODEL

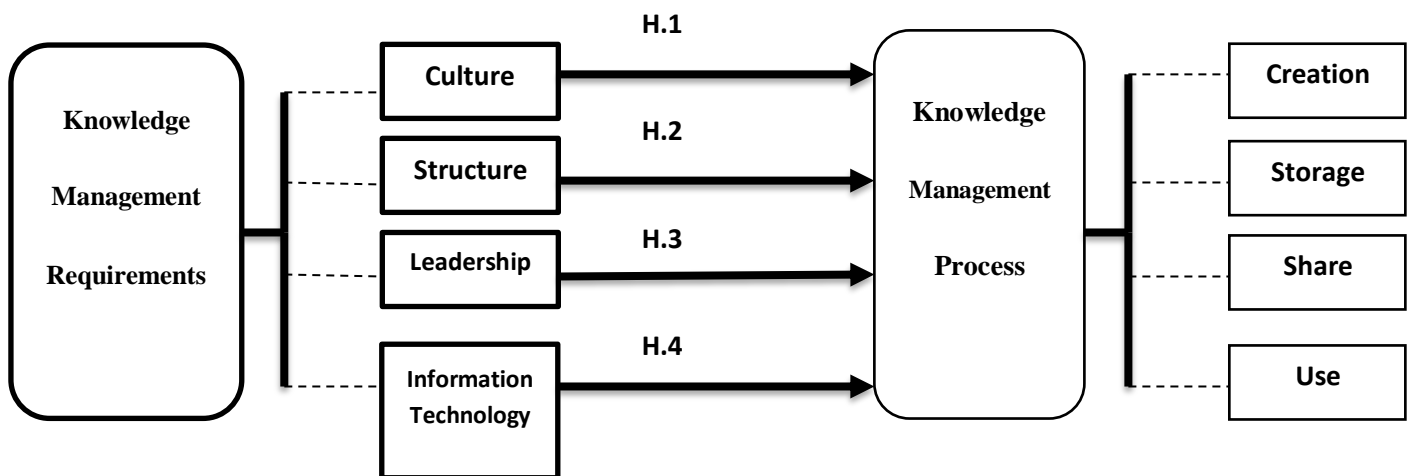


Fig -1: Research model

3. RESEARCH METHOD

3.1 METHODOLOGICAL CHOICES

Our research is influenced by the inscription of our work in an adequate epistemological paradigm according to the conceptual framework, the hypotheses, the objectives, and the relationship between the variables.

In order to be precise, we will respond to all the points mentioned above which summarize our epistemological framework and our methodological choice through the table below.

Table -1: Epistemological framework and methodological choices

Methodological axis	Our choices
The epistemological paradigm	The postpositivism
The current of thought	Scientific realism
The reasoning process	The hypothetical-deductive approach
The working method	It will be quantitative
The empirical method of work	The Survey
Data collection tool	The questionnaire

3.2 STUDY SIMPLE

We administered a questionnaire to a representative sample of 88 teachers-researchers from the various institutions of A.E.U, the survey was done between September and October 2020. It seems necessary to us at this point to present an analysis of the sample of our study. First, we present our sample size calculation:

Table -2: Sample size calculation

Population size	Confidence level	Margin of error	Formula	Our simple size
1000 Teachers –researchers	95%	10%	$n = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)}$	N = 88 Teachers – researchers.

3.3. CONTENT VALIDITY

In order to ensure the content validity of our questionnaire, we followed the steps below: First, we conducted extensive research on the topic and then specified the structure of the field under study. Then we consulted specialists in the field of knowledge management and management control, primarily teachers and practitioners, and finally, we made the necessary corrections, we eliminated almost 20 questions and reworded a number of questions to finally have a questionnaire that was valid in terms of content.

3.4 ANALYSIS OF QUESTIONNAIRE RELIABILITY

To address the issue of the reliability of the questions asked in a test, we calculated Cronbach's alpha coefficient. The table below shows the value of the coefficient for all chapters of our research using SPSS:

Table -3 : Questionnaire reliability

Study Variables	Chapter	Cronbach's alpha coefficient
Creation	1-4	0.822
Storage	5-8	0.838
Share	9-12	0.784
Use	13-16	0.971
Knowledge Management	1-16	0.957
Organizational Culture	17-20	0.906
Structure	21-25	0.736
Leadership	26-30	0.815
Information Technology	31-35	0.712
K.M requirements	36-40	0.891

From the data in the table above we notice that the value of Cronbach's alpha for all chapters in our research is between 0.784 and 0.971.

Therefore, these values are well above 0.7 which confirms the internal consistency and reliability of our questionnaire.

4. RESULTS

4.1 DESCRIPTIVE STATISTICS

4.1.1 DESCRIPTIVE RESULTS FOR KNOWLEDGE MANAGEMENT PROCESS

For the present research, we were interested in measuring the degree of application of knowledge management (creation - storage - sharing - use). For this we proceeded to the calculation of the averages, the standard deviations and the value of T Student as shown in the following table:

Table -4: Descriptive results for knowledge management operations

K.M Implementation	μ	σ	T	Level
Knowledge creation	2,23	1,05	19,84	Low
Knowledge storage	2,07	1,33	14,65	Low
Knowledge sharing	2,71	0,98	25,88	Medium
Knowledge use	2,12	1,14	17,54	Low
Overall average	2,29	1,12	19.48	Low

The T value in the table = 1.96, with a significance level of $\alpha=0.05$, and a mean level between (2.34 and 3.67)

It appears from the previous table that the average score of the application of the (K.M) is established at a value equal to 2.29 on a continuum ranging from a minimum of 2.07 to a maximum of 2.71. This leads us to believe that the operations of the Knowledge Management process at the level of the different institutions of Abdelmalek Essaadi University are of modest quality according to the respondents.

On the other hand, we note that the standard deviation is low compared to the average which reflects a small disparity and a great homogeneity between the university institutions of the AUE in terms of the quality of their process. About the values of T of Student, we notice that the values of T calculated for the whole of the operations of K.M is largely superior to the value of T of the table (1.96) for a threshold of significance $\alpha < 0.05$ which proves the significance of the results to a threshold of $\alpha < 0.05$.

In accordance with our predictions, these obtained results clearly illustrate the lack of K.M at the level of the different institutions of Abdelmalek Essaadi University from the point of view of research teachers.

4.1.2 DESCRIPTIVE RESULTS FOR ORGANIZATIONAL CULTURE

Table -5: Descriptive results for organizational culture

Organizational culture	μ	σ	Level
The culture of the institution encourages teachers to generate new ideas.	2,09	0,79	Medium
The institution provides events that help teachers learn new knowledge.	2,00	0,85	Low
Les valeurs et les croyances qui circulent à l'établissement permettent de considérer les erreurs comme sources d'apprentissage.	1,81	0,57	Low
In the institution, there is a philosophy of promoting collective action for the exchange of ideas and experiences.	1,80	0,83	Low
The culture of the institution motivates teacher-researchers to develop their skills and translate them into knowledge.	1,72	0,86	Low
Overall average	1,89	0,67	Low

The T value in the table = 1.96, with a significance level of $\alpha=0.05$, and a mean level between (2.34 and 3.67)

The analysis of the results in the above table, allows us to see that the existing organizational culture at the level of the different institutions of Abdelmalek Essaadi University does not favor knowledge management application initiatives.

In accordance with our predictions, these results confirm the absence of an organizational culture conducive to the application of knowledge management at the different institutions of Abdelmalek Essaadi University from the point of view of teachers.

4.1.3 DESCRIPTIVE RESULTS FOR ORGANIZATIONAL STRUCTURE

Table -6: Descriptive results for organizational culture

Organizational structure	μ	σ	Level
At the university, the relationship between the president and the subordinates is based on cooperation.	2,45	0,65	Medium
At the institution, there is a decentralization of work, which offers the possibility of sharing knowledge among teachers.	2,09	0,90	Low
The organizational structure of the institution is flexible, which allows the assimilation of environmental variables internally and externally.	2,00	0,60	Low
The organizational structure of the institution allows for the flow of knowledge between departments in both vertical and transversal ways.	1,90	0,90	Low
The structure of the institution facilitates the process of staff turnover, which contributes to knowledge transfer.	1,72	0,75	Low
Overall average	2,03	0.54	Low

The T value in the table = 1.96, with a significance level of $\alpha=0.05$, and a mean level between (2.34 and 3.67)

The results from the above table show that the existing organizational structure at the level of the different institutions of Abdelmalek Essaadi University is not conducive to K.M implementation initiatives.

4.1.4 DESCRIPTIVE RESULTS FOR MANAGEMENT LEADERSHIP

Table -7: Descriptive results for Management leadership

Management leadership	μ	σ	Level
The university administration presented by these leaders can influence the faculty.	2,54	0,99	Medium
The university administration integrates officials at all levels in the construction of decisions.	2,18	0,83	Low
The university administration encourages faculty members to present their ideas and proposals.	2,19	0,83	Low
University administration practices fairness in incentives and rewards among faculty.	2,09	0,79	Low
The administration provides faculty with opportunities for continuous learning and development.	1,72	0,86	Low
Overall average	2,14	0,65	Low

The T value in the table = 1.96, with a significance level of $\alpha=0.05$, and a mean level between (2.34 and 3.67)

The above table shows that the style of leadership presented at the level of the different institutions of the U.A.E. does not favor the initiatives of K.M implementation.

4.1.5 DESCRIPTIVE RESULTS FOR INFORMATION TECHNOLOGY

Table -8: Descriptive results for Information Technology

Information Technology	μ	σ	Level
The university has a general Internet access service for all teachers.	2,63	1,15	Medium
The existing IT infrastructure at the university provides an internal information network to access databases (computers, archiving systems).	2,39	0,88	Low
The university is committed to organizing electronic forums that contribute to the documentation and exchange of knowledge.	2,36	0,98	Low
The university has an electronic infrastructure that contributes to the holding of remote meetings and teleconferences.	2,09	0,79	Low
The administration has an electronic library that allows teachers to take advantage of it.	2,00	1,21	Low
Overall average	2,29	0,51	Low

The T value in the table = 1.96, with a significance level of $\alpha=0.05$, and a mean level between (2.34 and 3.67)

According to the above results, we notice that the information and communication technologies as a success factor of the retained knowledge management register a level between medium and low according to the respondents.

4.2 HYPOTHESES TESTING

4.2.1 TESTING THE FIRST HYPOTHESIS

In order to test the central hypothesis of this work, a regression analysis was carried out using SPSS software. Through the calculation of the correlation coefficients, r , and the level of significance and the table below shows the results obtained.

Table -9: Correlation coefficient between organizational culture and KM

Axis	Correlation coefficient	Sig
K.M * organizational culture	0.712	0.001

From table 9, we notice that the Pearson correlation coefficient value $r = 0.712$ confirms the positive relationship between organizational culture and KM at the different institutions of Abdelmalek Essaadi University from the point of view of teacher-researchers with a level of significance α less than 0.05

4.2.2 TESTING THE SECOND HYPOTHESIS

Table -10: Correlation coefficient between organizational structure and KM

Axis	Correlation coefficient	Sig
K.M * Organizational Structure	0.576	0.000

From table 10, we notice that the Pearson correlation coefficient value $r = 0.576$ confirms the positive relationship between organizational structure and KM implementation at the different institutions of Abdelmalek Essaadi University from the point of view of teacher-researchers with a level of significance α less than 0.05.

4.2.3 TESTING THE THIRD HYPOTHESIS

Table -11: Correlation coefficient between Management leadership and KM

Axis	Correlation coefficient	Sig
K.M * Management leadership	0.635	0.000

From Table 11. we notice that the Pearson correlation coefficient value $r = 0.635$ confirms the positive relationship between leadership and (KM) at the different institutions of Abdelmalek Essaadi University from the point of view of teacher-researchers with a level of significance α less than 0.05.

4.2.4 TESTING THE FOURTH HYPOTHESIS

Table -12: Correlation coefficient between Information Technology and KM

Axis	Correlation coefficient	Sig
K.M * Information technology	0.554	0.001

From Table 12. we notice that the Pearson correlation coefficient value $r = 0.554$ confirms the positive relationship between Information technology and (KM) at the different institutions of Abdelmalek Essaadi University from the point of view of teacher-researchers with a level of significance α less than 0.05.

5. DISCUSSION AND PROPOSITIONS

5.1 DISCUSSION FOR KNOWLEDGE MANAGEMENT OPERATIONS

The results from the descriptive analysis, lead us to believe the lack of (K.M) implementation at the level of different institutions of Abdelmalek Essaadi University, concerning all operations (creation, storage, sharing, and use of knowledge), Moreover, our results are found to be consistent with a range of empirical research. In this regard, Ibaltaji (2014), based on a sample of 400 public servants between teachers and administrators at almanofia university in Egypt, concluded with the same results. In the same vein, Al-Mudallal (2012), reaches a low degree of K.M practice at the level of the first ministry in Jordan from the point of view of the officials of this entity.

However, this result is in contradiction with the one reported by the study of al-ega and Firas (2012), conducted in the Palestinian context, on a sample of 250 academic managers of al-Quds University and concludes on an average level of application of knowledge management operations.

5.2 DISCUSSION AND PROPOSITIONS FOR ORGANIZATIONAL CULTURE

The results of the descriptive analysis reflect the presence of an unfavorable organizational culture for knowledge management implementation in the various UAE institutions from the perspective of the teachers. These results are in line with those of Frey et al (2009) who were able to identify the positive

from the perspective of a sample of 495 participants.

This evidence push these university leaders to provide more effort to improve the KM culture within Abdelmalek Essaadi University through:

- ✓ The promotion of values and beliefs that allow considering mistakes as sources of learning;
- ✓ The support of a philosophy of promotion of collective action for the exchange of ideas and experiences;
- ✓ Motivating teacher-researchers to develop their skills and translate them into knowledge.

5.3 DISCUSSION AND PROPOSITIONS FOR MANAGEMENT LEADERSHIP

The results collected using the hierarchical multiple regression prove the validity of our hypothesis on the presence of a positive moderating role of leadership on the relationship between K.M implementation and organizational performance of Abdelmalek Essaadi University from the point of view of teachers researchers.

These results coincide with the results obtained by other researchers including the study of (Parent, 2019), which concluded on the positive link between strategic leadership and organizational performance of the three dance schools in Quebec.

Also, the work of (Subram et al 2018) showed the existence of a strong positive and statistically significant link between the development of leadership practices and organizational performance via human capital through 1000 organizations in India.

And the work (Tang, 2012) on 300 Chinese companies in the city of SHANGAI, the results of this study showed a positive correlation between the leadership style and the performance of project teams and subsequently the performance of the organization.

these results coincide with the findings of the study conducted by Donate and Sanchez De Pablo (2015) which found that knowledge-oriented leadership positively affected knowledge management success. Similarly, Akram et al.,(2019) showed that empowering leadership enhanced the relationship between various knowledge management practices, contributing to knowledge management success.

Also, Jiang and Chen (2018) showed that transformational leadership can provide the right kind of environment and encouragement required for knowledge management success. There is substantial evidence indicating that leadership plays an important role in knowledge management overall success within organizations (Akram et al., 2019; Rao Jada et al., 2019; Singh et al., 2019; Shahnawaz, and Halil, 2020; Boussenna, 2021).

On the other hand, our results disagree with the results obtained by (Al Talbani et al., 2015) that records a high level of presence of factors (culture, structure, leadership, and ICT) facilitating the application of knowledge management at the level of all universities in the Gaza Strip in Palestine from the point of view of 241 participants between administrators and teachers.

This result leads the university leaders to provide more effort to improve the quality of management Leadership at Abdelmalek Essaadi University through:

- ✓ The integration of teachers at all levels in the construction of decisions;
- ✓ The encouragement of teacher-researchers to present their ideas and proposals;
- ✓ The practice of fairness in incentives and rewards among faculty researchers.

5.4 DISCUSSION AND PROPOSITIONS FOR INFORMATION TECHNOLOGY

These results coincide with our previous research on the moderating effect of Human, organizational and technical factors such as (leadership, culture, organizational structure, and information technology) on the relationship between KM and organizational performance in the university context (Boussenna, 2021; Boussenna and El kharraz ,2021, a,b,c,d).

Similarly, the results obtained coincide with the results obtained by other researchers including the work of (Salama, 2020), which confirms the direct impact of the availability of K.M infrastructure on the performance of the education sector in Libya from the point of view of 612 staff of the same sector.

(Cardona et al., 2013; El Idrissi, 2010, Melville et al., 2004) assert that organizations seek to create value by implementing information systems that generate tangible and intangible gains. To do this, they continue to invest in information systems to improve their performance and generate results.

Note that several Researchers have identified the positive impact of information technology (IT) artifacts to support the creation, storage, retrieval, transfer, and application of knowledge in organizations (Ansari et al. 2012; Cong, 2008; Cong and Pandya, 2003; Ikhsan and Rowland, 2004).

In addition, information technologies support KM strategies and operations (Stankosky, 2005) or have been viewed as an enabler for KM (Arntzen et al., 2009; Gill, 2009; Eftekharzade and Mohammadi, 2011; Ramachandran et al., 2013), knowledge creation (Tian et al., 2009) and knowledge sharing (Fullwood et al., 2013) in higher education.

These results lead the university leaders to provide more effort to improve the information technology infrastructure at Abdelmalek Essaadi University through:

- ✓ The involvement of the university in the organization of electronic forums that contribute to the documentation and exchange of knowledge;
- ✓ The presence of an electronic library allows teachers- researchers to take advantage of it.

5.4 DISCUSSION AND PROPOSITIONS FOR ORGANIZATIONAL STRUCTURE

Also, the results obtained in table: 8 clearly indicate that the current organizational structure at the level of different institutions of Abdelmalek Essaadi University from the point of view of teachers is not suitable for KM implementation at the university.

Note that these results coincide with the findings of the study conducted by (Ghorbani et al.,2011) which proves the relationship between knowledge management and organizational structure at the level of the Iranian ministry of education from the point of view of 90 officials.

Therefore, the managers of Abdelmalek Essaadi University institutions are led to improve the current organizational structure to be adequate for the application of knowledge management through:

- ✓ Decentralization of work, which offers the possibility of sharing knowledge among teachers-researchers;
- ✓ the circulation of knowledge between departments in a vertical and transversal manner;
- ✓ staff turnover, which contributes to knowledge transfer.

5.5 TEST OF THE THEORETICAL MODEL

Figure 2 below presents the results confirming the positive relationship between our variables (Pearson's correlation coefficient is greater than 0.5 for all relationships between variables). This validates all hypotheses of this research and proves the validity of our hypothetical research model:

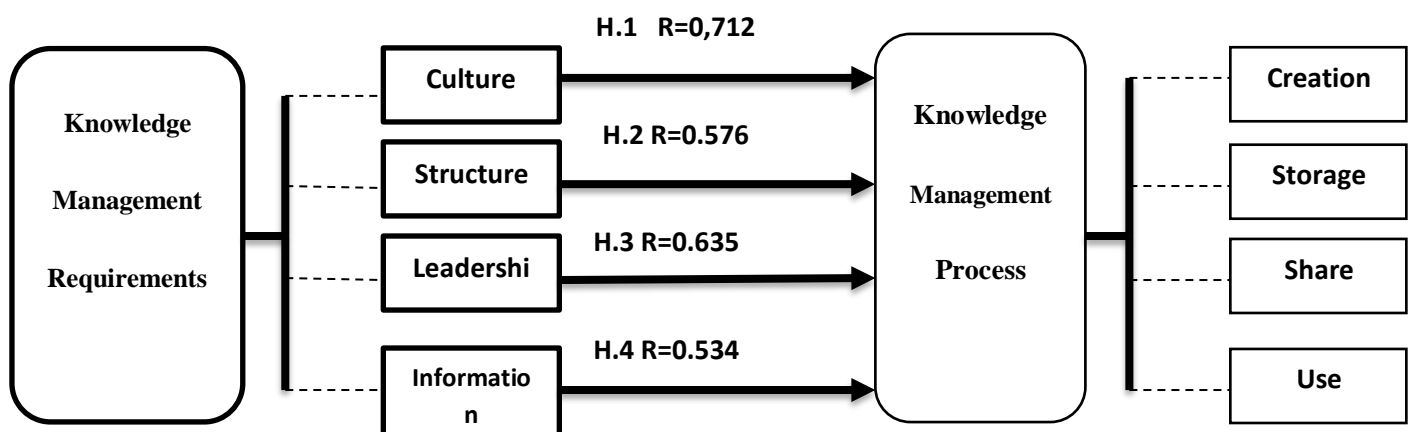


Fig -2: Test of the theoretical model

6. CONCLUSION

This research represents a small intervention in a vast field that attracts a growing number of researchers in knowledge management, performance management, and strategic management.

The objectives of this work were to study, first of all, the reality of knowledge management in Moroccan universities, by taking up the theory of the knowledge-based firm (KBV). Furthermore, we extended this conception by integrating the contingency theory linking the success of knowledge management to organizational, technical, and human factors encompassed in the organizational culture, structure, management leadership, and information technology.

The results obtained globally confirm the causal structure of the research model, which remains consistent with our previous similar studies (Boussenna, and El Kharraz, 2021, a,b,c,d.).

- ✓ A strong correlation between the factors (Culture, Structure, leadership and, Information Technology) and the knowledge management process.
- ✓ The absence of technical, human, and organizational infrastructure is conducive to the application of the knowledge management process within Abdelmalek Essaadi University.

The scientific contributions of this research are in three forms: theoretical, methodological, and empirical.

At the theoretical level, this work has the particularity of combining, in all complementarity and affinity, several theories, such as the theory of the “Knowledge-Based View” (Kogut and Zander, 1992; Spender and Grant, 1996), the contingency of the theory (Fiedler, Lawrence, and Lorsch, 1967) and the stakeholder’s theory (Freeman, 1984), which has allowed this work to address all the contours of our problematic.

We mainly drew the methodological contributions of this research from the empirical phase. The latter offers originality in the study of knowledge management at the level of public organizations and, more precisely, universities using a quantitative approach.

On the managerial level, the anchoring of our research in the Moroccan context represents the first contribution, since we bring enlightenment on a phenomenon that has been the subject of only a few explorations before, and this in spite of the importance of the problematic, secondly by using its results, this study put forward the need to apply the practices of the management of knowledge by the Moroccan universities with an aim of reaching a durable competitive advantage on the international university market.

Regarding the limitations, conceptually we have based ourselves on four success factors of K.M, while there are other factors of equal importance such as (knowledge strategy, availability of resources, and employee motivation...). For the methodological limits, our research has mobilized the questionnaire. This traditional tool has its limitations, even if they do not call into question the fundamental results obtained.

Another limitation relates to the size of the sample of teachers interviewed. Indeed, the sample was relatively small, with 88 teachers chosen from among 1000 at Abdelmalek Essaadi University. Even though a scientific approach was used to determine the margin of error and the level of confidence.

Finally, it is necessary to stress that this research has important implications for Moroccan universities. The confirmation of the hypotheses of our work reminds us that each university must define its strategy based on better knowledge management as a cornerstone of any action aiming at excellence and organizational performance, and the improvement of its competitiveness at the international level.

Moreover, our research constitutes a line of thought for researchers wishing to strengthen studies related to knowledge management in the university environment, especially at the national level.

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