

# Trust and its link with the knowledge management systems

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**Abstract**— Knowledge Management (KM) has become a popular area of research under the influence of the work of Nonaka and Takeuchi. The success of KM is mainly due to the investment of an individual along with his or her rational for participating in a collective process that can sometimes seem to be a form of knowledge interest. Such an approach cannot be implemented in a climate of mutual trust. Therefore, organizations are struggling to survive and compete. One of the strategies employed in these organizations is knowledge management (KM) with the support of Knowledge.

**Keywords**— *knowledge, knowledge management (KM), knowledge management system (KMS), confidence*

## I. INTRODUCTION

The Organizations are struggling to survive and compete. One of the strategies employed in these organizations is knowledge management (KM) with the support of Knowledge Management System (KMS). They help the company make the decision to share and transfer knowledge. In fact, the effectiveness of KMS is intended to help companies achieve sustainable competitive advantage by using the existing knowledge base. [1] The benefits of KMS were observed, in many companies. However, it is not easy to successfully adopt KMS [2].

In fact, our problem is controversial because an overview of recent literature on strategic management, allows us to notice a lack of research studies on knowledge management systems that is, without doubt, a major source of competitive advantage.

So, this provided a good opportunity to answer the following basic question: What are the links between trust and

success of knowledge management systems in Tunisian companies? To do this, we have used the work of several authors such as the references [3], [4].

To answer this question, this research has three main objectives:

- To study the determinants of the successful knowledge management systems.
- To develop a conceptual model that illustrates the existence between the satisfaction of the use of knowledge management systems and their successful relationships.
- To test the model in the Tunisian companies.

To achieve these objectives, this study is built around a central hypothesis according to which confidence in the use of knowledge management systems has a positive effect on its success.

## II. REVIEW OF THE LITERATURE

### A. Defining concepts

Prior to a study of the concept of knowledge management itself, it should first of all focus in depth on what knowledge is more considered today and in the course of Knowledge - Based View as a key and a strategic resource for companies [5].

The abundant literature on the subject shows that it is crucial to better understand what knowledge is and to distinguish it from the notion of information [6]. Information is a tool or material to discover and construct knowledge. Thus, "information is a flow of messages, while knowledge is created and organized by the very flow of information, anchored on the commitment and conviction of its holder"[7].

Knowledge management can be defined as the systematic and organized actions that a company makes for a more

valuable knowledge available to it [8]. For some, knowledge management is an "organizational process for acquiring, structuring, integration and dissemination of knowledge of individuals throughout the organization to provide assistance and work to increase organizational effectiveness "[9]. In other words, it's all organized and systematic actions that a company makes for a more valuable knowledge available to it [8].

Also, KMS is a very broad concept and encompasses a range of systems that differ in many respects [10], [11].

To narrow the field, researchers have consulted a number of categorization schemes KMS [10], [11], [12]. In the authors' opinion, [13] and [12], is that the system is used to facilitate the exchange of knowledge: The system is based mainly on documents stored in some kind of repository or should we provide facilities by which the respective parties can "Meet" (even if virtual) and the exchange of knowledge in a real-time or semi real-time way? [12] "The integrative focus KM repository and it contains explicit knowledge as the primary means of knowledge exchange applications." And "Interactive applications especially KM support interaction between people to facilitate the exchange of tacit knowledge" [12].

Then, a system of knowledge management can be defined as a technology platform whose mission is to support the whole process of knowledge management [14]. Therefore, the knowledge management system can therefore be divided into subsystems each having a vocation [10].

### B. Conceptual framework of the research

#### 1) Determinants of the success of the knowledge management systems: development of a conceptual model

A review of the literature is necessary to identify the determinants of the success of knowledge management systems. Knowing these determinants allows the organization to facilitate the work of those responsible for the implementation of the technology by helping them minimize the risk of failure of technology project.

Social determinant: trust

Trust is considered an important factor influencing the success of the system of knowledge management. Other research has shown that trust plays an important role in the use of the system of knowledge management and also it has been shown to be a factor contributing to the satisfaction of the system [10]. As part of this, [15] considers that satisfaction with past performance is a determinant of trust. But the relationship Trust - satisfaction is far from unanimous among authors. While some argue that "satisfaction is an important source of trust" [16], others postulate that it is the trust that is a determinant of satisfaction [17], [18], [19].

Trust is an essential part of knowledge sharing. The owners prefer to share knowledge within a controllable, trusted group under the conditions negotiated for the specific situation and partners.

Reference [20] showed that there are two dimensions of credibility: skill, which is the extent to which a communicator is perceived as a valuable source of affirmation, and reliability, which refers to the degree of confidence in the intention of the communicator to communicate the statement he considers most valuable.

H1: There is a positive relationship between trust and satisfaction of using a knowledge management system

#### 2) The satisfaction of using the knowledge management system

There is a need for a better approach to measure the performance of knowledge management. The latter involves internal changes in operational practices. Knowledge users are the ultimate arbiters of knowledge management practices. Thus, user satisfaction with knowledge management strategies is recognized as effective indicators for the direct measurement of the performance of knowledge management [21].

In addition, the knowledge management system helps the company make the decision to share and transfer knowledge [22]. Also, reference [23] has found that the use of the system is a factor of the knowledge management system successfully. So, reference [24] found that the satisfaction of the use of the knowledge management system has a positive influence on the use of the system, particularly in terms of its effectiveness. In addition, the satisfaction of the user can be regarded as an appropriate measure of the success of the system, because it leads to acceptance of the system [25]

The level of user satisfaction reports, websites and support services [26]. The satisfaction of users of the system taken directly from [27] and refers to the actual use of KMS and satisfaction that users in this use.

H2: There is a positive relationship between the satisfaction of the use of knowledge management system and its success.

So from these explanatory variables, these variables to explain and links between them, test our conceptual model will be presented as follows:

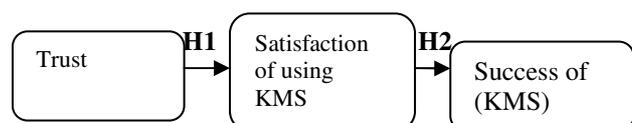


Fig. The conceptual research model

The presentation of the methodology for analyzing the most appropriate data to test our model and the results obtained are presented in the following paragraphs.

III. DESCRIPTION AND OPERATIONALIZATION OF VARIABLES

A. Social determinant

- Trust

We selected for the measurement of the variable "social determinants, confidence and items that we have chosen are as mentioned below (Table 1). The measurement of this variable will be made through a Likert scale of 5 points.

We asked respondents to assess the KMS trust in their business, choosing the most suitable position.

TABLE 1  
ITEMS MEASURING "TRUST"

Explanatory variable	Items	Author
Trust	I am convinced that this knowledge is correct.	Meng-Hsiang Hsu and al. (2007)
	I am sure that this knowledge is right.	
	I have no doubt that this knowledge is accurate.	
	You believe in everything you use in the KMS.	Nantapanuwat N, and al. (2010)

B. The satisfaction of using the KMS

The above items were selected with reference to references [28], [29] and [3]. The majority of items was measured on a Likert scale of 5 points. Respondents will indicate their perception of satisfaction using the knowledge management system.

TABLE 2  
ITEMS MEASURING THE SATISFACTION OF USING KMS

variable	Items	Author
The satisfaction of using the KMS	You are satisfied with the efficiency of KM	Nantapanuwat N., and al. (2010)
	You are satisfied with the effectiveness of KMS.	
	You are convinced that the KMS confuses your knowledge and treatment information to my needs.	
	You effectively use the system in your area of responsibility.	Tanya McGill and al. (2003 Nantapanuwat N., and al. (2010)
	On the whole you are satisfied with KMS.	

C. The success of the knowledge management system

To measure this variable, we used various items measured by a Likert scale of 5 points according to the degree of agreement. Respondents will indicate their perception of the success of the system of knowledge management.

TABLE 3  
ITEMS MEASURING THE SUCESS OF KMS

variable	Items	Author
The sucess of the system	KMS helps me to acquire new knowledge and innovative ideas.	Nantapanuwat N., et al. (2010)
	KMS helps me to efficiently manage and store the knowledge that I need.	
	KMS enable me to accomplish tasks more efficiently.	
	KMS improves decision making.	
	KMS improves the quality of my professional life.	

D. Data collection

We will present a description of the data in terms of sector, region and size.

TABLE 4  
SAMPLE DISTRIBUTION BY SECTOR OF ACTIVITY

Sector of activity	Number	percent age
financial	7	7,3%
Industrial	52	54,2%
Commercial	25	26,0%
Service	12	12,5%
Total	96	100,0

These results indicate that the majority of companies interviewed are belonging to the industrial sector 54.2%. While 26% and 12, 5% of organizations are interested in investing for the sectors of trade and service. And only 7, 3% of firms belong to the financial sector.

TABLE 5  
SAMPLE DISTRIBUTION BY SIZE

Company size	Number	Percentage
Less than 10	22	22,9%
11- 50	44	45,8%
51- 100	12	12,5%
More than 100	18	18,8%
Total	96	100,0

According to this classification, we find that firms that are small constitute 45.8% of all surveyed firms, while large firms cover a percentage of 18.8%. Thus, the medium-sized companies cover a percentage of 12.5%, while smaller ones make up 22.9% of the sample.

*C. The analysis and interpretation of the results of the linear regression*

In our study, we found that the linear regression as the method of analysis of the most appropriate data. The most common combination measures are those which correspond to two variables with the same levels of measurement (metric / metric) [30].

All data are in the form of a matrix of values for the dependent variable (y) and the explanatory variables (x1, x2... xn). The regression is a linear relationship between the dependent variable and the explanatory variables. The desired relation is of the form:

$$y = x_1 + \beta_1 \text{ where } \epsilon$$

n: the number of explanatory variables

$\beta_i$ : standardized regression coefficient as  $-1 < \beta_i < 1$

$\epsilon$ : the weight of the residual variance (the error term expressing the effect of variables not taken into account).

In what follows, we will present the results of linear regression relating to test hypotheses.

*1) Testing the dimensionality of measurement scale of the variable "Trust"*

The determinant of the matrix (0.000 equal to 0) and the value of KMO (0.605 < 0.7) show the non-integrity between the items. Also, Bartlett's test indicates that displays all variables are dependent on each other ( $p = 0.1 > 0.05$ , chi-square = 125.469). All msai are greater than 0.5.

All these indicators show that the data can be subjected to the method of factor analysis.

The ACP items invalidate the existence of a single factor explaining the total variance of the original data. Factorial contributions are negative and less than 0.7. They don't confirm the dimensionality of this construct. Furthermore, the quality of representation for each item is not adequate (<0.5).

*2) Testing the dimensionality of measurement scale of the variable "satisfaction of using the system"*

We recall that the scale of measuring the satisfaction of using the system is composed of 3 items. The results of the factor analysis are not satisfactory, since KMO = 0.326. Thus,

Bartlett's test shows a chi-square = 207.440 and  $p = 0.5$ . Similarly the determinant is zero.

Thereafter we proceeded to the extraction of components. Thus we end up with an unsatisfactory solution of a single factor with less than a specific value, or 0.661.

*3) Testing the dimensionality of measurement scale of the variable "success of the system of knowledge management"*

The factor analysis shows that the data matrix of the scale for measuring the degree of acceptance is:

\* KMO = 0, 450 is less than 0.5.

\* Bartlett's test indicates that all variables are completely dependent on each other ( $p = .01 > 0.05$ , chi-square = 266.019).

MSA \* values are all less than 0.5.

The percentage of the information collected by this factor is low at about 30.423%. The correlations of these items with this factor vary from 0.219 to 0.452. These correlations are

used to interpret the role of each variable (item) in the definition of each factor. The higher the weight, the higher the variable is only representative of the factor. Therefore, the choice of these items is not acceptable because these correlations are low. These results are appreciated advantage of Cronbach alpha value of 0,494, which is not considered good.

4) *The positive relationship between trust and satisfaction of using a system of knowledge management (H1):*

Table 5 shows that "trust" has a beta that is: Confidence; beta = .003; \*\* p = 0.006 > 0.005

TABLEAU 6  
TRUST

Variables to explain explanatory variables	satisf
conf	,003
Coefficient of determination	,000
Coefficient F of Fisher	,01
Signification of F	,006

\*\*\*p<0,01 \*\*p<0,05 \*p<0,1

In other words, there is a positive relationship between trust and satisfaction of using a system of knowledge management. The H1 hypothesis is not accepted.

5) *The positive relationship between the satisfaction of the use of knowledge management system and its success (H2)*

The results of the linear regression on the hypothesis H2 are shown in the above table:

TABLE 7  
SATISFACTION OF USING THE KMS

\*\*\*p<0,01 \*\*p<0,05 \*p<0,1

Variables to explain Explanatory Variables	Succe
satisf	-,030
Coefficient of determination	,002
Coefficient F of Fisher	1,391
Signification of F	,565

In this model, the percentage of variance explained is low 2.5%. Also the estimated regression coefficient is not significant and negative ( $\beta = -40$ ,  $p = ,695 > 0.1$ ). So we can conclude that the hypothesis (H2) stating that: "There is a positive relationship between satisfaction with the use of a system of knowledge management and its success" is not accepted.

D. Discussion of results

The objective of this section is to analyze in depth the results of the empirical study to identify the influence of satisfaction from the use of knowledge management systems on its success. So we try to approximate the results obtained in our study with those found by other studies in the literature.

After purification results, a three-dimensional system of Knowledge Management" were identified: trust, use of knowledge management systems, and satisfaction with the use of knowledge management systems.

• Trust:

By an examination of a literature review, we found that trust affects negatively the user satisfaction. Indeed, this hypothesis has not been tested in the Tunisian context.

This result is consistent with that found by references [10] and [3]. These authors showed that there is a significant relationship between these two variables. This is also supported by [31] considering user satisfaction; trust is the most important factor affecting user satisfaction.

In terms of confidence, this has little effect on user satisfaction in the Tunisian context. Confidence on the knowledge contained in the KMS and confidence in the system itself could give satisfaction and lead to the use of the system. However, since trust is based on individual perception of a certain thing, a knowledge manager will need to make additional efforts to create or influence this perception.

- The success of the use of KMS:

According to our results, the satisfaction of the use of knowledge management systems does not affect its success; in fact the results are invalidated by those works of [31] and [3].

Hypothesis testing shows that the satisfaction of using KM has a negative relationship with the success of KMS. Indeed, if employees are satisfied with the effectiveness and efficiency of the system, they will be ready to use the system. This implies that user satisfaction is a key factor on which a manager KM should pay attention. Satisfaction could be improved by focusing on the needs of users and make the service better KMS host.

## VI. CONCLUSIONS

The analysis and the main conclusion derived from this study is likely to make a real contribution to the entire scientific community on two levels. On the one hand, on a theoretical level, this study enriches the embryonic literature on the topic of knowledge management practices in developing countries. On the other, on a practical level, this study could lead managers of companies operating in developing countries to become aware of the issue of knowledge management systems as an asset major competitive and therefore encourage these managers to devote more time and resource management practices. That is to say, to improve knowledge management systems of their businesses and motivate users to do not resist change and pay more attention to members affecting the organization. And finally, understanding the desire for change and cultural transformation of their behavior and enlist in the planning process changes.

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