

## The role of Total Quality Management in the enhancement of knowledge sharing behavior

### دور إدارة الجودة الشاملة في تعزيز سلوك تقاسم المعرفة

A. AMARNI

Dr.K. HACHEMAOUI

<sup>1</sup> University of Mascara, Algeria, [abir\\_oran@hotmail.fr](mailto:abir_oran@hotmail.fr)

<sup>2</sup> University of Mascara, Algeria, [hachemaoui.kamel@univ-mascara.dz](mailto:hachemaoui.kamel@univ-mascara.dz)

Submission date: 22/03/2018

Acceptance date: 25/12/2018

Publication date: 31/12/2018

#### Abstract:

This study sets out to examine the influence of factors related to TQM (Senior Management commitment, Customer Orientation and training programs) and their roles in the development of knowledge sharing behavior (knowledge donating and collecting). Based on a survey of 102 employees from SAA insurance company in Algeria, this study applies regression analysis and correlation to test the hypotheses. The results show that only Senior Management commitment and training programs influence positively knowledge sharing behavior and then contribute to its enhancement.

- **Keywords:** knowledge sharing behavior, knowledge donating, knowledge collecting, TQM factors.

#### Résumé :

Cette étude vise à examiner l'influence des facteurs liés à TQM (engagement de la haute direction, orientation de la clientèle et programmes de formation) et leur rôle dans le développement du comportement de partage des connaissances (don et collecte de connaissances). Sur la base d'une enquête auprès de 102 salariés de la compagnie d'assurance SAA en Algérie, cette étude utilise l'analyse de régression et la corrélation pour tester les hypothèses. Les résultats montrent que seuls les programmes d'engagement et de formation de la haute direction influencent positivement le partage des connaissances et contribuent ensuite à son amélioration.

- **Mots clés :** Comportement de partage des connaissances, don de connaissances, collecte de connaissances, facteurs de GQA

#### الملخص:

تسعى هذه الدراسة لتبيان تأثير العوامل المرتبطة بتسيير الجودة الشاملة (التزام الإدارة العليا والتوجه نحو المستهلك وبرامج التدريب) ودورها في ترقية سلوك تقاسم المعرفة المتمثل في تقديم المعرفة وجمع المعرفة. الدراسة الاستقصائية التي شملت 102 موظفا من الشركة الجزائرية للتأمين. استعملنا في الدراسة تحليل الانحدار ومعامل الارتباط لاختبار الفروض. وتظهر النتائج أن التزام الإدارة العليا وبرامج التدريب يؤثر تأثيرا ايجابيا في سلوك تقاسم المعرفة وبالتالي فهي تساهم في ترسيخ معرفة وتطويرها.

- الكلمات المفتاحية: سلوك تقاسم المعرفة، تقديم المعرفة، جمع المعرفة، تسيير الجودة الشاملة.

## 1. Introduction

According to the knowledge-based view of the firm (KBV), organizational knowledge is considered as a resource that allows the company to have a sustainable competitive advantage and therefore improve its performance (Penrose, 1959 ; Wernefelt, 1984, Barney, 1991). In light of this, studies that focus on knowledge including Knowledge Management realized a significant increase. Based on the previous outlook, this area of research has gained attention over the last three decades, the authors were more interested in KM activities notably knowledge sharing.

In this context, knowledge sharing is deemed to be the most crucial as the core activities of the knowledge-centred organizations. A number of studies have been conducted to identify factors that can improve and develop knowledge sharing behavior. In this sense, the researchers cited a number of potentially effective factors. The results of research vary according to the nature of the studied environment (type of organization, industry ...). However, despite the fact that the identified factors are numerous, there is not an exhaustive list of factors that influence knowledge sharing behavior. As a result, organizations struggle to find the best factor that can be adopted to ensure their success.

It is noted that the interest accorded to knowledge sharing is increasingly growing (Cummings, 2004). Several authors have studied the factors that influence this important activity. Among these authors we highlight Ooi et al. (2012) who concluded that knowledge sharing is positively associated with training and development, customer focus and teamwork. In another study, Fong et al. (2012) investigated the relationship between knowledge sharing and human resource management practices and realized that recruitment and selection, teamwork, training and development and performance evaluation have a positive relationship with knowledge sharing. Again, another concept (Total Quality Management) reinforces and supports the sharing of knowledge (Soltani et al., 2008). However there is limited quantitative research that investigates the association between TQM factors and KS (Knowledge Sharing). A thorough review of the literature led us to identify the founding research. The role of both knowledge sharing and TQM is undeniably important within organizations. Yang (2001) argued that, organizations can benefit more from the knowledge and skills of employees when they are engaged in quality improvement, which allows employees to spread their personal knowledge within the organization more easily. Finally, Yang (2004) emphasizes that there is a strong relation between continuous improvement and reinforcement of labour force. Ju et al (2006) who studied the role of a series of TQM factors in the structure of Knowledge Management that includes the creation, storage, sharing and application of knowledge. They argue that, since the implementation of quality management as a management system is older than Knowledge Management, we can use the potentials it creates in organizations to build and strengthen the management system. knowledge. In addition, integration between the two systems enhances the strategic competence of the organization. In the same vein, Salajeghe et al (2014) studied the role of Quality Management in creating a value chain for knowledge management. The results of this study showed that there is a significant relationship between quality management and the creation of a knowledge management infrastructure. Based on this study, quality programs are effective enablers of KM. Jayawarna and Holt (2009) analyzed the relationship between knowledge creation and transformation in the R&D context. Based on their case study research, they concluded that TQM practices improve

knowledge creation and transformation. In an empirical study that was conducted by Molina et al. (2007), the relationship between TQM practices and knowledge transfer is examined. They indicated that there is a significant and positive association between TQM and knowledge transfer. The criterion of this study is performance and the finding of the study shows that TQM contributes to performance through knowledge transfer. For instance, Frank and Ribeiro (2014) showed that encouragement from leaders will encourage the knowledge transfer among employees.

Other authors examine a particular activity of Knowledge Management such as Molina et al (2007). They have studied the relationship between Total Quality Management practices and knowledge transfer. according to this author, the distribution of knowledge is done in three areas: knowledge of suppliers, knowledge of HR and knowledge of the customer. This sharing of knowledge improves the transfer of knowledge and, as a result, improves organizational performance. The researchers suggest that the TQM principles are so important that the organization must ensure that they are taken into consideration when setting goals and making decisions (Shahin and Dabestani 2011, Brun 2011). These suggestions lead us to ask first of all about the links between the knowledge-sharing behavior and the TQM, then the influence of TQM factors on the development of knowledge sharing behavior, to come up with the following question : How can TQM promotes the Knowledge sharing behavior ?

The study has led to a research framework consisting of significant factors related to TQM that influence knowledge sharing behavior of employees. Categorizing these factors can help organizations to adopt factors in the way their KM is implemented. This leads us to conclude by the discussion of the results obtained from our research, and finally provide directions for future work.

## **2. Literature Review and hypotheses**

### **2.1. knowledge sharing**

Knowledge sharing is the cornerstone of Knowledge Management, the crucial and most important step (Gupta et al., 2000). Indeed, its importance lies in the fact that when employees do not participate in sharing their knowledge among themselves within the organization, the management's efforts in knowledge management become a failure. In addition, when knowledge is not shared in the organization, the benefits of knowledge will not be actualized (Hooff and De Ridder 2004).

Knowledge sharing is described by Gupta and Govindarajan (2007) as a process of output, transmission and influx of knowledge in terms of knowledge dissemination activities of a person, group or organization to the other. In addition, Srivastava (2006) suggests that knowledge sharing involves sharing ideas, facts, suggestions and expertise among colleagues that contribute to increasing the performance of employees and the organization (Chen, 2001). This exchange can take place at formal meetings, seminars and unofficial presentations or gatherings during tea breaks and along office corridors (Birchman, 2003), or through written correspondence or face-to-face communications. -face by networking with other experts, or by documenting, organizing and capturing knowledge for others (Cummings, 2004) and (Pulakos et al., 2003).

*Knowledge sharing occurs voluntarily and in different ways (ascending and descending). Knowledge can flow from one individual to another or from an individual to a group (Ford and Chan, 2003). Indeed, this sharing is both explicit and implicit contributes to the creation of new knowledge (Rivera-Vazquez et al., 2009, Hislop, 2002 ; Van den Hooff and Van Weenen, 2004).Ardichvill et al. (2003) discussed knowledge sharing as involving both the supply and the demand for new knowledge.*

*As part of this study knowledge sharing is conceptualized as a social and voluntary action to disseminate and exchange the tacit and explicit useful knowledge held by the individual in order to create new knowledge aimed at improving organizational and individual performance. In our study we focus on tacit knowledge shared among employees in the form of actions, skills and abilities through processes such as socialization.*

*Therefore, this paper adopts the ideology of Van Den Hooff and De Ridder (2004) who identified a two-dimension of knowledge sharing process that consists of knowledge donating and knowledge collecting. Knowledge donating can be defined as the process of individuals communicating their personal intellectual capital to others, while knowledge collecting can be defined as the process of consulting colleagues to encourage them to share their intellectual capital.*

## **2.2. Total Quality Management**

*Total Quality Management (TQM) is defined as the ability to deliver products of excellence to stakeholders (Karapetrovic, 2003). It is a holistic approach that aims to improve all organizational functions to meet expressed needs and achieve set goals (Kumar et al., 2009). Indeed, this approach includes two aspects: behavioral (soft factors) and technical (hard factors) (Yong and Wilkinson, 2001 ; Wilkinson, 1991 ; Evans and Lindsay, 1996).*

*Soft factors are generally related to the management of human resources. These factors are taken into account in the development of company strategies, the subsequent implementation plan (Lewis et al., 2006, Vouzas and Psychogios, 2007). While the hard factors are related to the technical tools of implementation and the development of TQM systems, they are intended to reinforce and support the implementation of TQM's flexible practices (Lewis et al., 2006 ; Vouzas and Psychogios, 2000). In our study we are interested in the flexible factors of the TQM.*

### **2.2.1. Senior management commitment and leadership**

*This element is essential in the field of quality management. it refers to the ability of senior managers in the organization to create values and quality factors in the organization. leaders represent a symbol and an image in the eyes of other employees therefore they must adopt values in the interest of promoting the quality of the company's offers (Cho, 1994).The following hypothesis thus is proposed:*

**H1 :** *There is a significant relationship between senior management commitment and knowledge sharing behavior.*

### **2.2.2. Customer Orientation**

*This element is a key factor in TQM access on the customers. Client satisfaction is seen as a dynamic goal for successful quality management (Cho, 1994). Knowing well the needs and expectations of the customers imply a better offer, therefore the organizations make*

enormous efforts to exceed the expectations of their customers. Hence the following hypothesis is proposed:

**H2 :** There is a significant relationship between Customer Orientation and knowledge sharing behavior.

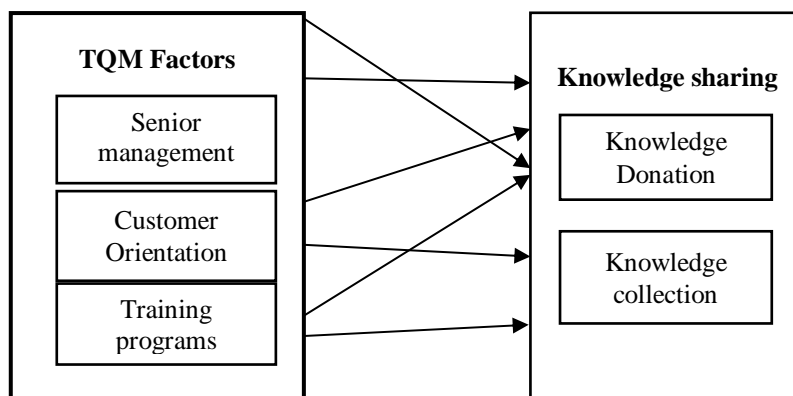
### 2.2.3. Training programs

Organizations must organize training sessions to improve employees' quality skills. In addition, training and personal development systems are considered as one of the underlying principles in the implementation of quality management and human resource management systems (Snape et al, 1995). The following hypothesis is therefore formulated:

**H3 :** There is a significant relationship between training programs and knowledge sharing behavior.

*The figure1 illustrates the set of hypotheses considered in the research model that is discussed above :*

**Figure 1 : Research model**



### 3. Methods

In this study the researchers employed a survey research design to gather respondents' opinions of the factors related to TQM affecting knowledge sharing behavior within insurance companies in Algeria. To do this, a questionnaire was appropriately structured to cover all the aspects of TQM and KS discussed in the previous sections and administered on population of 102 members of insurance company in Algeria. A questionnaire was developed from extracts of literature that relate to the dimensions tested in this study. Most of the items were adapted from questionnaires that have already been tested for validity and reliability; however the researchers wouldn't like to assume that the questionnaire would maintain same reliability and validity for the current study. Validity and reliability will be discussed in subsequent sections of this study. In total, there are 30 positive statements, categorized into five dimensions labeled knowledge donation, knowledge collection, senior management commitment, customer orientation, training programs, this is additional to the biographic details section of the questionnaire. All items are measured by a Likert scale ranging from 1, which is strongly disagree, to 5, which is strongly agree.

Once data was collected, it was loaded onto SPSS software for quantitative data analysis. However there searchers had to ensure that the factors measured in the

questionnaire are indeed measuring the theoretical constructs as intended; and also ensure that it can yield the same results; if it is replicated in a similar condition using the same research instrument. This will be done by performing validity and reliability tests indicated in the following table :

**Table 1 : knowledge sharing and TQM validity and reliability tests**

<i>Items</i>	<i>Description</i>	<i>Alpha de Cronbach</i>
<b>Knowledge Donating</b>	Don 1, Don 2	0,700
<b>Knowledge collecting</b>	Collecte 1 to Collecte 3	0,770
<b>Leadership</b>	Leadership 1 to Leadership 13	0,878
<b>Customer Orientation</b>	Client 1 to Client 4	0,943
<b>Training programs</b>	Formation 1 to Formation 7	0,890

The reliability test results confirm researchers' confidence in the appropriateness of data at hand. Cronbach's Alpha test yielded 0,878 for Senior management commitment (Leadership), 0,943 for customer orientation, 0,890 for training programs, 0,700 for knowledge donating and 0,770 for knowledge collecting. All these values are above the acceptable value of 0.6. According to Gliem and Gliem (2003) any Cronbach's Alpha that is greater than 0.8 is excellent, which would mean the reliability measure for the instrument is excellent.

In order to achieve the main objective for this study to evaluate factors associated to TQM that influence knowledge sharing behavior within the insurance company, we conducted further analysis of association between all variables to determine the strength and direction of the relationships as shown in table 2 :

**Table 2 : Correlation matrix between KS and TQM factors**

	<b>Leadership</b>		<b>Customer Orientation</b>		<b>Training programs</b>	
	<i>Correlation</i>	<i>Sig</i>	<i>Correlation</i>	<i>sig</i>	<i>Correlation</i>	<i>sig</i>
Knowledge sharing	0,360**	0,000	0,154	0,123	0,318**	0,001

\*\* La corrélation est significative au niveau 0,01 (bilatéral).

Table 3 shows a correlation matrix between variables, where knowledge sharing has a significant average relationship with both Senior management commitment (leadership) and Training programs with R-values equal to (0,360 and 0,318). Since this value is positive we conclude that there is a direct relationship between knowledge sharing and TQM factors which is evident because the knowledge-sharing behavior between the organization is influenced by the behavior and decisions of the hierarchical top, as well as training programs. it means that the more the efforts of the organizers converge towards the encouragement of this action the more it will be high and effective. This allows us to confirm H1 and H3 and reject H2.

A predictive analysis was performed in evaluating magnitude. It is important to note that there is a variety of analysis that could be used, which can even determine cause and effect, such as path analysis and structural equation models. However, these analysis techniques are most effective where a sample is greater than 200 cases (Lei & Wu 2007). Regression analysis would be adequate to achieve objectives of this study.

**Table 3:Table showing regression coefficients**

	Constant	Leadership			Customer Orientation			Training programs		
		$\beta$	T	Sig	$\beta$	t	sig	$\beta$	t	sig
KS*	2,729	0,228	2,628	0,01	-0,076	-0,880	0,381	0,173	1,997	0,04

\* Knowledge Sharing

The multiple regression test allows us to consider only the variables at a statistically significant probabilistic value (  $p\text{-value} < 0,05$ ). This table allows us to formulate the standard model of our study as follows:

$$y = 2,729 + 0,228 x_1 + 0,173 x_2$$

y : Knowledge sharing (dependent variable).

$x_1$  : Senior Management commitment (independent variable).

$x_2$  : Training programs (independent variable).

The validity of the model can be judged by the coefficient of Fisher (F) which is equal to 6,45. This value being greater than the calculated value of Fisher which is equal to 2.92, this allows us to confirm the validity of the model. The quality of our model is thus tested by means of the DW test which registers in this case a value of 1.840, which testifies to the inexistence of correlation between the errors. Therefore, we can say that our study model is of quality.

According to our model equation TQM factors have a positive impact on knowledge sharing behavior. any change recorded in any of the factors of the TQM necessarily leads to the promotion of knowledge sharing behavior. Senior Management commitment and training programs contributes to the improvement of the knowledge-sharing behavior with respective percentages of 22.8% and 17,3%.

#### 4. Conclusion

The results of this study show that the soft elements of Total Quality Management and knowledge sharing are significantly correlated. Senior management commitment and training have a positive relationship with the sharing of knowledge that leads us to confirm our two hypotheses (H1 and H3). In the same sense, knowledge sharing especially knowledge donating is significantly correlated with the elements of the TQM. Within the organization, the knowledge-sharing behavior is supported and influenced by senior management. The latter provides the resources needed to successfully share knowledge among employees. In this way, the leaders and senior executives of the organization can in fact affect the dominant corporate culture and create a climate of sharing and exchanging knowledge among

employees. As a result, senior management plays a facilitating role in knowledge sharing. In the same vein, the training programs provided by the organization are highly correlated with knowledge gathering which is logically acceptable. In a training session employees collect as much information and knowledge in order to promote teamwork and personal improvement. Despite the important role that customer satisfaction factor plays in improving knowledge sharing, some organizations do not take steps to get closer to their clientele, this is usually due to lack of communication and making contact with customers and the assessing customers' opinions.

## References

- Barney J.B. (1991), *Firm Resources and Sustained Competitive Advantage*, *Journal of Management*, n°17, p. 99-120.
- Cho, Kwansik., 1994. *Impact of total quality management (TQM) on organizational performance in the U.S: An empirical investigation of critical success factors*. Thesis(PHD).The university of Nebraska.
- Cross, R., and Cummings, J. N. (2004). *Tie and network correlates of individual performance in knowledge intensive network*. *Academy of Management Journal*, 47(6), 928-937.
- Evans, J.R, Lindsay, W.M., 1996. *The management and control of quality*, 3re Ed, West publishing company, New York. NY
- Evrard Y., Pras B., et Roux E. (2003), *Market : Etudes et recherches en marketing*, 3 ème Edition, Paris, Dunod.
- Fong, Ch-Y., Ooi, K-B, Tan, B-I., Lee, V-H., & Chong, A.Y-L. (2012). *HRM practices and knowledge sharing: An empirical study*. *International Journal of Manpower*, 32(5/6), 704–723.
- Frank, A.G. and Ribeiro, J.L.D. (2014), *Influence factors and process stages of knowledge transfer between NPD teams: a model for guiding practical improvements*, *International Journal of Quality & Reliability Management*, Vol. 31 No. 3, pp. 222-237.
- Gupta A.K. et Govindarajan V., 2000, « Knowledge flows within multinational corporations », *Strategic Management Journal*, vol. 21, p. 473-496.
- Hung, R.Y.Y., Lien, B.Y.H., Fang, S.C., & McLean, G.N. (2010). *Knowledge as a facilitator for enhancing innovation performance through total quality management*. *Total Quality Management*, 21(4), 425–438.
- J. T. Yang, (2007) : "Knowledge sharing: Investigating appropriate leadership roles ad collaborative culture," *Tourism Management* 28, pp. 530-543.
- Jackson, S.E., Chuang, Ch-H., Harden, E.E. & Jiang, Y. (2006). *Toward developing human resource management systems for knowledge-intensive teamwork*. *Research in Personnel and Human Resources Management*, 25(1), 27–70.
- Jayawarna, D. and Holt, R. (2009), *Knowledge and quality management: an R&D perspective*, *Technovation*, Vol. 29 No. 11, pp. 775-785.
- Ju, T.L., Lin, B., Lin, C. and Kuo, H. (2006), *TQM critical factors and KM value chain activities*, *Total Quality Management & Business Excellence*, Vol. 17 No. 3, pp. 373-393.
- Karapetrovic, S. (2003). *Musing on integrated management*. *Measuring Business Excellence*, 7(1): 4-13.
- Kumar, V., Choisne, F., de Grosbois, D. and Kumar, U. (2009). *Impact of TQM on company's performance*. *International Journal of Quality & Reliability Management*, V26(1): 23-37.
- Lam, S.Y., Lee, V. H., Ooi, K. B., & Phusavat, K. (2012). *A structural equation model of TQM, market orientation and service quality: Evidence from a developing nation*. *Managing Service Quality*, 22(3), 281–309.
- Lam, S.Y., Lee, V. H., Ooi, K. B., & Phusavat, K. (2012). *A structural equation model of TQM, market orientation and service quality: Evidence from a developing nation*. *Managing Service Quality*, 22(3), 281–309.



- Lee, C.C. and Yang, J. (2000), "Knowledge value chain", *Journal of Management Development*, Vol. 19 No. 9, pp. 783-794.
- Lewis, W.G., Pun, K.F. and Lalla, T.R.M. (2006). *Exploring soft versus hard factors for TQM implementation in small and medium-sized enterprises. International Journal of Productivity and Performance Management*, 55(7): 539-54.
- Molina, L.M., Llorens-Montes, J. and Ruiz-Moreno, A. (2007), *Relationship between quality management practices and knowledge transfer*, *Journal of Operations Management*, Vol. 25 No. 3, pp. 682-701.
- Ooi, K-B., Cheah, W-Ch., Lin, B., & Teh, P-L. (2012). *TQM practices and knowledge sharing: An empirical study of Malaysia's manufacturing organisations. Asian Pacific Journal of Management*, 29(1), 59–78.
- Penrose, E. (1959). *The Theory of the Growth of the firm*. Oxford: Basil Blackwell Publisher.
- Salajeghe, S and all. (2014), *Analysis of the role of quality management in creating knowledge management value chain*, *International Journal of Academic Research in Business and Social Sciences*, Vol. 4, No. 1, 31-46.
- Shahin, A., & Dabestani, R. (2011). *A feasibility study of the implementation of total quality management based on soft factor. Journal of Industrial Engineering and Management*, 4(2), 258–280.
- Snape, E., Wilkinson, A., Marchington, M., Redman, T., 1995, "Managing human resources for TQM : possibilities and pitfalls" , *Employee Relations* , Vol 17 No.3 pp: 42-51.
- Soltani, E., Lai, P-Ch., Sayed Javadeen, S.R., & Gholipour, T.H. (2008). *A review of the theory and practice of managing TQM: An integrative framework. Total Quality Management*, 19(5), 461–479.
- Van den Hooff, B., Schouten, A.P., & Simonovski, S. (2012). *What one feels and what one knows: The influence of emotions on attitudes and intentions towards knowledge sharing. Journal of Knowledge Management*, 16(1), 148–158.
- Vouzas, F., (2007). *Investigating the human resources context and content on TQM. Business Excellence* , 11(3),pp:21-29.
- Wang, Sh., & Noe, R. (2010). *Knowledge sharing: A review and directions for future research. Human Resource Management Review*, 20(2), 115–131.
- Wernerfelt, B. (1984), *A resource-based view of the firm*, *Strategic Management Journal*, Volume 5, Issue 2, pp 171–180.
- Wilkinson, A., Allen, O., Snape , E. 1991. *TQM and the management of labour. Employee Relation*, 13(1),pp: 24-31 .
- Yang, J-T. (2004). *Job-related knowledge sharing: Comparative case studies. Journal of Knowledge Management*, 8(3), 118–126.
- Yong, J., & Wilkinson, A. 2001. *Rethinking total quality management. Total Quality Management*, 12(2): 247–258.