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*Published in:*  
Procedia Computer Science

*DOI:*  
[10.1016/j.procs.2017.12.159](https://doi.org/10.1016/j.procs.2017.12.159)

Published: 01/01/2017

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication](#)

### *Citation for published version (APA):*

Torabi, F., & El-Den, J. (2017). The impact of Knowledge Management on Organizational Productivity: A Case Study on Koosar Bank of Iran. *Procedia Computer Science*, 124, 300-310.  
<https://doi.org/10.1016/j.procs.2017.12.159>

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4th Information Systems International Conference 2017, ISICO 2017, 6-8 November 2017, Bali, Indonesia

## The impact of Knowledge Management on Organizational Productivity: A Case Study on Koosar Bank of Iran

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### Abstract

Knowledge is becoming a valuable asset for most organizations and the quest to manage this asset is gaining popularity among researchers and management. Organizational management's main objective is to ensure effective and efficient use of its diverse resources such as labor, capital, materials, energy and information in their quest to achieve competitiveness as well as to increase productivity that must be managed. In today's rapid technological change, companies are in constant struggle to maintain competitive advantage through market differentiation by providing superior products and services. The management in organizations is increasing their focus on employees' know-how, past experiences and expertise in their quest to excel in achieving their goal. In short, Knowledge has become an integral asset for most organizational functionalities. Knowledge management promises to create the proper structure and the necessary technological infrastructure in organizations and human-driven placement. This research investigates the role of "tacit" knowledge sharing on organizational productivity. Accordingly, a framework was developed and hypotheses were drawn and tested where results demonstrated interesting insights into the role of sharing on organizational productivity. The survey, which was conducted at Koosa Bank of Iran, demonstrated that the employees' intention to share and consequently the sharing of tacit knowledge has direct positive impacts on productivity. In addition, our analysis demonstrated that not only productivity would increase as a result of knowledge sharing, but also employees' innovative contributions increased as a result of exposure to others' knowledge, expertise, and experiences.

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Peer-review under responsibility of the scientific committee of the 4th Information Systems International Conference 2017

*Keywords:* Knowledge Management; Productivity; Knowledge Culture; Tacit and Explicit Knowledge

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## 1. Introduction

Organizational management main objective is to ensure effective and efficient use of its diverse resources such as labor, capital, materials, energy and information in their quest to achieve competitiveness as well as to increase productivity. Iran's organizations objectives are not an exception as they similarly strive to maintain high productivity through management innovations and dissemination of policies. In today's rapid technological change, companies are in constant struggle to maintain competitive advantage through market differentiation by providing superior products and services. Among various methods, the management in organizations is increasing their focus on employees' know-how, past experiences and expertise in their quest to excel in achieving their goal. Additionally, improving the communication among employees as well as changing the organization's culture to a share-what-you-know is integral in today's organizations.

Without any doubt, Knowledge has become an integral asset for production, next to labor, land and capital [1]. Even though some forms of intellectual capital are transferable, internal/personal knowledge is not easily articulated, captured, retained, disseminated and reused. Accordingly, the knowledge anchored in employees' minds can get lost if they decide to leave the organization [2]. The basis of Knowledge management is fine strategy that the right knowledge with the right shape put in the right people. [3] Current research demonstrates organizational success as a by-product of the critical success factors of implementing Knowledge management (KM). Indeed, it should be noted that the impact of intangible (knowledge) assets is significant although they are difficult to be conveyed as they are mostly arising from encountering real situations and as a result through real experiences of employees.

In today's competitive world, productivity as a philosophy which is based on improvement strategy forms the most important goal of any organization; therefore, knowledge management promises to create the proper structure and the necessary technological infrastructure in organization and human-driven placement. Inventing new training techniques and methods for teaching manpower to control costs, improve quality and customer satisfaction, is an essential management processes. Owing to the fact that different information technologies and techniques applied in the function of knowledge management reflect various effects in separate processes as well as improving diverse indicators in the organizational efficiency, hence, today's enterprises require more information and communication in order to reduce costs given the scarcity of current resources, to shorten delivery time, to increase quality and improve productivity.

## 2. Literature review

### 2.1. Knowledge management

Individuals' knowledge consists of intangible awareness, learned facts and information which are manifested as ideas, judgments, talents, root causes, relationships, perspectives and concepts [2]. Knowledge resides in the individual's mind and only when it is articulated and/or captured and shared becomes encoded in organization processes, documents, products, services, facilities and systems provided that the employees have the intention to share what they know. Knowledge creation is integral, as knowledge is the only sustainable competitive advantage which is the result of learning. Furthermore, the creation and transmission of knowledge is seen as strategically significant as one of the fundamental processes that determine organizational learning abilities and innovation [4] Although human knowledge is intangible, dynamic, and difficult to measure, without it no organization can survive. Accordingly, organizations should introduce incentives for their employees to share what they know, as well as means of capturing and retaining that knowledge for organizational future use.

KM cycle involves both, the creation and the acquisition of organizational knowledge. Knowledge creation involves developing new knowledge or replacing existing knowledge with new content [5]. Organization have to develop a culture for the creation of knowledge through developing ways of encouraging employees to share by creating incentives as well awareness regarding the positive values and influence sharing has to the individual, the groups and the organization. In contrast to knowledge creation, knowledge acquisition involves the search for, recognition of, and assimilation of potentially valuable knowledge, often from outside the organization [6].

Chen and Xu [7] recognized two main categories of Knowledge: Explicit and Tacit. According to the British philosopher, Polanyi [8], explicit knowledge mainly refers to structure knowledge expressed by text, images and symbols, which can be taught verbally and learned by textbooks, reference materials, databases, etc. Tacit knowledge only exists in people's minds, which is difficult to express by words, symbols, images media. Knowledge management is the process of capturing, developing, sharing, retention, and effectively using organizational knowledge. Organizational knowledge is the interplay between two types of knowledge, Tacit and Explicit. Tacit knowledge is in people minds and is the result of past experiences, know-how, expertise etc. and cannot be captured and shared easily. Explicit knowledge on the other hand is imbedded in the organization's processes, routines, books, images, symbols and can be easily made accessible and available to whomever is seeking specific knowledge. The management of explicit knowledge is relatively easy; information systems play an integral part in the capture and retention of data and information. Explicit knowledge is achieved through teaching, training and it is the basis for innovation because of the relative simplicity of its availability to information/knowledge seekers. On the other hand, the management of tacit knowledge is relatively more difficult and requires different techniques for its creation, articulation, capture, dissemination and retention. Tacit knowledge contains many knowledge cheats such as the work of know-how, experience, perspective and values, which implies more innovative ideas, which constitute the core competitiveness [9].

In order to boost organizational productivity, knowledge management should play a key role through the creation, sharing, dissemination and retention of knowledge and by offering the organization a superior value proposition based on this knowledge. To create a knowledge sharing culture the organization needs to encourage people to work together more effectively, to collaborate and to share - ultimately to make organizational knowledge more productive. The purpose of knowledge sharing is to help an organization as a whole to meet its business objectives [10]. Knowledge management, productivity and knowledge development are organizational assets towards organizational goals [11].

## 2.2. Knowledge culture

The impact of culture on organizational performance has long been an issue of debate in management and economics. Cultural diversity is a "double-edged sword" [12] which can have a positive or negative impact on performance. Positive effects are related to increased synergies and spillovers which arise from the association of different viewpoints, and increased opportunities for knowledge recombination. Negative effects are related mostly to communication problems and problems which arise in conflict resolution.

Organizational culture can be thought of as a relatively rigid tacit infrastructure of ideas that shape not only our thinking but also our behavior and perception of our business environment [13]. It effectively establishes a set of guidelines by which members of an organization work and how those organizations are structured. It is rigid mainly due to our paradigms.

Literature on knowledge management emphasizes the importance of culture as a major determinant in outcomes as those from Deshpande et al. [14] and Feldman [15] in creating a supportive organizational environment for innovation; several practices relating to cultural barriers have been identified in the literature [13].

Such enabling conditions include the provision of resources and opportunities as well as minimizing constraints that could impede individual creativity [16].

To create knowledge sharing culture, organizations need to develop policies of sharing and the dissemination of these policies in the organization. Knowledge sharing culture, allow the development of new insights, ideas or products which might result in the formation of creative initiatives. In other word culture-based creativity is associated with people ability to work in a knowledge sharing culture.

Culture is reflected not only in the visible aspects of the organization, such as its mission and espoused values, but also in the way people act, what they expect of each other and how they share their information [17]. Although culture is a conglomeration of essential organizational elements that serve as a foundation and nurturer [18], staffs intention to share their information and knowledge requires changes in corporate culture [19].

### 2.3. Knowledge culture dissemination

It is the responsibility as well as the interest of the organization to make it clear to its employee that the organization can only survive through the sharing of knowledge. It is only with a sharing culture that the organization can attain high levels of functionality and productivity.

The old paradigm was “knowledge is power” But today we posit that the real organizational power is in the sharing of what employees know and change the motto of organizations to the effective “sharing knowledge is power”. The purpose of knowledge sharing is to help an organization as a whole to meet its business objectives [10]. If people understand that sharing their knowledge helps them in doing their jobs more effectively then knowledge sharing will become a reality [10].

Successful knowledge management applies a set of approaches to organizational knowledge—including its accumulation, utilization, sharing and ownership. Indeed, KM can be seen as a strategy that assists organizations to use knowledge to envisage, make and control the whole decision making process [20].

If people understand that sharing their knowledge helps them do their jobs more effectively; helps them retain their jobs; helps them in their personal development and career progression; and help the organization as a whole to be more productive and effective; rewards them for getting things done (not for blind sharing); and brings more personal recognition, then knowledge sharing will become a reality.

KM capability is the ability of an organization to capture, share, manage and deliver real time authenticated information to improve organization response and provide faster decision-making based on reliable information [21].

Knowledge is perishable and is increasingly short-lived. If knowledge is not used and shared, then it rapidly loses its value. Even with the low level of knowledge sharing that goes on today – if employees do not make their knowledge productive than someone else with that same knowledge will. By sharing knowledge, employees gain more than they lose. Sharing knowledge is a synergistic process – employees get more out than they put in. If one staff share a product idea or a way of doing things with another person – then just the act of putting my idea into words or writing will help him/her shape and improve that idea and improve Tacit & Explicit knowledge. So if employees get into dialogue with the other person then they’ll benefit from their knowledge, from their unique insights and improve their knowledge further.

### 2.4. Organizational productivity

The value that knowledge management adds lays in increasing individual, team and organizational efficiency through the implementation of knowledge management concepts. The higher the level of capturing knowledge (explicit or tacit) with information technology tools, the better the KM result [22].

Productivity is a combination of precision and optimal use of manpower and material resources available and efficiency is determined through performance. Efficiency and effectiveness are two important components of productivity and they are normally affected by different factors. Simply, the productivity is shown a ratio of output to input as a fraction. But the productivity in organization is a series of coordinated and planned actions to improve the program and better use of talents, facilities, spaces and places. These practices design and implement in modern program [23].

Current KM initiatives from Zack et al. [24] and Marqués & Simón [25] considered organizational knowledge as a significant asset for gaining competitive advantage as well as a significant contributor to the success and survival of any organization within a highly competitive business environment.

Past research from Holan & Phillips [26] and Becker [27] concluded that because the environment is constantly changing, an individual’s knowledge developed by guiding the firm through its culture is likely to be time-bound and may lose its relevance and value over time. Akgün et al. [28] argued that an urgent change in customer needs may initially lead design engineers to deny these changes are really needed and to refuse to alter original plans so as to avoid the additional stress. For organizational innovation and competitiveness to take place at the organizational level, some cultural barriers such as knowledge culture that should be introduced in order to ensure that organizational members have adequate knowledge and experience to perform their responsibilities. Many studies

have demonstrated the positive effect of organizational culture on organizational innovation such as those of Deshpande et al. [14] and Hernández-Mogollón et al. [29]. A truly innovative firm must be embedded in a strong culture that stimulates engagement in innovative behavior [30]. According to Barney [31] and several other researchers such as Deshpande et al. [14], a firm’s culture, defined as a complex set of values, beliefs, assumptions, and symbols, that shape the way in which a firm conducts its business and can be a source of sustained competitiveness, so it constitutes a strategic resource.

As stated earlier, organizational main aim is to make sure that employees are aware of the fact that knowledge sharing is in their personal interest as well as organizational interests. Many authors such as Rašul et al. [32] assessed the influence of KM elements on organizational performance and productivity whilst some say that the impact is hard to measure [34]. Some authors like Rašul et al. [33] and Haji et al. [34] suggest that elements of Tacit & Explicit knowledge positively affect organizational productivity, while others try to gauge the relationship and consider other factors like knowledge sharing [35].

### 3. The research’s proposed model and hypotheses

Fig. 1 shows the research’s proposed mode and its underlying factors influencing hypotheses.

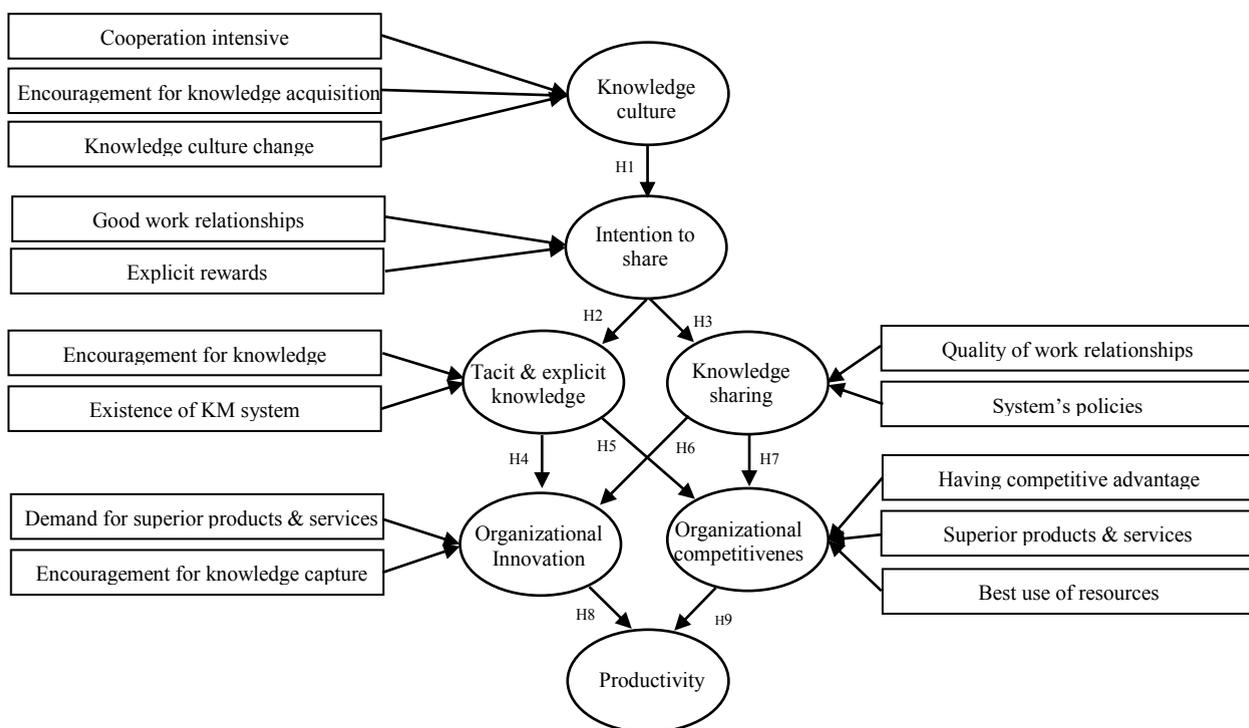


Fig. 1. The Proposed Conceptual Model

The proposed model emphasizes the importance of change in knowledge culture as the cornerstone for organization increase in productivity. In order to achieve better performance, organizations opt to disseminate a culture of increased communication, face-to-face interaction as means of sharing and exchanging knowledge and information. Relying on old cultures of organizational where employees are egoist proved to be a hinder to organizational performance and productivity. Once this culture is promoted and disseminated we argue that the intension to share increases. Of course, this is not a by-product and not an automatics result but with time and “enforcement” of such culture we would see better results. The sharing of knowledge is independent of the type of knowledge as organizations have to capture the tacit, turn it into explicit through a process of capture and nurture

and make it accessible to the employees. This interplay between sharing and exposure to past expertise and knowledge (explicit) would increase innovation and performance, hence the overall organizational productivity.

The following hypotheses have been developed as noted on the framework in Fig. 1:

- *H1: Knowledge Culture positively impact employee's intention to share of knowledge*  
Knowledge resides in the individual's brain and becomes encoded in organization processes, documents, products, services, facilities and systems provided that the employees have the intention to share what they know.
- *H2: Employees intension to share positively impact Tacit & Explicit knowledge*  
Sharing knowledge, employees gain more than they lose. By sharing idea with other staffs, the idea will improved and developed and finally Tacit & Explicit knowledge will developed
- *H3: Employees intension to share positively impact knowledge sharing of organization*  
Organization have to develop a culture for the creation of knowledge through developing ways of encouraging employees to share knowledge as well as making them aware of the importance of sharing to the individual and the organization.
- *H4: Tacit and Explicit knowledge positively impact Organizational Innovation*  
The explicit knowledge is the basis for innovation. Tacit knowledge contains many knowledge cheats such as the experience, perspective and values, which implies more innovative idea and though
- *H5: Tacit and Explicit knowledge positively impact Organizational Competitiveness*  
These are fundamental keys of the knowledge creation culture in most organizations. Knowledge is the only sustainable competitive advantage which is the result of learning. This factor cycle involves both, creation or the acquisition of knowledge. Knowledge creation involves developing new knowledge.
- *H6: knowledge sharing positively impact Organizational Innovation*  
In order to increase organizational productivity, KM should play a key role through the sharing and dissemination of knowledge by proposing organization a superior value proposition based on this knowledge, which leads to innovation in organization.
- *H7: knowledge sharing positively impact Organizational Competitiveness*  
The hypothesis addresses the employee's ability to articulate his/her knowledge and his/her awareness regarding the sharing of their know-how and expertise. Those skills affect the organization's competitiveness and productivity.
- *H8: Organizational Innovation positively impact productivity of Organization*  
Owing to the fact that many organizations have the accessibility of the same resources, the factor helping them to make the most out of the same sources is innovative ideas which leads to more productive approaches.
- *H9: Organizational Competitiveness positively impact productivity of Organization*  
The increase in competitiveness among the employees through the sharing of what they know, and consequently the overall organizational competitiveness has positive impact on the organization's productivity.

#### 4. Methodology

A questionnaire was developed to test the validity of the model and its hypothesis. In order to insure its accuracy sought feedback from 20 university professors and banking experts. This was followed by corrections and adjustments as well as corrections based on their opinions. The questionnaires were distributed to managers and employees of different branches at the Koosar Bank in Tehran, Iran. We decided to implement random sampling for the statistical analysis on the selected community. Cochran sampling model was used for our sample community to make sure that we had proper size of samples, and considering Cochran formula with 0.05% level of error, and 95% assurance level, we found out that the sample size shouldn't be less than 196. We received a good number of questionnaire back (210) and this was critical to insure the credibility of the data. We omitted repeated questions and defected areas from the questionnaires and they were statistically analyzed. The credibility of the questionnaires was tested by using the content credibility method. Content credibility of a measuring tool depends on designed questions. Considering the fact that we did some changes into original standard questionnaire, its' credibility has been proven by experts and reviews of supervisors, and proper improvements has been made and final questionnaire was prepared. To calculate the Cronbach alpha coefficient and determining the reliability of questionnaire, the SPSS

software was used. The results demonstrated that the alpha for the overall questionnaire was 0.974 which demonstrates high level of credibility. Alpha level for each section of the questionnaire is as follow:

Table 1. Alpha for detailed scales of questionnaire.

Detailed Scale	Alpha coefficient	Sample size
Employee intention to share	0.900	196
Knowledge sharing	0.919	196
Explicit & Tacit knowledge	0.892	196
Organizational Innovation	0.851	196
Organizational Competitiveness	0.935	196
Knowledge Culture	0.863	196
Productivity	0.867	196

## 5. Data analysis

### 5.1. Correlation matrix

In analyzing the significance relation among researches constructs, the correlation matrix statistical method was used. For the normality measurement, the Person matrix of correlation was used in this study. The output of correlation matrix demonstrated below:

Table 2. Correlation Matrix.

Item	EIS	KS	E&TK	OI	OC	KC
EIS	1.00					
KS	0.936**	1.00				
E&TK	0.848**	0.907**	1.00			
OI	0.798**	0.836**	0.839**	1.00		
OC	0.749**	0.831**	0.884**	0.874**	1.00	
KC	0.835**	0.815**	0.827**	0.829**	0.875**	1.00
P	0.840**	0.927**	0.874**	0.894**	0.832**	0.768**

\*\*Correlation is significant at the 0.01 level (2-tailed).

### 5.2. Result of hypotheses

The analysis of this study show high significance of the theoretical foundation of the research's variables, and consequently all hypotheses were supported using Multiple Regression method. The results for the analysis of the variables analyze is shown in following tables.

Table 3 shows the percent of variability in the item is accounted for by all of the dependence s together (it's a multiple R-square). Table 4 shows the F-test and verifies the good fit for the data. According to the results in the table we concluded that the p-value has a good fit. Table 5 shows the beta coefficients. After the evaluation of the F-value and R2, it is important to evaluate the regression beta coefficients: unstandardized and standardized. The beta coefficients can be negative or positive, and have a t-value and significance of that t-value associated with each. If the beta coefficient is not statistically significant, no statistical significance can be interpreted from that predictor. If the regression beta coefficient is positive, the interpretation is that for every 1-unit increase in the predictor variable, the dependent variable will increase by the unstandardized beta coefficient value).

Table 3. First Hypothesis Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.835	0.697	0.681	0.50431

Table 4. ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	10.548	1	10.548	41.475	0.000
Residual	4.578	195	0.254		
Total	15.126	196			

Table 5. Coefficients

Model	Unstandardized Coefficients		Unstandardized Coefficients	T	Sig
	B	Std. Error	B		
Constant	1.113	0.446		2.496	0.022
F	0.823	0.128	0.835	6.440	0.000

The results related to the first Hypothesis show that, Knowledge Culture had positive significant impact on employees' intention to share of knowledge. Consequently, the hypothesis was supported (B of 0.833 in level of  $p < 0.05$ ). All hypotheses determined regression demonstrated similar results as shown in Table- in Table-6:

Table 6. Results of Hypothesis

Model	Unstandardized Coefficients	Standardized Coefficients	Standardized Coefficients	t	Sig	Result
	B	Std. Error	B			
H1	0.823	0.128	0.835	6.440		Supported
H2	0.800	0.118	0.848	6.792	0.000	Supported
H3	0.854	0.076	0.936	11.265	0.000	Supported
H4	0.957	0.146	0.839	6.544	0.000	Supported
H5	0.946	0.131	0.884	8.010	0.000	Supported
H6	0.985	0.153	0.836	6.452	0.000	Supported
H7	0.917	0.161	0.831	6.335	0.000	Supported
H8	0849	0.100	0.894	8.480	0.000	Supported

Results of second Hypothesis show that, Employees intention to share had positive significant impact on Tacit & Explicit knowledge. Consequently, the hypothesis was supported (B of 0.848 in level of  $p < 0.05$ ). Results of third Hypothesis show that, Employees intention to share had positive significant impact on knowledge sharing of organization. Consequently, the hypothesis was supported (B of 0.936 in level of  $p < 0.05$ ). Results of the fourth Hypothesis show that, Tacit & Explicit knowledge had positive significant impact on Organizational Innovation. Consequently, the hypothesis was supported (B of 0.839 in level of  $p < 0.05$ ). Results of fifth Hypothesis show that, Tacit & Explicit knowledge had positive significant impact on Organizational Competitiveness. Consequently, the hypothesis was supported (B of 0.884 in level of  $p < 0.05$ ). Results of sixth Hypothesis show that, knowledge sharing had positive significant impact on Organizational Innovation. Consequently, the hypothesis was supported (B of 0.836 in level of  $p < 0.05$ ). Results of seventh Hypothesis show that, knowledge sharing had positive significant impact on Organizational Competitiveness. Consequently, the hypothesis was supported (B of 0.831 in level of  $p < 0.05$ ). Results of eighth Hypothesis show that, Organizational Innovation had positive significant impact on productivity of Organization. Consequently, the hypothesis was supported (B of 0.894 in level of  $p < 0.05$ ).

Multiple Regression method was implied in this research to measure the validity of the above hypotheses. In this method, if the degree of significance is among standard scales, then the H1 (instead of H0) was accepted and there is significance relation among variables.

## 6. Findings

This aim of this research was to find out whether or not there is positive impact of knowledge management on organizational productivity. A questionnaires survey was developed and after analysis the results confirmed and justified new features of knowledge management constructs on the Koosar Bank case.

The research introduced a model for knowledge management that consists of two empirically tested constructs (Tacit & Explicit knowledge, knowledge sharing). This model consists of factors such as knowledge culture and organizational factors, which are defined in literature review. This model not only proves that the introduced constructs were good measures for defining productivity of organization, but also evolves into a measurable scale that singled the case organizations on a multi-level chart.

The results of this research also have several implications. First, the feedback from business practice supported the theoretical framework and hypotheses proposed in the survey. The most important finding is that knowledge management components positively affect organizational competitiveness and innovation which results in improved organizational productivity. In order to have a positive effect on organizational productivity, these components must be identified, introduced, developed, managed and integrated into the organizational processes and practices.

Second, this empirical research proved that KM heavily relies on the sharing intention of staffs and existing knowledge culture. However, business practice shows that many organizations have experienced difficulties in effectively using KM technologies. In order to have a positive impact on elements of knowledge, organizational culture needs to be introduced through a sharing intention of staffs. In practice it means that introducing knowledge culture is successful and has a positive impact on KM only if it is backed up by changes in people attitude toward intention to share of knowledge.

Increase in the staffs' intention to share helps an organization to optimize processes. Effective KM cannot be implemented without a significant behavioral and cultural change. In addition, the knowledge culture effects, which distinguish organizations from each other, are found to be related to KM efficiency. It was also noted in the research that knowledge sharing affects organizational innovation and competitiveness.

Third, although many researchers have proposed different frameworks for assessing better productivity, this survey was conducted to identify two components that play a role in a successful productivity: organizational innovation and competitiveness. The results clearly show that the introduced constructs present good measure for the knowledge management construct. Moreover, the questionnaire constructed and used in this research could become a standard for measuring knowledge management concept. Organizations could use the results of the survey as a benchmark.

## 7. Conclusions

For many companies, the time of rapid technological change is also the time of incessant struggle for maintaining a competitive advantage. It is obvious that knowledge is slowly becoming the most important factor of production, next to labor, land and capital. Even though some forms of intellectual capital are transferable, internal organizational knowledge is not easily copied. This means that the knowledge anchored in employees' minds can get lost if they decide to leave the organization.

The literature review demonstrated the critical success factor for KM to organizational productivity and competitiveness. This paper contributes to the knowledge management research field through understanding those factors, their interrelation and the role of knowledge intention to share in achieving better business productivity.

The results of the empirical investigation also confirmed strong positive effect ( $B=0.936$ ) of employees intention to share practices on knowledge sharing of organization (H3). Also findings support the impact of Tacit & Explicit knowledge on Organizational Innovation ( $B=0.839$ ) and Competitiveness ( $B=0.884$ ).

The research's findings can be used to improve the knowledge management practice of the organization and its knowledge entities. Finally, we argue that the introduced KM-Productivity conceptual model is a useful starting point to gain a deeper insight into few organizational KM concepts and their influence on organizational competitiveness and innovation. Despite the claims for a relation between intention to share and knowledge sharing, few researchers have actually proved the existence of a relation with Tacit & Explicit knowledge too, as well as the nature of this link. In this paper, a positive influence of these factors on organizational innovation and competitiveness which leading to higher level of productivity is examined and proved. This conclusion can be applied as a starting point for managers who are to implement Knowledge management practices through their organization.

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