

KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL PERFORMANCE – LITERATURE REVIEW

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Abstract:

The main purpose of this paper is to identify relevant literature in recent years on the topic of relation between knowledge management and organizational performance. A research model concerning relations between knowledge management processes (creation, storage, transfer and application) and organizational performance and relations between knowledge infrastructure elements (technology, organizational culture, and organizational structure) and organizational performance will be researched via literature review and proposed for further empirical research in doctoral work. Majority of reviewed studies revealed positive impact of knowledge management practices and / or knowledge infrastructure elements on organizational performance. Researchers defined organizational performance with various performance indicators from financial to strictly non-financial performance measures and also as combination of several different performance indicators. More than half reviewed scientific papers defined organizational performance with general or integral performance indicators consisting of several different performance indicators and by that avoiding more specific performance indicators such as financial indicators. As impact of knowledge management and organizational performance is confirmed in more and more studies every year, a study of relation between knowledge management and more specific performance indicators (financial and non-financial) as well as strength of relation, still remains challenge and subject of future researches.

Keywords: knowledge management, knowledge management processes, knowledge infrastructure elements, organizational performance

1 INTRODUCTION

In recent years knowledge management is emerging in business world not only as important aspect of doing business but also as a strategic source that increases potential in organizations to achieve competitive advantage. Successful managers realized that their company value is becoming more and more dependable by the ability of the company to effectively manage knowledge. Competitive market requires never ending process of developing company strategies and operations as well as adapting to market changes while seeking the goal of company long term success and increase in shareholder value. Knowledge management is becoming as important factor in company success as any other, including capital, property or brand. Therefore managerial focus is shifting towards effective management of company resources, especially knowledge and related processes of creation, codification, transfer and usage of knowledge.

As organizations are viewing importance of knowledge management as generator of their success, questions of linkage between knowledge management and organizational performance are emerging among practitioners and academia. As many studies discovered, the question of organizational performance is more complex as initial belief and goes beyond traditional financial measures only. Studies has shown that financial measures of organizational performance are not sufficient in modern economy and other measures must also be used to see the wider perspective of company performance.

In this paper we identified relevant literature on selected topic in recent years and made systematic literature review. The goal of systematic review is to find out how the authors approached and conducted their research, which criteria they used, what are the finding of research and which knowledge management elements and performance indicators they used when examining relationships between them.

The paper is organised as follows. First, it presents the purpose of this paper. In section 2 organizational performance measurement is presented and knowledge management concepts are described in section 3. Section 4 is review of relevant literature to date, followed by conclusion in section 5.

2 ORGANIZATIONAL PERFORMANCE

Increasing organizational performance is a goal every organization is pursuing. Organizational performance can be most simply defined as company performance compared to goals and objective. Measuring organizational performance was in the past limited more or less on financial measures in the form of revenue, profit, net operating income, ROA (Return on Assets), ROE (Return on Equity), ROS (Return on Sales) and other mostly revenue and profit related measures. Although very practical and useful, traditional financial measures cannot create advantages for the organization in an intense competitive environment (Wu & Liu, 2010). New organizational concepts demanded additional measurement information in order for managers to make proper decisions and for shareholder to properly evaluate company performance. New financial and especially non-financial information in measuring performance became more or equally important and provided added value to stakeholders. By incorporating non-financial information in performance criteria as well; this information can reflect intellectual capital and social responsibility as well as promotion of organizational knowledge level (Wu & Liu, 2010).

New measurement concepts and models of organizational performance emerged into business world like EVA (Economic Value Added), MVA (Market Value Added), integral measurement concepts like BSC (Balance Score Card) that contain financial perspective, customer's perspective, internal process perspective, learning and growth perspective and other models that contain perspectives like human resource, output, stakeholders satisfaction, strategy and process alignment, operational performance, value creation, corporate vision, organizational growth, competitive advantage etc..

After conducting literature review for our research we identified seven performance measures in reviewed papers. As performance can be measured in many different modes, authors used different performance indicators to conduct their research:

- Financial performance
- Innovation performance
- Growth performance
- Operational performance

- Competitive advantage
- Value creation
- General and Integral performance measurements

Researchers in majority of reviewed papers avoided using specific performance measures like ROA, BSC or EVA but instead used performance indicators that reflect success of an organization on a more general level.

3 KNOWLEDGE MANAGEMENT

Knowledge management can be defined in different ways as there is not one that can cover all aspects of it. Knowledge management can be viewed as identifying and leveraging the collective knowledge in an organization to help organization compete (von Krogh, 1998). Chawla & Joshi (2010) define knowledge management as identification and analysis of available and required knowledge in order to achieve organizational objectives. Knowledge management aims to exploit an organisation's information for greater productivity, new value and increased competitiveness, and also to encourage the exchange of tacit knowledge (Davies, 2000).

As there is not one definition of knowledge management there are also several categorisation of knowledge management practices. For the purpose of these paper we will use Alavi's & Leidner (2001) definition of four knowledge management processes:

1. Knowledge creation
Knowledge creation can be described as developing new or replacing existing content. Using Nonaka's model (1994) knowledge creation is viewed as continual interplay between tacit and explicit dimensions of knowledge and a growing spiral flow as knowledge moves through individual, group and organizational levels. By that four modes of knowledge creation have been identified: socialization, externalization, internalization and combination.
2. Knowledge storage / retrieval
Organizational knowledge storage includes knowledge residing in various component forms, including written documentation, structured information stored in electronic databases, codified human knowledge stored in expert systems, documented organizational procedures and processes and tacit knowledge acquired by individuals and networks of individuals.
3. Knowledge transfer
Considering the distributed nature of organizational cognition, an important process of knowledge management in organizational settings is the transfer of knowledge to locations where it is needed and can be used.
4. Knowledge application
Bhatt (in Mills & Smith, 2011) stated that: "knowledge application means making knowledge more active and relevant for the firm in creating value. For organizations to create value they need to apply knowledge to their products and services by various means such as repackaging available knowledge, training and motivating its people to think creatively, and utilizing people's understanding of the company's processes, products and services (Mills & Smith, 2011).

As additional elements of knowledge management capabilities we will use the concept of Gold et al.'s (2001) knowledge infrastructure elements which consist of components of technology, organizational culture and organizational structure (Mills & Smith, 2011):

1. Technology
The technology element of knowledge infrastructure comprises the information technology (IT) systems that enable the integration of information and knowledge in the organization as well as the creation, transfer, storage and safe-keeping of the firm's knowledge resource.
2. Organizational culture

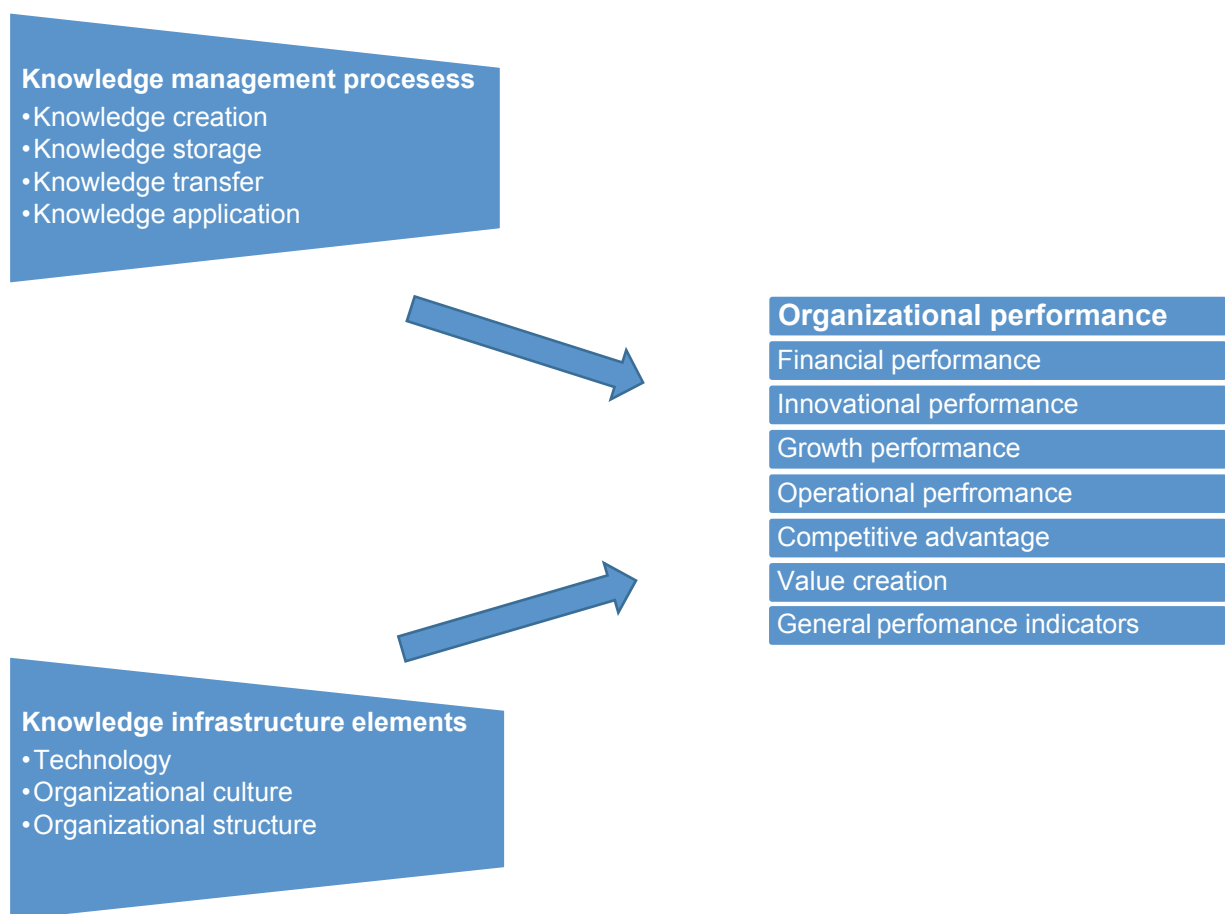
In the context of knowledge management organizational culture is considered a complex collection of values, beliefs, behaviours and symbols that influences knowledge management in organizations.

3. Organizational structure

Organizational structure comprises the organizational hierarchy, rules and regulations, and reporting relationships and is considered a means of co-ordination and control whereby organizational actors can be directed towards organizational effectiveness.

With main research question linkage between knowledge management consisting of knowledge management processes and knowledge management capabilities, and organizational performance we developed research model showed in Table 1. Research model predicts influence of knowledge management processes and / or knowledge infrastructure elements on organizational performance displayed as different performance indicators of company success.

Table 1: Research model



4 RELEVANT LITERATURE TO DATE

Rhodes et al. (2008) examined the relationship of organizational learning, social capital and the effectiveness of knowledge transfer and perceived organisational performance. Their study results indicated that the elements of knowledge transfer (absorption capacity, learning intention) is positively correlated to innovation process and financial performance. Study of innovation performance improvements through proactive management of knowledge assets was performed by Inkinen et al. (2015). The authors provided empirical evidence of how various KM practices influence innovation performance. Strategic knowledge management, knowledge-based compensation and technology were recognized as influential factor on innovation performance, while impact from some other knowledge management practices were not confirmed. Another study of relationship among knowledge processes,

organizational trust and innovativeness was conducted on sample of Polish companies by Sankowska (2013). Study revealed that organizational trust and innovativeness are correlated through knowledge management processes as mediator. Trust engages more effective knowledge managing processes that impact process of innovation in firms.

Andreeva and Kianto (2012) researched relation between knowledge management activities and organizational outcomes in the form of firm competitiveness and economic performance. Study revealed that activities inside of knowledge management area such as IT technologies and human resource management have positive effect on competitive advantage. On the other hand IT technologies improve financial performance only when supported by human resource management which on its own has positive impact on financial performance.

Abu Bakar et al. (2016) study examined relationship between knowledge management practices and growth performance in construction industry. Growth performance measurement is undertaken through company turnover and employment growth. The results show that knowledge creation, storage, transfer and application have a significant relationship with growth performance. On the four processes knowledge transfer has strongest impact on growth performance.

Akhavan et al. (2014) explored the relationship between ethics, knowledge creation and organizational performance. Organizational performance is determined in study in three dimensions: output, adaptability and human resources. While ethics was positively correlated with both knowledge creation and organizational performance, there were no significant relationship between knowledge creation processes and organizational performance. Another result of research that there is a positive correlation between ethics and dimension of human resources which indicates that human resources management as one of the enablers of knowledge management has positive impact on organizational performance. In study on identification of integration between knowledge strategy and knowledge management processes leads to organizational creativity, Shahzad et al. (2016) discovered that knowledge creation process impacts organizational performance which is defined in a model that includes successfulness, market share, growth, profitability and innovativeness. Mills & Smith (2011) evaluate in their study impact of specific knowledge management resources (KM enablers and processes) on organizational performance. The result showed that some of the knowledge management processes and enablers (knowledge application and organizational structure) were directly related to organizational performance, while others, though important preconditions for knowledge management are not directly related. The influence of intellectual capital (knowledge management as moderator) on organizational performance was examined by Ling (2013). Study supported hypothesis that all three types of intellectual capital (human capital, structural capital, relational capital) have direct positive impacts on a firm's global initiatives (global agility and global innovation). As a result, intellectual capital enhances not only a firm's financial performance but also its global initiatives. Study from Tseng (2016) explored influence of knowledge management capability and customer knowledge gaps on corporate performance. Knowledge management capability can be described as ability of a firm to utilize existing knowledge and generate new one and can be viewed in form of knowledge management processes and also knowledge infrastructure elements. Results showed positive impact of knowledge management capability on corporate performance. Palacios-Marques et al. (2013) study analyses effect of several managerial elements and information technology on knowledge transfer and subsequently on firm performance. Results showed that managers can improve knowledge transfer and by that positively influence the creation of superior firm performance. The influence of knowledge loss and knowledge retention on absorptive capacity and performance was studied by Lin et al. (2016). Study supported positive effect of knowledge loss (as opposed to knowledge retention) on the decrease of performance by management information system departments in companies. Noruzy et al. (2013) performed study about relations between transformational leadership, organizational learning, knowledge management, organizational innovation and organizational performance. Organizational performance was impacted directly and indirectly through different factors. Knowledge management has indirect impact on organizational performance through organizational innovation. Evaluations of impacts of knowledge management on the organizational success was conducted by Kim (2014). Level of knowledge management was measured in knowledge implementation index and level of organizational success was measured in project performance data (cost, quality, safety, and schedule). Generally positive relationships were found which validate impacts of knowledge management on organizational success. Study of Chuang et al. (2013) examined relationship between knowledge management with information technology support on firm performance. Study first revealed that organizational culture and structure together with incentives facilitate use of knowledge based technology which has positive impact on firm

performance. Rašula et al. (2012) conducted a study about impact of knowledge management practices measured through information technology, organisation and knowledge on organisational performance. Study showed positive affect on organisational performance. Additionally study revealed that knowledge management heavily relies on technology although many organisations experienced difficulties in its effective use.

Effect on knowledge management programs on value creation in Icelandic firms was analysed by the study of Edvardsson & Oskarsonn (2011). Knowledge management was described as organizational culture and / or structure that contributes to value creation in form of intangible assets in firms like customer capital, innovation and human capital. Findings of the study shows that correlation is positive but as number of respondents was low, finding need to be interpreted with some caution. Similar research was conducted by Schiuma et al. (2012) with analysing correlation between knowledge management processes and value creation. Results of the study indicated that knowledge management processes impacts positively on value creation through impacting organizational processes by aligning knowledge management processes with organizational structure.

Tan & Wong (2015) examined the effect of knowledge management on manufacturing performance which was defined as production and operational performance measured as quality, time, cost, flexibility and customer satisfaction. Result showed that knowledge management processes and factors have significant and direct effects on manufacturing performance. On research of relationship between knowledge transfer and product development inside organization Kumar and Ganesh (2011) discovered significant influence of knowledge transfer processes to the efficiency of product development.

In table 2 we will summarize our literature review on selected topic as a number of papers that research influence of either knowledge management processes or knowledge infrastructure elements on one of the performance indicators. As some papers examined influence of selected knowledge management element on two different performance indicators, we split the value of this paper by half, so that paper gave each performance indicator value of 0,5.

Table 2: Number of papers researching linkage between KM elements and performance indicators

Performance indicator	Knowledge management processes	Knowledge infrastructure elements
Financial performance	0,5	0,5
Innovation performance	1,5	1
Growth performance	1	0
Operational performance	2	0
Competitive advantage	0	0,5
Value creation	1	1
General performance indicators	5,5	5,5
SUM	11,5	8,5

5 CONCLUSION

With knowledge management being fully recognized in business and academic world, studies about its relevance are regularly conducted. The number of studies examining impact of knowledge management on organizational performance has been increasing in recent years. Many researchers were trying to examine the relation and its strength between knowledge management and various performance indicators. Knowledge management was most often studied through knowledge management processes and knowledge infrastructure elements which both together form concept of knowledge management capabilities in organization. On the other side organizational performance was measured or presented in many different forms from financial to non-financial and to combination of many performance indicators. In majority of studies researchers used general concept of organizational performance that indicated organizational performance through several perspectives using different kind of performance indicators.

Relation between concept of knowledge management capabilities, consisting of knowledge management processes and knowledge infrastructure, and organizational performance, was confirmed in majority of studies to at least some degree. Linkage can be direct or indirect with former being more often. Strength and direction of impact on organizational performance was sometimes not clearly visible or examined in studies and performance indicators were defined too general. Consequently conclusions in studies were presented rather general focusing more on existence of relations between researched variables. Nevertheless impact on knowledge management was confirmed in recent studies and thus research of strength of relation between knowledge management and more specific organizational performance indicators, financial and non-financial indicators, could be interesting topic for future empirical researches.

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