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Organizational Learning Capacity Impact on Sustainable Innovation :The Case Of Public Hospitals

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Abstract

The New economic conditions which came to agenda with the process of globalization for obtaining competitive advantage forced the firms to be dependent to the innovativeness and differentiation. In this framework, the firms in order to gain more competitive advantage have formed the new processes of inovativeness in both private and public sector. Many economists and management scientists accepted "Knowledge Economy" and "Knowledge Management" concepts such as the need to use as a source of information has brought companies for Ensure the sustainability of innovation activities carried out by enterprises. "Organizational Learning" was the concept of obtaining the information. Now businesses to learn what they have learned in the development of storage and new products have begun to use their knowledge. Directly related to the service provided to hospitals to human life and sustainable quality of life reveals how important it is to learn to innovate. The purpose of this research is to determine that public institutions under the Ministry of Education and Research Hospitals Health personnel to determine the effect on the perception of organizational learning capacity for sustainable innavation.

Keywords: *Innovation, Organizational Learning Capacity, The Health Care System*

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1. Introduction

Learning capacity is thought to be the key factor in the growth of innovation and organizational effectiveness (Chiva ve Alegre, 2009: 323). In today's global economy, and the world of business must develop the capacity to innovate products and processes, organizational learning ,in order to maintain a

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competitive advantage to survive. Knowledge, technology, and health care workers who labor-intensive services, to learn, to change and be open to new ones is essential for success. This study conducts health care information technology and labor-intensive, and the capacity of health workers to determine the capacity of organizational learning is to determine the impact on sustainable innovations. To be informed about organizational learning capacity of hospitals guidance for other researchers.

2. Literature Survey and Hypothesis

2.1. The Concept Of Learning

There are two consequences of the innovation process; innovation and learning. Measure of success in innovation is commercial. From this perspective, the acquisition of technological knowledge is valuable, because technological knowledge drags further innovations. (Senge, 1994: 9-13)

2.2. The Concept Of Organizational Learning

Organizational learning process is one of the main discussion points on management literature. Organizational learning, refers to organizational change in knowledge, presence supplement the information in question, the transformation, or detract. In the literature, many researchers reported intellectual abilities of employees developed and armed with the knowledge of employees accelerate the development of the organization by learning. Also organizational learning activities is recognized as a dynamic process for evaluation of organizational knowledge, dissemination and creation (Yogesh, 1996; Fiol and others stated (1985), "Organizational learning" as to have a better knowledge and understanding of organizational efficiency through the development. Organizational learning, includes both conscious and unconscious self elements and acquisition of knowledge, access to information, evaluation of information should be considered as affecting the organizational process (Easterby and Lyles, 2003).

2.3. Innovation and Varieties of Innovation

The alterations, differences and renewals built in the methods of doing business, in services and products for the purpose of creating economical and social value is called as innovation. It is a crucial means of competition since it amplifies productivity and profitability provides penetrating into new markets and enlarging the existing markets. The economies, in which productive, profitable and powerfully competitive firms are operating, develop. Consequently, for countries innovations are the most important factor which guarantees the proliferation of employment, ongoing grow up and social welfare. (Elçi, 2007)

Innovation of Product: This can be defined as putting a new product or service into the market or making significant progress in the contents or in the usage intention of a product/service. Those progresses might be in technical specifications, in components, in software or in other functional features. Product innovation ensures the usage of new knowledge and Technologies or might be based on the use of new combination of an existing information or technology (OECD, 2005).

Innovation of Service: An approach to a new or significantly altered service, innovation and difference in the system of presentation and distribution of the service lead to Service Innovation. Such innovations require not only display of technological and organizational abilities of firms operating in the sector of services but also requires augmentation their public relation skills and be restructured as per conditions. (Elçi, 2007)

Innovation of Process: To implement a new or significantly altered production method or distribution method. This may include alterations in the technique of production and distribution, technical equipment

or software. Innovation in process aims at reductions in unit production costs or distribution costs (OECD,2005).

Innovation of Organization: The enterprise has been carrying on business applications in internal and external relations within the frame of a new organizational method. Organizational innovation aims at decreasing managerial costs, transaction costs, augmenting the performance and work satisfaction of firm and thus increasing labour production or reducing the cost of presentation (OECD,2005).

Innovation of Marketing: Innovation of Marketing means to use new marketing methods comprising great changes in design, packaging, distribution or pricing of a product. Innovation of marketing aims at shifting customer requirements to newly opened market or to a new position, of course, with the target of increasing sales (OECD,2005).

2.4. Innovation In Health Sector

The goal of innovation in health is human. Technological advances affect human lives and quality of life directly. The aim of the health sector is having a healthy population. A healthy population increases productivity and the amount of labor (Kiper, 2010). Innovative products and services, diagnosis and treatment increases the possibilities of the country and the company "first started," provides priority and brings competitive advantage and increases export potential. The health sector Research and Development (R & D) and innovation capacity also spread to other sectors. Increase in the level of production and exports improves employment and the sustainability of growth and quality of life.

In health sector in advanced economies, the production of goods and services is the value of 7% of GDP and employment rate stood at 10%. Total health expenditure to GDP ratio will come to 16% out in 2020 is calculated. Rapidly growing health sector is the largest source and user of innovative technologies. Turkey, in innovative products and services in the health sector has significant opportunities. With the population size and dissemination of health insurance, the increasing demand for health care is an important source. Supporting innovation will contribute both improvements in public health and the economy. Innovation has a vital importance for the health sector. Innovation and progress in the health sector affects human life and the quality of life directly. As a result of increasing population and an aging, disease, changing the structure, consequently chronic diseases and long-term care needs are increasing. With increasing and aging population, health service provision, promotion and financing, holding an important place in public spending, health and sustainability of social security systems, makes it difficult. With the rise of income level, the demand for better quality health care is increasing. In parallel with these developments, countries aim to expand health insurance coverage and coverage of the whole community. Rising health care expenditures in the sector, the search for cost control and productivity releases occur (Gökovalı, 2009). International studies show the increase in health spending, economic growth tends to the realization that more than 50%. European Union, the EU-15 countries, with around 9% of health expenditures, the share of GDP, 16% will come out in 2020, is estimated (European Commission, DG Enterprise and Industry, 2004). In Turkey, 6% in 2007 from a level of health expenditure share in GDP, 9.7% until 2033 to reach, is estimated (the OECD and The World Bank, 2008).

2.5. Research and Development Activities In Health Sector

In Turkey, the R & D activities in the health sector is led by the Ministry of Health, Refik Saydam Hygiene Center Presidency, the medical faculties of universities, TÜBİTAK, including the public, university and commercial sector. However, R & D activities in the field of health is very low, the encouragement of R&D activities should be supported. In countries, scientific and technological

advancing, R & D expenditure, and its share in GDP, the manpower working in R & D activities, and the ratio of the population, R & D activities, patents, the number of scientific publications, Nobel Prize, product, process, and so on the points are measured. In Turkey, the R & D expenditures are by 10% level of total expenditures. R & D activities in the field of health being carried out by public, university and commercial sector. In Turkey, between R & D activities in the health sector, biotechnology and genetic research, including priority areas, cancer and circulatory diseases, diagnosis and treatment, the elimination of infectious and parasitic diseases (microbiology, epidemiology), pharmacology, maternal and child health, population planning and fertility control, environmental protection measures, surgical and clinical techniques and equipment development, the construction of artificial tissues and organs, natural tissue and organ transplant technology are importance (Ministry of Health, 2001).

2.6. Sustaining Innovation in the Health Sector

Turkey has significant opportunities in innovative products and services in the health sector. Population, health care needs, due to geographical location Europe, Middle East and Central Asian markets being close, create innovative products and services for the health sector are an important source of demand. For EU citizens to receive a cross-border services, facilitating initiatives, citizens outside their own countries, the use of health services are supported (Daver, 2002, 345-362.). Turkey, in order to meet this potential demand, give priority to health tourism. Health tourism is increasing and financing of health services delivery improving the innovative practices (innovative therapies, drugs and devices have been used in Turkey, can be transferred to electronic health records, health insurance systems in Europe which operates systems, et al.). Turkey, the health sector will bring opportunities for innovation and competitive advantage of this potential demand evaluate as an opportunity.

3. Methodology

The purpose of this research is to determine that public institutions under the Ministry of Education and Research Hospitals Health personnel to determine the effect on the perception of Organizational Learning Capacity for Sustainable İnavasyon. It was planned as cross sectional and defining study. The research was fulfilled between 25th March – 25 April 2011 at 17 hospitals giving health services at the status of Training and Research Hospitals connected to the Ministry of Health and the 147 managers 23 Research and Development staff, 217 workers constructed the universe of this research. The data of the research collected by taking into consideration transportation circumstances of hospitals having mentioned characteristics, by using the questionnaires “Related to Determining Awareness of Workers on Learning Capacity and Innovation” constructed by researchers with the intermediary of quality coordinators of hospitals registered at City Health Management Performance and Quality Coordinatorship 164 of the questionnaires were answered by e-mail and 193 of them were answered through face to face discussions. Thus, totally 357 questionnaires were returned. In the form of questioners, primarily a short explanation about the definition of innovation and renewals in the presentation of services was given so that the answering individuals would not misunderstand innovation. In the first section questions which could determine the characteristics of answering person and hospital are prepared. In the second part, questions about organizational learning capacity in the third section, the determination of whether hospitals could implement innovation or not was done. Statistical appraisal of the data reached as a result of the research was analysed with SPSS programme 15.0 version. Features of the establishment, frequency disperse of problems were handled and in order to determine variable relations regression analyses are applied.

Set of 14 questions related to organizational learning capacity have been prepared in accordance with 5-point Likert scale.. The questionnaire which was constructed for the purpose of determining the opinions of personnel related to innovation and existing situation of establishments comprises **32 expressions**. These expressions are scaled from “the most” to “the least” and they have grades changing from 1 to 5 choices. Expressions are prepared totally positive In the research, in the answers that managers and workers replied to the questions related to innovation, “the most” and “much/many” were considered together, “the least” and “less” were considered together and thus the ratio of positivity in the answers to the questions were calculated. Questionnaire application is decided that was prepared by (Chive and Alleger, 2009:323-340) and In order to determine the internal consistency of the survey questions, Cronbach's coefficient was calculated. The internal consistency of the survey questions designated as Cronbachs = 0839.

4. Findings and Result

Table 1. Disperse of characteristics pertaining to the answering individuals and to hospitals

Number of answered people %	Number of answered people %
<p><u>Sex</u></p> <p>Women 153 Men 204</p>	<p><u>Number of people working at the establishment</u></p> <p>50 – 99 4 100 -119 7 200-299 3 300-399 0 400-499 1 500+ 3</p>
<p><u>Education</u></p> <p>Primary School 24 High School 96 University 157 Postgraduate study 80</p>	<p><u>Year of Establishment</u></p> <p>Before 1980 7 1980-1989 4 1990-1999 1 2000+ 5</p>
<p><u>Status</u></p> <p>Top Manager 117 R & D Responsible 23 Other workers 217</p>	

It is seen that 35.2% of hospitals where the questionnaire is implemented started their operations after 1990 and 64.8 of them started before 1980. When the classification of hospitals taken into consideration, 41.1% of the hospitals answering the questionnaire are of small size, 58.9 % of the hospitals are of big size hospitals.

Table 2. Percentage of Positive Replies Related to Innovation

Degree of communication between the top and the subordinates	59,9%
Perception level of establishments related to innovation	55,4%
Team spirit among units in which Project realized	68,7%
Support of transformation application in health innovation	76,5%

Table 3. Percentage of Positive Replies Related to Organizational Learning

Risk Taking	54,9%
Openness and Experience	63,7%
Interaction with the External Environment	75,4%
Knowledge Transfer and Integration	64,1%
Participatory decision-making	46,5%

In the questionnaire independent variables are Average Number of Employees, Age of the Establishment, Average R & D Expenditures, Knowledge Transfer and Integration, Interaction with the External Environment , the degree of communication between subordinates and superiors and dependent variable Organizational Learning Capacity , The Perception of Innovation. The hypothesis related to perception level for organizational learning capacity and innovation is presented below.

H1: *As average number of employees increase, organizational learning capacity increases.*

H2: *As the age of establishment increases, the possibility to make organizational learning capacity*

H3: *There is a meaningful relation between average research-development expenses and organizational learning capacity .*

H4: *There is a meaningful relation between managers' encouraging behaviour for innovation and organizational learning capacity.*

H5: *As the communication degree between the top and the subordinate increases, organizational learning capacity*

H6: *There is a meaningful relation between organizational learning capacity and perception level related to innavation*

H7: *There is a meaningful relation between average knowledge transfer and integration and perception level related to innavation*

H8: *There is a meaningful relation between average interaction with the external environment and perception level related to innavation*

Table 4. Regression Analysis Results on Organizational Learning Capacity and Perception Level Related to Innovation

Independent Variables	Depended Variables	Standardized β	Adjusted R ²	t	F Value	Model Sig.
Average Employee Number	Organizational Learning Capacity	-,032	,342	783	34,868	,000
Average Research Development Expenses Degree		,271**		3.234		
Age of Establishment		-,248		,347		
Managers Behaviour Innovation (Management Support)		,197*		1.213		
Degree of Communication Between the top and the subordinates		,554**		3.220		
Perception Level Related to Innovation		,277**	,298	1.113	24,261	,000
Knowledge Transfer and Integration	Perception Level Related to Innovation	,237**	,326	1.217	32,374	,000
Participatory Decision-making		156*		2.267		
Organizational Learning Capacity		,277		1113		
Interaction with the External Environment		,590	,385	1.317	29,543	,000

* : $p \leq 0.05$ ** : $p \leq 0.01$ *** : $p \leq 0.001$

In this study, regression analysis is also conducted to test the hypotheses and to define the direction of relations. According to the Table 4:

H1: When compared to average employee number and organizational learning capacity, there is a negatively directed correlation between the number of employee and organizational learning capacity ($\beta = -,132$, $p=0,000$). H1 hypotheses is not accepted

H2: There is a negatively relation between the age of establishment and organizational learning capacity ($\beta = -,248$ $P=0,000$). H2 hypotheses is not accepted

H3: There is a positive relation between average Research Development expenses and organizational learning capacity ($\beta = ,271$, $P=,000$). H3 hypotheses is accepted.

H4: There is a positively directed relation between managers' encouraging behaviour for innovation organizational learning capacity ($\beta = ,197$ $P=0,000$). H4 hypotheses is accepted.

H5: There is a positively directed relation between the degree of communication of the top and organizational learning capacity ($\beta =0,554$ $P=0,000$) H5 hypotheses is accepted.

H6: There is a positively relation between organizational learning capacity and perception level related to innovation ($\beta =,277$ $P=0,000$) H6 hypotheses is accepted.

H7: There is a positive relation between knowledge transfer and integration and perception level related to innovation ($\beta = ,237$ $P=,000$). H7 hypotheses is accepted.

H8: There is a positive relation between average interaction with the external environment and perception level related to innovation ($\beta = ,590$ $P=,000$) . H8 hypotheses is accepted.

5. Results and Suggestions

Variables given above and nominal variables, average employee numbers and independent variable groups, meaningful differences were found only by output scales ($P>0,05$). As the number of employees of establishments increase, organizational learning capacity and perception level related to innovation reduce. Small hospitals with younger age have less employees by using the latest Technologies in presenting service and hospitals having these features tend to make innovations more than the others. Therefore, there is an adverse relation between making innovations and the age of establishment and number of employees. Usage of advanced Technologies reduces the need of labour simultaneously. Thus hospitals founded with advanced technology employ less labour. Managers of older hospitals display more conservative behaviour and consequently with the usage of old technology they employ more personnel and their innovation number is less when compared to new hospitals.

When hospitals are taken into consideration, because of conscious customer demands currently and implementations of health standards, service should be qualified, reliable and in the manner of meeting the needs. This compulsion steers into making innovations continuously in health applications. On the other hand, some obligatory standards might restrict innovation operations. In this study ;there is a positive relation between average Research Development expenses and organizational learning capacity ($R= 0,271$, $P= ,000$) and the perception level related to Innovation and organizational learning capacity ($\beta =0,277$ $P=0,000$) . In many researches the result can be reached that Research and Development expenses are the characteristic of innovation enterprise. But as Cabral and Traill (2001) found as an outcome of their study; these expenses has no impact on output of innovation works. Only half of the firms in Canada (65% of all firms) which are performing Research and Development operation have applied innovation successfully and they have created a new product or process. Evangelista and Mastrostefano (2006) reached the result that innovation strategies of enterprises cannot be defined with their Research and Development connections. Evangelista ve Mastrostefano (2006).In this study ; The regression analysis results are defined and β coefficient number; Relationship between organizational learning capacity and perception level related to innovation are positive.In the study we have performed, the ratio of support from management for innovation and new ideas has been found as 55.4%. When firms are taken into consideration generally, it is claimed by Therrien as well (2000) that ideas of managers do not have a meaningful effect on innovation. This demonstrates that there could be differences among the factors influencing innovation through sectors. The impact of these mechanisms on product innovation performance is also analyzed Chiva and Allerge (2007). Chiva and Alegre use structural equations modeling to test our research hypotheses on a data set from the ceramic tile industry. Results support our conceptual model and underline the importance that learning has for innovation performance.

5.1.Suggestions

Innovation conscious should be improved in hospitals,system and technical equipment for innovation should be improved in hospitals,trainings should be organized about the management of innovation,an awareness of innovation should be created,for the objective working in innovation in unity, in general of establishment, there should be the unity of ideas and understanding and a team spirit should be improved,In order to manage innovation cycle, necessary systems should be set up, personnel and

managers of establishment should be encouraged for their innovation ideas and they should be admitted, a method of selection among suggested innovation ideas should be determined, strategies to follow should be determined while practising selected innovation ideas, an organizational culture should be formed, having a special and important place in the hierarchy of innovation values, Innovation targets should be formed and evaluated, Communication barriers between managers and employees or among employees should be removed, lack of reliance between workers should be overcome, the leader responsible for managing innovation process should have proper leadership characteristics, written work designs which determine innovation map should be formed and it should be prepared by a few people through participative method, other individuals and establishments should be cooperated in the issue of innovation of the establishment, researches and investments in the field of health should be planned, substructure of human power for innovation should be planned according to strategic needs and should be supported. Also Managers should work to create an environment to increase the capacity of learning, questioned the information work done and experiences are shared, learning can take place freely

6. References

- Cabral, J., Traill, W. (2001). Determinants Of A Firm's Likelihood To Innovate And Intensity Of Innovations In The Brazilian Food Industry. *Journal On Chain And Network Science*, Holanda, 1, 33-48.
- Chiva, R. And Alegre, J.(2009), Organizational Learning Capability and Job Satisfaction: an Empirical Assessment in the Ceramic Tile Industry” *British Journal of Management* Volume 20, Issue 3, pages 323–340, September 2009 <http://www.ris.mersin.info/files/filesweb/File/inovasyon%20konusmasi.doc>
- Daveri F. (2002). The New Economy in Europe, 1992–2001, *Oxford Review of Economic Policy*
- Elçi, Ş. (2007), "Seminar on the Ege's Exporter Associations innovation competition", İzmir.
- Easterby-Smith, M., and M. Lyles. (2003). *The Blackwell handbook of organizational learning and knowledge management*. Oxford: Blackwell
- European Commission, DG Enterprise and Industry, (2004)
- Evangelista, R. and Mastrostefano V. (2006) Firm size, sectors and countries as sources of variety in innovation *Economics of Innovation and New Technology* 15,03 p.247-270
- Fiol C. Marlene and Lyles Marjorie A. (1985). Organizational Learning *The Academy of Management Review* Vol. 10, No. 4 (Oct., 1985), pp. 803-813
- Gökovalı, U. (2009), “Turkey Pharmaceutical Industry Influence on the TRIPS Agreement and the "Finance, Political and Economic Reviews, 534, 67-76
- Kiper M. (2010), "Ar-Ge ve İnovasyon Süreçlerinde Yeni Yaklaşımlar ve Bu Kapsamda Türkiye için Öneriler"
- OECD (2010), Improving Health Sector Efficiency, The Role of Information and Communication Technologies, OECD Health Policy Studies, 19 Nisan 2011 http://ec.europa.eu/health/eu_world/docs/oeed_ict_en.pdf
- OECD and the World Bank (2008), “Turkey”, OECD Reviews of Health Systems, 18 February, 17 Nisan 2011, http://www.oecd.org/document/60/0,3343,en_2649_33929_42235452_1_1_1_37407,00.html
- OECD ve Avrupa Birliği (2005). Oslo Klavuzu. Yenilik Verilerinin Toplanması ve Yorumlanması İçin İlkeler, Üçüncü Baskı, Ekonomik İşbirliği ve Kalkınma Örgütü Avrupa Birliği İstatistik Ofisi, Ankara
- Republic Of Turkey Ministry of Health (2001), "The European Union and Turkey in the Health Sector Research and Development (R & D) activities", Ankara Republic Of Turkey Ministry of Health (2001), "Health at a Glance Turkey", Squadron Offset Printing, Ankara

Senge, Peter M. (1994), *The Fifth Discipline*, Currency Doubleday

State Planning Organization (SPO) (2007), "The Ninth Development Plan Special Commission Report on the Pharmaceutical Industry", Ankara
Drucker, P., (1998), *The Discipline of Innovation*, by Peter Drucker, Harvard Business Review November- December 1998

Yogesh M.(1996). *Organizational Learning and Learning Organizations: An Overview* [WWW document].
URL <http://www.brint.com/papers/orglrng.htm>