Information Management and Business Performance in the Hotel Industry: Effects of Innovations[1]

Rana Özen Kutanıs* & Muammer Mescı**

* Sakarya University,
Management Faculty, Sakarya, Turkey
** Düzce University,
Akçakoca School of Tourism and Hotel Management, Düzce, Turkey

Abstract

The main purpose of this study is to determine whether "innovation management" has mediating effect in the relationship between knowledge management and business performance. In the framework of this purpose, the five-star hotel enterprises functioning in Turkey are included in this research. The method of the research is based on quantitative research method. In the research, the data is gathered utilizing the survey technique in the extent of quantitative research method. Research data is gathered from upper level managers of hotel business enterprises mentioned earlier. The data is gathered from 321 hotel business enterprises in total. Research data is subjected to analysis with the aid of Structural Equations Modeling (Lisrel). In the conclusions of the research, it is determined that "innovation management" has mediating effect in the relationship between knowledge management and business performance. The main deficiency of the study is that the research is carried out only in five-star hotel enterprises. Another deficiency of the study is that the research is carried out only within five-star hotel enterprises. As a recommendation for further studies that are similar to this study, researches can be carried out including three, four and five star hotels. Also, it can be compared with results of previous studies that will be carried out in hotel enterprises.

Keywords: Knowledge management, business performance, innovation management, hotel enterprises

Introduction

Nowadays, with the rapidity of variation being so high, it is a necessity for businesses to use innovation and information management effectively so as to be able to last their presence in the long term and use their skills against their rivals. For businesses to provide superiority against their rivals in globalising world, it is of great

---

importance that they produce new product, use innovation process in entering markets and need information management for the sustainability of this process.

In the search of sustainable rivalry, it is not enough that businesses produce new products, enter new markets and provide different services to consumers. Along with these, businesses need to give importance to "information" source (Tiwana, 2003). The success of the business in an environment where rivalry is intense depends on how well it manages its "knowlwedge" in the market it carries out activities. Today, the businesses that comprehend the importance of knowledge develop strategies, try to comprise a participant organization and use knowledge as a rivalry advantage (Ipçioğlu and Erdoğan, 2004).

Today, organizations encounter with dynamic environment which consists of the consequences of globalization, the decreases in lifetime of products and fast technological modifications. In this situation, organizations should be more creative compared to their rivals and should make innovation constantly in order to be able to grow and continue their existence in the market they are active. In the twenty-first century, innovation brings in success and the advantage of rivaling to the organizations (Gumusluoğlu and Ilsev, 2009). Businesses need to change and renew consistently their products, services, production and management processes so as to continue their existence in the long term. Today, consumers' desire and expectations constantly change. Therefore, businesses should try to accomplish consumer demands by producing new products and services that are not present in the market so as to be able to provide superiority against the rivals and changing consumer preferences of businesses (Durna, 2002).

Performance management is a management process which puts forward the importance of components such as presenting the purposes that are determined in the organization, evaluating the performance of workers, designating feedback and target. Those managers have enough information and skill necessary in issues of performance management principles and processes have importance in terms of providing the efficiency of this process (Helvacı, 2002). Organizations need to determine their targets by force of their presence. The targets that organizations determine should be certain and measurable, and be presented quantitatively within a specific period. In this way, whether and in which extent organizations reach the targets determined can be revealed.

There are some studies aimed at determining the effect of information management and innovation over business performance in literature (Frenz and Gillies, 2009; Mangiarotti, 2010). The speciality of this study making it different from other studies is that it is carried out to determine whether innovation has mediating effect between information management and business performance. Another important difference is that the research is carried out over hotel enterprises active in service sector.

In this study, the impact of innovation between knowledge management and business performance has been studied. In this context, the results of these studies will provide important contributions to literature and provide the opportunity to compare with similar studies present in literature.

Information Management

Information is a concept recovering products and processes, integrating structural ability and capability (Karakoçak, 2007). According to Özdemir (2006),

information is ideational product acquired as a result of thinking, judging, reasoning, reading, investigating, observation and experiment or the thing that is learned. Barutçugil (2002) defines information as personalized informatics that provides the person with comprehending precisely and correctly what is going on around. Zaim (2005) states information as informatics focused on results enured of action. Different from stated descriptions above, Bayram (2010) describes information as processed data that has undergone a certain process.

"Information" is a prominent value in providing rivalry advantage to businesses in global and national economy. For this reason, the businesses which are not able to comprehend the increasing importance of information management may lose the strength of competing. This situation may cause both the business and the society to fall into a significant negation (Karakoç, 2007). It has great importance that according to their needs, businesses subject the information they have to alteration and transformation, and adapt this information to production process (Demirel and Seçkin, 2008). Information management provides businesses with competition superiority and contribution to raise market value. Businesses using information and information management effectively can see earlier than rivals the opportunities that may rise in external environment and this way they can provide a competitive advantage (Gümüştekin, 2004).

"Information management is a new approach allowing individuals, teams and whole organization for information to be acquired, shared and applied colllectively and systematically in order that organizational purposes are implemented better (Barutçugil, 2002)". Information management tries to plan business qualifications and management so as to be able to reveal information based resources and enhance information manegement for businesses to provide competitive advantage (Sajeva, 2010). Information management involves a management understanding based on production, transfer and development of information; constant learning; a global system understanding; development of innovative organization culture; individualism and rivalry. These components should be given importance in order to develop effective information management strategies. The usage of these components efficiently will contribute to the performance of business in a positive way (Marque´s and Simo´n, 2006; Sternitzke, 2010). The main purpose of information management is to make the best of the intellectual capital that the business has and to provide productivity by using it efficiently (Zaim, 2005). However the purpose of information management may differ from business to business. For example, while some businesses use information to get competition superiority; some businesses use it to continue their existance. Information management process generally consists of four basic phases. These are information retrieval, information internalisation, and information sharing and information evaluation.

There are many studies related to information management in literature. For example, Zack et al. (2009) designated that information management applications have an important effect on organization performance. It is determined that information about the customer, operational perfectionism, presenting values like product development are necessary for information management applications and using these values efficiently will contribute positively to the performance of organisation. Lo and Chin (2009) developed measurement model of information management performance which is consumer satisfaction based in order to measure information management and perfomance directly within a different study. Writers state that these evaluation

criterions are used for performance measurement of information management. Vaccaro et al (2010) develop a model intended to information management means which are different from the model presented above. It is stated that this model is a system providing an opportunity to determine the effect of information over financial performance as well as market rapidity and new product performance. Ho (2008) carried out a study aimed at the individualistic based effect of information management beyond a general look of the business. In his study, he examines the relationship between individual learning and organizational learning, information management capacity, and organizational performance. It is designated that individual learning has effect directly and indirectly upon organizational learning and information management capacity and organizational performance. Also the writer states that organizational learning and information management capacity have effect directly upon organizational performance.

Innovation in the Context of Information Management

It is necessary to change the production and management processes of products in order to survive in competitive market. The businesses which are not aware that they need to change are in a situation of destruction in time (Bayhan 2004). In global rivalry environment, businesses need to adapt information into innovative processes so that they can provide competitive superiority in continuously changing conditions. It is a necessity to manage information in order to adapt information into innovative processes (Ogut et al., 2007). One of the most important dimensions of innovation is asserting value. Value includes certain periods of effort, output, cost, time and income. Value is a factor providing opportunity to making innovations in quickly changing market (Man, 2001). Uzkurt (2010) states that innovation is an important value for both today's national economies and businesses and with this aspect innovation is stated under three titles in respect to its contributions to economy, society and businesses. These are;
- Sustainable economic growth for national and regional economies,
- Increasing social progress and level of welfare for societies,
- Contributing to increasing competitive power both for businesses and national economies.

Information generally concretizes technological innovation. The ideas of businesses about information management today are in the direction of constituting a structure relating to information management activities (Heffner and Sharif, 2008). Organizations try to transform information into a valuable factor in the business and use it flowingly (Yen and Chou, 2001). As well as effective strategy, innovation and information based rivalry is an important value for businesses. For this reason, information and innovation are critical sources for sustainable competition advantage of businesses (Xu et al., 2010). Uzkurt, (2010) states that innovative businesses need to have a more flexible structure that can get the information and knowledge necessary for innovation from outside and transform these into innovation inside the business. The writer also states that revealing innovation ideas and sharing them on the part of workers in the business obliges the necessity of a more flexible structure where ideas are discussed easily.

Information and innovation are among the most important indicators of national and regional economy (Toivonen, 2007). Today countries need to focus on innovation and information so that they can make progress constantly. Making innovation,

generating information and creating new information are of great importance in maintaining the sustainability of countries' economies (Sharpe and Fernandez, 2007). Innovation is based on information. For the success of innovation, information flow and communication need to be proper and constant (Bayhan 2004). Effective information management makes it possible that innovation activities are made, project durations are shortened, and customer satisfaction and quality are increased (Maqsood et al., 2007). It is seen that at the head of information sources comprised for innovation comes customers, then distributers, competitives and lastly local search units (Marceau, 2007).

Business Performance in the Context of Infoormation Management

When information management is evaluated, it indicates that performance has effects upon entrepreneur competition, abilities and strategic organisational learning. It depends on being able to manage information efficiently and effectively in order to improve information performance in businesses. Information management should be planned, strategies and applications should be carried out in order to improve information management system (Tseng, 2008).

It is rather difficult to determine that to what extent information directly contributes to the performance of the business qualitatively (Frenz and Gillies, 2009). Both internal and external factors need to combine so that information management and business performance develop (Shang et al., 2009). It seen within the studies carried out in literature that businesses using their information management talents effectively will reach a more innovative and better performance (Darroch, 2005). It is ascertained that information management has a positive-sided effect upon businesses' innovation activities, product development and organization outcomes that is workers' improvement (Kiessling et al., 2009).

Information retrieval, internalizing this in organganization content and carrying out the sharing of this information inside the organization constitute a primary part of innovation process. Sharing information is of great importance in the process of innovation. Because an efficient information sharing carried out within the organization may contribute positively to the performance of the organization. Information sharing has an important place within information management. As information contributes to the development of organization's competition competence and performance (Du et al., 2007).

Businesses need to determine their targets primarily in order to be able to maintain performance activities efficiently. Later, according to these targets determined, the businesses need to start the application process. In this process, the business should be able to produce solutions against the faults that may occur in the process of carrying out the determined targets. On the other hand, the business needs to plan the application process efficiently. Thus it is of great importance that application teams are formed.

The Research Method

The purpose of this research is to determine the mediating effect of innovation in the relationship between information management and business performance. In the framework of this purpose, the five-star hotel enterprises functioning in Turkey are included in the research. The research method is based on quantitative research method.

In the research, the data is gathered utilizing the survey technique in the extent of quantitative research method.

In this study, population will constitute sample. Hotel enterprises subjected to the research with complete counting method are listed. These businesses are five-star tourism investment and operation certificated businesses active in our country. The mentioned hotel enterprises, accordingly the number that will constitute the sample, are 349 according to the statistics of 2010 published by Culture and Tourism Ministry. For this reason the sample of the research is set forth as 359 senior managers currently working in these hotel enterprises. The reason in choosing only five-star hotels in determining the research population stems from the fact that this hotels are structured, coordinated, managed and corporated in a more professional way. Research data is gathered through senior managers of mentioned hotel enterprises. Data is acquired from 321 hotel enterprises in total. As population is of accessible magnitude, complete counting method is used. For this reason, a further sampling method is not used in the study.
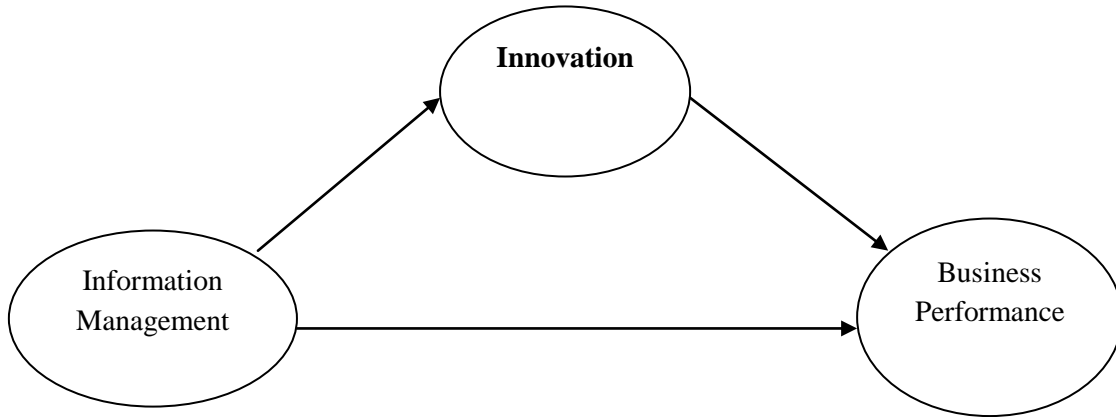

Figure 1: The model that will be tested in the research

In Figure 1, two different regression models are seen for the purpose of testing variables that are subjected to the research. The first model is designed so as to test the relationship between information management and business performance. The second model is constituted with the aim of measuring the mediating effect of innovation in the relationship between information management and business performance.

In the research, survey technique is utulized in order to gather data. After the reviewing of literature done within this scope, survey form is comprised by benefiting from the studies of attitude propositions relating to information management, Selimoğlu (2005); attitude propositions relating to innovation, Soylu and Göl (2010), Ulusoy et al., (2008) and Zona (2009); and lastly attitude propositions relating to business performance, Kılınç et al. (2010). This improved question form is finalized by taking two experts' opinions (as one is an academician and the other one is a consultant). The survey form is comprised of four basic parts. In the first part, there are statements aimed at determining the attitudes of managers relating to information management; in the second part there are statements aimed at determining their attitudes relating to innovation; in the third part there are statements aimed at determining the attitudes of managers relating to business performance and it includes five point likert scale. And in the fourth part, questions aimed at determining the demographic features of attendants are given a place.

After the question form is comprised, pre-application is practised. Pre-application is applied to 30 senior managers between the dates 25 May 2011 and 05 June 2011. When the survey form was applied, first of all information about the topic was given and then the form was left to the managers and after a while it was collected. Later on, the reliability of the data obtained from the collected survey form is measured and the Cronbach alpha value of the data obtained in pre-application is calculated as 0,95. As a result of the test, the general Cronbach alpha of the data occurs above the level 0,7 that Nunnally (1967) indicated. Afterwards, the survey form is examined by expert people of the subject again, and their opinions are received. Lisrel program is made use of in analysing the obtained data. Descriptive statistics techniques like percentage and frequency are utilized for the analysis of demographic ones from tha data.

Measurement models are comprised firstly by making exploratory factor analysis in SPSS program, later on, making a confirmatory factor analysis through LISREL program about each one of the variables of the research. After measurement models are comprised, first of all hierarchical regression analysis (Baron and Kenny Method) and sobel test are made, later path analyses are practiced through Lisrel program so as to measure the mediating effect among variables. The independent variable of the research is information management, the dependent variable is business performance and dependent mediating variable is innovation.

Before starting the analysis, it is maintained whether the data have normal distribution or not. In Lisrel program, the prediction method for the data that indicates a normal distribution feature is Maximum Prediction Method or Generalised Least Squares Method; and for the data that don't have normal distribution, Weighted Least Squares Method and Robust Maximum Likelihood Method are preferred. As a result of the test carried out, it is determined that the data aren't distributed normally. For this reason, Weighted Least Squares Method and Robust Maximum Likelihood Method are used in the research. Within this scope, the data are normalized before starting the analysis.

The Findings of the Research and Discussions

The number of surveys that are returned is 321. When returning rates are considered, the collected surveys' rate of return is % 92,00. The results related to demographic findings of the analysed questionnaires are seen below in table 1. The data, the demographic findings of the managers joining the survey, is obtained by applying frequency and percentage analyses.

Table 1: Results about the demographic structure (n=321)

Demog. Dat.		F	%			F	%
Gender	Female	145	45,2	What is the department that you work in your business?	Front office	49	15,3
	Male	176	54,8		Food-drink	5	1,6
	Total	**321**	**100,0**		Accounting	75	23,4
Age	18-24	37	11,5		Technical service	1	,3
	25-34	168	52,3		Housekeeping	3	,9
	35-44	85	26,5		Sales marketing	19	5,9
	45-54	27	8,4		Human resources	143	44,5
	55-64	1	,3		Other	26	8,1
	65 and over	1	,3		**Total**	**321**	**100,0**
	Total	**319**	**99,4**	Which one is the feature of the operator firm of the corporation you work in?	International Chain	60	18,7
State Of Education	Secondary S.	4	1,2		National Chain	139	43,3
	High School	69	21,5		Private company	112	34,9
	Associate D.	43	13,4		Other	2	,6
	Bachelor's L.	201	62,6		**Total**	**313**	**97,5**
	Total	**317**	**98,8**				
How long have you worked in the sector?	Less than 1	7	2,2				
	1-3 Years	53	16,5				
	4-7 Years	72	22,4				
	8-11 Years	56	17,4				
	12 Years-more	129	40,2				
	Total	**310**	**96,6**				

As it is seen in Table 1, 176 of the managers who have responded to the survey are males and 145 of them are females. In this situation, while the percentage of males is 54,8 % , the percentage of females is 45,2 %. When managers' age groups are analysed; 37 hotel managers (%11,5) are in 18-24 age range; 168 hotel managers (%52,3) are in 25-34 age range; 85 hotel managers (%26,5) are in 35-44 age range; 27 hotel managers (%8,4) are in 45-54 age range; one hotel manager (%3,0) is in 55-64 age range and lastly one hotel manager (%3,0) is in 65 and above age range. When the educational situations of hotel managers, who filled in the survey form, are investigated; it is designated that 4 managers (%1,2) are secondary school graduates, 69 managers (%21,5) are high school graduates, 43 managers (%13,4) are associate degree graduates; 201 managers (%62,6) are postgraduates. When the question regarding how long the managers have worked in the sector is analyzed, the result that 7 managers (%2,2) have worked less than 1 year; 53 managers (%16,5) have worked between 1-3 years; 72 managers (%22,4) have worked between 4-7 years; 56 managers (%17,4) have worked 8-11 years; and 129 managers (%40,2) have worked for 12 years and more is reached. When the departments the managers have worked in are investigated, it is determined that 49 workers (%15,3) work in front office; 5 workers (%1,6) in food-drink; 75 workers (%23,4) in accounting; 1 worker (%0,3) in technical service; 19 workers (%5,9) in sales marketing; 143 workers (%44,5) in human resources; and 26 workers (%8,1) in different departments. According to the financing property of hotel enterprises, it is designated that 60 businesses (%18,7) have international chain; 139

businesses (%43,3) have national chain; 112 businesses (%34,9) have private company; and 2 businesses (%0,6) have other financing properties.

Findings Concerning Information Management Scale: Confirmatory factor analysis is used in testing the information management scale. Confirmatory factor analysis is an extension of explanatory factor analysis model. Confirmatory factor analysis (DFA) is a kind of YEM providing opportunity to measure the relationships between latent variable (factors) and observed measurements (variable) (Yılmaz and Çelik, 2009).
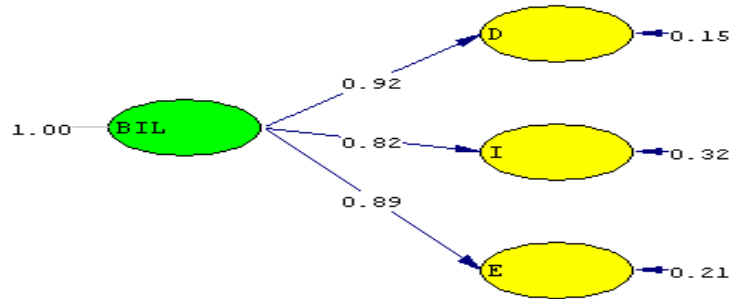
Chi-Square=112.88,   df=85, P-value=0.02326,   RMSEA=0.032

*Notes***:** BIL=Information Management, D= Information Evaluation, I= Information Internalisation, E= Information Retrieval

Figure 2: The diagram and standardized solution values produced for information management second-level dfa

As it is seen on the model, p value is 0.02326. This value indicates that it is meaningful at .05 level. In confirmatory factor analysis, χ^2 is subjected to evaluation by being proportioned to the degree of freedom (sd). In this regard, when these values are proportioned to eachother (χ^2=112.88/sd=85) it is seen that the result is χ^2/sd = 1.33 . χ^2/sd rate being 3 corresponds to an acceptable consistency, and its being 2 corresponds to a good consistency. As a result of the analysis carried out, it is understood that χ^2/sd = 1.33 rate assigns good consistency value. RMSEA being less than .05 indicates good consistency, and its being less than .08 indicates an acceptable consistency. In this regard, the consistency value acquired as a result of the analysis carried out is designated as RMSEA=0.032. As RMSEA consistency value appearing as a result of the analysis is less than .05 it can be stated that the acquired consistency value has a good consistency.

In the analysis, modifications (correction indexes) are made use of to this model in order to get a good measurement model. In Figure 2, information variable (BIL) which is a senior implicit (latent) variable explains the variables of D (information evaluation), I (information internalisation) and E (information retrieval). When the relationships between these variables are examined, D's standardized value is .92 (R^2=0.85), I's standardized value is .82 (R^2=0.67) and E's standardized value is .89 (R^2=0.79) . According to these results, it is designated that, information management explains D factor mostly, next E factor and lastly I factor among second-level variables. When t-values of second-level variables (factors) of information management are examined, it is calculated that D's t-value is 9.96, I's t-value is 8.14 and E's t-value is

4.89 . If t-values exceed 1.96 it is meaningful at the level of .05 , if t-values exceed 2.56 it is meaningful at the level of .01 (Çokluk et al., 2010). In this context, when the t-values are examined, it is designated that all the values are meaningful at the level of .01.

Table 2: Consistency criterions generating for information management second-level model

Measure of Consistency	Value	Consistency
χ^2 /sd	1.33	**Good Consistency**
RMSEA	0.032	**Good Consistency**
SRMR	0.038	**Good Consistency**
NFI	0.960	**Good Consistency**
NNFI	0.990	**Good Consistency**
CFI	0.990	**Good Consistency**
GFI	0.960	**Good Consistency**
AGFI	0.940	**Good Consistency**
PGFI	0.680	**Good Consistency**

Consistency criterions of measurement model are seen in Table 2. According to this, it is determined that all of the consistency criterions have good consistency. "One of the consistency criterions that doesn't take part in the table is the critical N (CN) value that the sufficiency of research sample is evaluated. In YEM, a value of 200 and over is accepted as an indicator of an adequate model consistency in terms of critical N statistic (Yılmaz and Çelik, 2009)". The critical value of this measurement model is designated as 330.11 . It can be stated that it is adequate for the sample with 321 units used in this research.

Findings Concerning Innovation Scale: Confirmatory factor analysis is used in testing the innovation scale. Confirmatory factor analysis is an extension of explanatory factor analysis model.
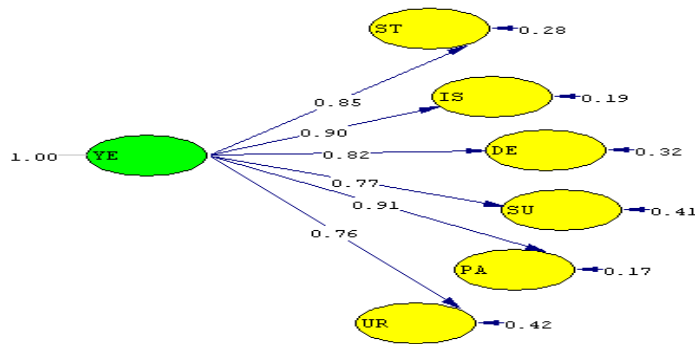
Chi-Square=333.28, df=181, P-value=0.00000, RMSEA=0.051

Notes: YE=Inovation, ST=Strategic Innovation, IS=Business Models Innovation, DE= Experience Innovation, SU=Process Innovation, PA=Marketing Innovation, UR=Product Innovation.

Figure 2: the diagram and standardized solution values produced for second-level dfa related to innovation scale

As it is seen on the model, p value is 0.00000. This value indicates that it is meaningful at .01 level. When analysis is carried on it is seen that χ^2/sd(χ^2=333.28/sd=181) value is 1.84. As a result of the analysis carried out, it is understood that χ^2/sd = 1.84 rate assigns good consistency value. It can be stated that the consistency value acquired as a result of the analysis carried out is RMSEA=0.051 and that this value has an acceptable consistency.

In Figure 3, the innovation variable (YE) which is a senior implicit (latent) variable explains the variables of Strategic Innovation (ST), Business Models Innovation (IS), Experience Innovation (DE), Process Innovation (SU), Marketing Innovation (PA) and Product Innovation (UR). When the relationships among these variables are examined, ST's standardized value is .85 (R^2=0.72), IS's standardized value is .90 (R^2=0.81), DE's standardized value is .82 (R^2=0.67), SU's standardized value is .77 (R^2=0.59), PA's standardized value is .91 (R^2=0.83) and UR's standardized value is .76 (R^2=0.58) . According to these results, it is designated that innovation scale explains PA factor mostly, then IS factor, later ST factor, after that DE factor, later SU factor and lastly UR factor among the second-level variables. When t-values of second-level variables (factors) of innovation scale are examined, it is calculated that ST's t-value is 13.57, IS's t-value is 10.79, DE's t-value is 8.37, SU's t-value is 10.28, PA's t-value is 9.71 and UR's t-value is 7.22 . When the t-values are examined, it is designated that all the values are meaningful at the level of .01.

Table 3: Consistency criterions generating for second-level model of innovation scale

Measure of Consistency	Value	Consistency
χ^2 /sd	1.84	Good Consistency
RMSEA	0.051	Good Consistency
SRMR	0.052	Acceptable
NFI	0.950	Good Consistency
NNFI	0.970	Good Consistency
CFI	0.980	Good Consistency
GFI	0.910	Acceptable
AGFI	0.880	Acceptable
PGFI	0.710	Good Consistency

Consistency criterions of measurement model are seen in Table 3. According to this, it is determined that consistency criterions have good and acceptable consistency. The critical value of this measurement model is designated as 218.71. It can be stated that it is adequate for the sample with 321 units used in this research.

Findings Concerning Business Performance Scale: Confirmatory factor analysis is used in testing the business performance scale. Confirmatory factor analysis is an extension of explanatory factor analysis model.
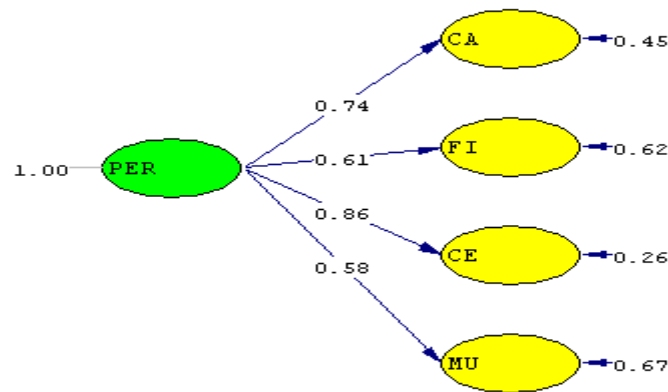
Chi-Square=169.32, df=85, P-value=0.00000, RMSEA=0.056

Notes: PER= Business of Performance, CA=Employees, FI=Finance, CE=Environment, MU= Customer.

Figure 4: The diagram and standardized solution values produced for business performance second-level dfa

As it is seen on the model, p value is 0.00000 . This value indicates that it is meaningful at .01 level. When the analysis is carried on it is seen that $\chi^2/sd (\chi^2=169.32/sd=85)$ value is 1.99 . As a result of the analysis carried out, it is understood that $\chi^2/sd = 1.99$ rate assigns good consistency value. As a result of the analysis, it can be stated that the consistency value acquired is RMSEA=0.056 and that this value has an acceptable consistency.

In Figure 4, the business performance variable (PER) which is a senior implicit (latent) variable explains the variables of Employees (CA), Finance (FI), Environment (CE) and Customer (MU). When the relationships among these variables are examined, CA's standardized value is .74 ($R^2=0.55$), FI's standardized value is .61 ($R^2=0.37$), CE's standardized value is .86 ($R^2=0.74$) and MU's standardized value is .58 ($R^2=0.34$). According to these results, it is designated that business performance explains CE factor mostly, later CA factor, then FI factor and lastly MU factor among the second-level variables. When t-values of business performance's second-level variables (factors) are examined, it is calculated that CA's t-value is 8.63, FI's t-value is 6.63, CE's t-value is 7.82 and MU's t-value is 5.95 . When the t-values are examined, it is designated that all the values are meaningful at the level of .01.

Table 4: Consistency criterions generating for second-level model of business performance

Measure of Consistency	Value	Consistency
χ^2/sd	1.99	**Good Consistency**
RMSEA	0.056	**Acceptable**
SRMR	0.058	**Acceptable**
NFI	0.920	**Acceptable**
NNFI	0.950	**Acceptable**
CFI	0.960	**Acceptable**
GFI	0.930	**Acceptable**
AGFI	0.910	**Good Consistency**
PGFI	0.660	**Good Consistency**

Consistency criterions of measurement model are seen in Table 4. According to this, it is determined that consistency criterions have good and acceptable consistency. Also, the critical value of this measurement model is designated as 222.24 .
Structural equation modeling is used in testing information management and business performance scale. Hypothesis is determined before passing on to analysis.

H1: Information management effects business performance positively.
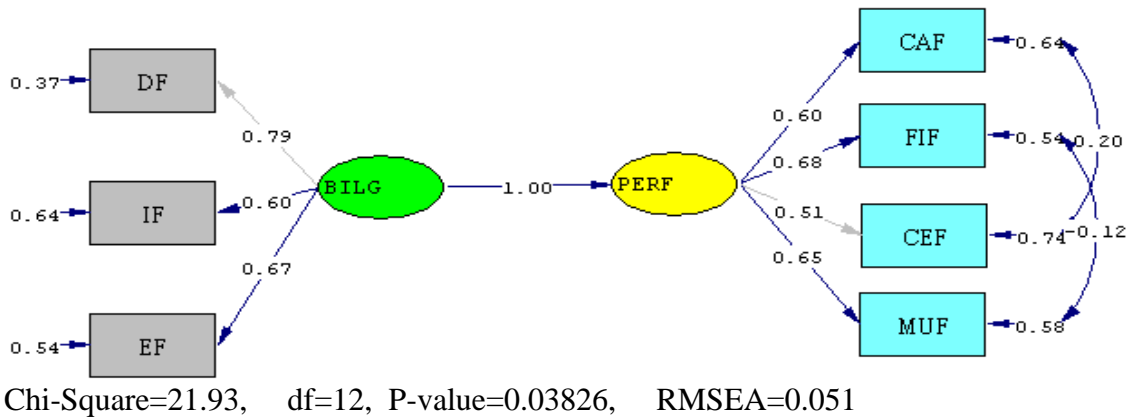
Chi-Square=21.93,   df=12, P-value=0.03826,   RMSEA=0.051

Notes: BILG=Information Management, DF= Information Evaluation, IF= Information Internalisation, EF= Information Retrieval, PERF= Business of Performance, CAF=Employees, FIF=Finance, CEF=Environment, MUF= Customer.

Figure 5: The diagram and standardized solution values produced for information management and business performance measurement model

In Figure 5, when the relationships between variables in the model are examined, it is seen that information management (BILG) effects business performance (PERF) positively. H1 is accepted depending upon this result. The standardized solution value regarding information management (BILG)'s effect over business performance (PERF) is 1.00. When t-values of measurement model are examined, the t-value of information management (BILG) over business performance (PERF) is 8.56. In this regard, it is designated that t-value is meaningful.

As it is seen on the model, p value is 0.03826. This value indicates that it is meaningful at the level of .05. When analysis is carried on, it is seen that $\chi^2/sd(\chi^2=21.93/sd=12)$ value is 1.82. As a result of the analysis carried out, it is understood that $\chi^2/sd = 1.82$ rate assigns good consistency value. As a result of the analysis, it can be stated that the consistency value acquired is RMSEA=0.051 and that this value has an acceptable consistency.

Table 5: Consistency criterions generating for information management and business performance measurement model

Measure of Consistency	Value	Consistency
χ^2 /sd	1.82	Good Consistency
RMSEA	0.051	Acceptable
SRMR	0.027	Good Consistency
NFI	0.098	Good Consistency
NNFI	0.098	Good Consistency
CFI	0.099	Good Consistency
GFI	0.098	Good Consistency
AGFI	0.096	Good Consistency
PGFI	0.042	Acceptable

Consistency criterions of measurement model are seen in Table 5. According to this, it is determined that consistency criterions have good and acceptable consistency. On the other hand, the critical value of this measurement model is designated as 360.06. Structural equation modeling is used in testing information management, innovation and business performance scale. Hypotheses are determined before passing on to analysis.

H2: Innovation has mediating effect between information management and business performance.
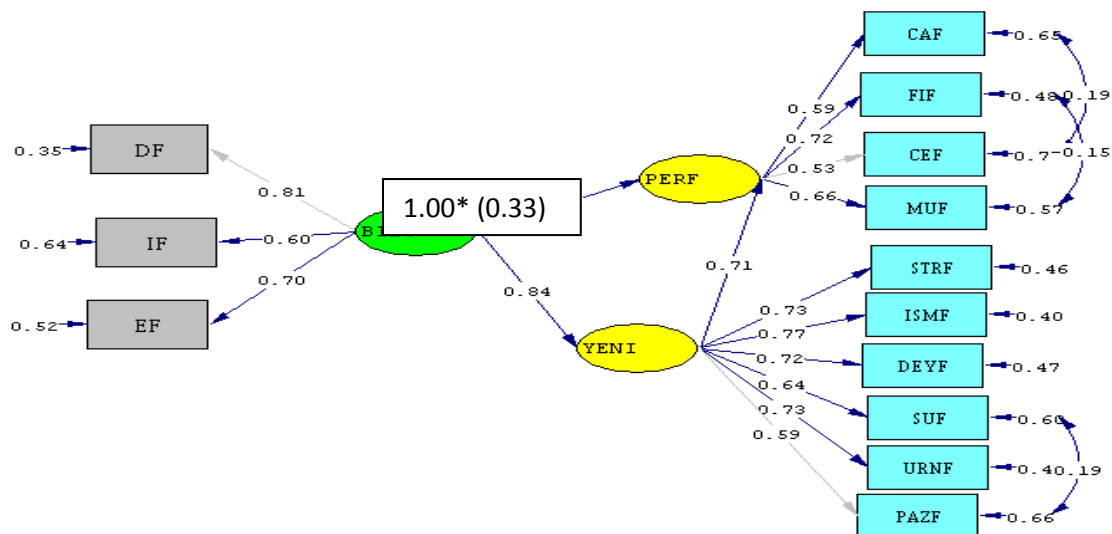
Chi-Square=92.52,   df=60, P-value=0.00447,   RMSEA=0.041

*Notes***:** BILG=Information Management, DF= Information Evaluation, IF= Information Internalisation, EF= Information Retrieval, PERF= Business of Performance, CAF=Employees, FIF=Finance, CEF=Environment, MUF= Customer, YENI=Inovation, STRF=Strategic Innovation, ISMF=Business Models Innovation, DEYF= Experience Innovation, SUF=Process Innovation, PAZF=Marketing Innovation, URNF=Product Innovation.

Figure 6: The diagram and standardized solution values produced for information management, business performance and innovation measurement model

In Figure 6, when the relationships between variables in the model are examined, it is seen that innovation (YENI) has partial mediating effect between information management (BILG) and business performance (PERF) . H2 is accepted depending upon this result. The standardized solution values regarding the partial mediating effect of innovation (YENI) between information management (BILG) and business performance (PERF) is .84 + .71 (R^2=0.70+0.50) . When t-values of measurement model are examined, the t-values regarding the mediating effect of innovation (YENI) between information management(BILG) and business performance (PERF) are calculated as 9.09 + 5.37. In this regard, it is designated that t-value is meaningful.

As it is seen on the model, p value is 0.00447. This value indicates that it is meaningful at the level of .01. When analysis is carried on, it is seen that χ^2/sd(χ^2=92.52/sd=60) value is 1.54. As a result of the analysis carried out, it is understood that χ^2/sd = 1.54 rate assigns good consistency value. As a result of the analysis, it can be stated that the consistency value acquired is RMSEA=0.051 and that this value has a good consistency.

Table 6: Consistency Criterions Generating For Information Management, Business Performance and Innovation Measurement Model

Measure of Consistency	Value	Consistency
χ^2 /sd	1.54	**Good Consistency**
RMSEA	0.041	**Good Consistency**
SRMR	0.033	**Good Consistency**
NFI	0.098	**Good Consistency**
NNFI	0.099	**Good Consistency**
CFI	0.099	**Good Consistency**
GFI	0.095	**Acceptable**
AGFI	0.093	**Good Consistency**
PGFI	0.064	**Good Consistency**

Consistency criterions of measurement model are seen in Table 6. According to this, it is determined that consistency criterions have good and acceptable consistency. Also, the critical value of this measurement model is designated as 268.14.

Discussion

As a result of the analysis, information management is gathered under three factors. These factors are information internalisation, information retrieval and information evaluation. Also, the factors that hotel managers primarily pay attention among these factors are respectively information evaluation, information retrieval and information internalisation. The assessment of information has a strategic importance in terms of hotel businesses. Information that considered being strategic gives a competitive advantage for hotel businesses. At the same time, this situation makes a contribution to increase the performance of hotel businesses as well (Yilmaz, 2009).

In the literature, the information management process is generally in the form of information retrieval, information internalisation, information sharing and information evaluation. As a result of this analysis, it is determined that managers do not pay

attention to information sharing. In his study, Avcı (2005) revealed that the workers in hotel enterprises see their information as personal competition means and they are in the need of hiding important information to themselves. In another study Avcı et al. carried out in 2010, it is determined that hotel employees tend to not share the information because of the fear of dismission from their own job. These kind of reasons may also effect information sharing in hotel enterprises. One of the reasons of managers not paying attention to the subject of information sharing may be that hotel enterprises have the qualification of family businesses. Information sharing may be restricted because of the fact that employees in family businesses are usually within the family and that they do not trust their employees much.

Lastly, an other factor that managers place importance is internalization of knowledge. It can be said that managers evaluate sharing knowledge and internalization of knowledge under a factor. Because, these two concepts are closely associated with each other. Internalization of knowledge increases self-confidence of hotel staff and redound ability and ability to do work (Daldal, 2008). This situation directly increases motivation of worker; in this way, it contributes positively to the hotel business' profitability.

As a result of the analysis carried out within the research, innovation is gathered under six factors. These factors are strategic innovation factor, experience innovation factor, business model innovation factor, process innovation factor, product innovation factor and marketing innovation factor. Also, the factors that hotel managers primarily pay attention among these factors are respectively marketing innovation, business model innovation, strategic innovation, experience innovation, process innovation and product innovation. It is understood that managers pay attention to marketing innovation especially within the scope of innovation. Hotel businesses have some characteristics feautures of their own. One of these characteristic feautures is that revealed product has intangible feature. Hotel managers should try to make a profit by evaluating the products that they have with an effective strategic planning. Therefore, managers place too much emphasis on features that hotels have and marketing innovation according to the market's situation in which it operates.

It can be said that, as part of marketing innovations, managers pay attention to activities such as advertisement, distribution, price, product diversification and differentiation. It is determined that almost %40 of managers have worked 12 years and more in the sector. In this regard, it can be stated that marketing innovation with sectoral experiences the managers have is an important factor in terms of managers. Managers should sort out the products which increase the cost and should carry out studies directed to products with high added value. Abstract products are generally at the forefront in hotel enterprises. Supposing that added value isn't acquired enough in these products, the activity that is carried out goes for nothing and this situation may increase the cost. For this reason, managers should try to gain profitability by presenting products with high added value to customers.

The last factor that hotel managers pay attention to is product innovation. Product innovation is a process that prepearing and producing a product that has not produced or be in used in the market or in other areas based on customer requests and expectations (Hjalager, 2010).

In the analysis, business performance is gathered under four factors. These factors are employees factor, customer, environment factor and finance factor. In a study that they carried out over travel agents, Kılınç et al. (2010) determined the factors

that managers of travel agents pay attention to as customer, employees, finance and environment. However in this study, environment is the leading factor among the factors hotel managers care. It is determined that managers of travel agents and hotel enterprises active in tourism sector evaluate environment factor with a very different viewpoint in the context of business performance. As for this difference, it can be stated that while a customer-oriented situation is mostly in question in travel field, a market-oriented situation is in question in hotel management area. Also, while hotel enterprises host hotel customers generally through tour operators, travel agents communicate directly with the customer. It can be stated that city hotels usually administer accommodation activities by communicating with customer face to face. For this reason, it can be said that hotel enterprises pay attention mostly to environmental factors in gaining the customer. In this regard, it is understood that while competition is a crucial factor in hotel management area, customer satisfaction is a subject that is cared about a lot in travel area.

It can be seen a positive relationship in literature between knowledge management, innovation management and business performance. For instance, according to Frenz and Gillies's (2009) study, they reached a result that knowledge and innovation management has an effect on business' performance.

Depending on the hypothesis of the study as a result of tested analysis, innovation has a positive and meaningful impact between knowledge management and business performance. On the other hand, it has been reached to the following results in this study;

- *Knowledge management has a positive impact on innovation*
- *Knowledge management has a positive impact on business performance*
- *Innovation has a positive impact on business performance*
- *Innovation has a partial and intermediary impact on knowledge management and business performance*

Conclusion

According to the results of the research, it is determined that there is a strong relationship between information management and business performance as it is in the literature. However, in the following step, whether innovation revealing the originality of this research is the mediating variable or not is investigated and it is seen that innovation appeals to the relationship between information management and business performance at a meaningful level. With reference to this finding, it can be said that innovation has partial mediating variable effect as it doesn't entirely eliminate the relationship between information management and business performance.

The hypotheses that were determined within the context of research have been accepted, the results of the studies that exist in the literature have verified; in addition, it has seen that it has made important contributions to the literature in order to reach new findings. In conclusion, it can be said that knowledge management, innovation and business performance are in use and considered important by managers.

The main deficiency of the study is that the research is carried out only within five-star hotel enterprises. Another deficiency is that the research data is obtained from one of the senior managers of the hotel enterprises. As suggestions for further studies that will be similar to this one;

- This research data is obtained from senior managers. In the studies which will be carried out after this, studies in the light of data acquired from workers may be performed,
- A new model can be produced by improving the model generated in this study and by turning it into a more integrated structure,
- A qualitative research similar to this researcch topic can be generated,
- Researches similar to this research topic including three and four-star hotels can be carried out,
- Lastly, what kind of an effect the business size and structure have over innovation can be investigated.

References

Avcı, U. (2005). Konaklama işletmelerinde finansal ve finansal olmayan performans ölçümüne ilişkin bir alan araştırması, *Seyahat ve Otel İşletmeciliği Dergisi*, 2(3): 5-11.

Avcı, U., Kılınç, İ. and Okumuş, F. (2010). Öğrenme düzeyleri arasındaki ilişki: otel işletmelerinde bir alan araştırması, *Ege Akademik Bakış Dergisi*, 10(1): 95-115.

Barutçugil, İ. (2002). *Performans yönetimi*. İstanbul: Kariyer Yayıncılık.

Bayhan, D. B. (2004). *Teknoloji ve inovasyon yönetimi*. Ankara: Kozan Ofset, TMMOB 50 Yıl.

Bayram, H. (2010). *Bilgi toplumu ve bilgi yönetimi*. İstanbul; Etap Yayın Evi.

Çokluk, Ö., Şekercioğlu, G. and Büyüköztürk, Ş. (2010). *Sosyal bilimler için çok değişkenli istatistik spss ve lisrel uygulamaları*, Ankara: Pegem Yayınları.

Darroch, J. (2005). Knowledge Management, Innovation and firm performance, *Journal of Knowledge Management*, 9(3): 101-115.

Demirel, Y. and Seçkin, Z. (2008). Bilgi Yönetimi Uygulamasında etkili olan faktörler üzerine mobilyacılık sektöründe bir araştırma, ZKÜ Sosyal Bilimler Dergisi, 4 (8): 107–122.

Du, R., Ai, S. and Ren, Y. (2007). Relationship between knowledge sharing and performance: A survey in Xi'an China, *Expert Systems with Applications*, 32, 38-46.

Durna, U. (2002). İşletmelerde performans değerlemesine stratejik bir yaklaşım, *Standart Dergisi*, 482, 85-90.

Frenz, M. and Gillies, G. L. (2009). The Impact on innovation performance of different sources of knowledge: evidence from the UK community innovation survey, *Research Policy*, 38, 1125–1135.

Gumusluoğlu, L. and Ilsev, A. (2009). Transformational leadership and organizational innovation: the roles of internal and external susort for innovation, *Journal Production Innovation Management*, 26, 264–277.

Gümüştekin, E. (2004). Bilgi yönetiminin stratejik önemi, *Atatürk Üniversitesi İİBF Dergisi*, 18(3-4): 201-212.

Heffner, M. and Sharif, N. (2008). Knowledge fusion for technological innovation in organizations, *Journal of Knowledge Management*, 12 (2), 79-93.

Helvacı, A. M. (2002). Performans yönetim sürecinde performans değerlendirmenin önemi, *Ankara Üniversitesi Eğitim Bilimleri Dergisi*, 35(1-2).

Ho, L. A. (2008). What affects organizational performance? The linking of Learning and Knowledge Management, *Industrial Management & Data Systems*, 108 (9): 1234-1254.

İpçioğlu, İ. and Erdoğan, Z. (2004). İşletmelerde liderlik ve bilgi yönetimi arasındaki ilişkinin incelenmesine yönelik bir araştırma, *3.Ulusal Bilgi, Ekonomi ve Yönetim Kongresi,* Osmangazi Üniversitesi, İktisadi ve İdari Bilimler Fakültesi, 25-26 Kasım.

Karakoç, K. (2007). Bilgi yönetimi ve verimliliğe etkisi: Türkiye Büyük Millet Meclisi uygulaması, doktora tezi, *Ankara Üniversitesi Sosyal Bilimler Enstitüsü*.

Kılınç, İ., Kıngır, S. and Mesci, M. (2010). Türkiye'deki seyahat acentalarının performans değerlendirmelerinde etkili olan faktörler, *Atatürk Üniversitesi İ.İ.B.F*, 24 (1), 25-42.

Kiesling, T. S., Richey, R. G., Meng, J. and Dabic, M. (2009). Exploring knowledge management to organizational performance outcomes in a transitional economy, Journal of World Busines, 44, 421-423.

Lo, K. C. and Chin, K. S. (2009). User-Satisfaction-based knowledge management performance measurement, *International Journal of Quality & Reliability Management*, 26(5): 449-468.

Man, J. (2001). Creating Innovation, *Work Study*, 50(6): 229-233.

Mangiarotti, G. (2010). Knowledge Management Strategies and Innovation: An Empirical Analysis for Luxembourg", *11th European Conference on Knowledge Management ECKM 2010 - Portugal*, 653-662.

Maqsood, T., Walker, D.H.T. and Andrew, D. F. (2007). Facilitating knowledge pull to deliver ınnovation through knowledge management-a case study, *Engineering, Construction and Architectural Management*, 14(1): 94-109.

Marceau, J. (2007). The Knowledge Tree: CSIRO in australias ınnovation systems ınnovation: management, *Policy & Practice*, 9, 98–112.

Marques, D. P. and Simon F. J. G. (2006). The Effect of knowledge management practices on firm performance, *Journal of Knowledge Management*, 10(3): 143-156.

Nunnally C. J. (1967). Psychometric Theory, New York:MacGraw-Hill.

Öğüt A, Akgemci T., Şahin E. and Kocabacak A. (2007). İşletmelerde düşünce aşamasından patent aşamasına uzanan süreçte yenilik stratejileri ve buluş yönetimi, *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 17, 413-425.

Özdemir, A. (2006). Bilgi yönetimi ve kurumsal yaklaşım: çorlu ilçesi kamu ve özel arşivleri ile bilgi merkezleri üzerine bir çalışma, *Yüksek Lisans Tezi,* Marmara Üniversitesi, Türkiyat Araştırmaları Enstitüsü,

Šajeva, S. (2010). The analysıs of key elements of socıo-technıcal knowledge management system, *Economics and Management*, 15, 765-774.

Selimoğlu, N. (2005). Süreç Yönetimi ve Süreç İyileştirmede Bilgi Yönetiminin Rolü ve Uygulamaya İlişkin Bir Araştırma, Yayınlanmamış *Yüksek Lisans Tezi*, İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul,

Shang, S. S. C., Lin, S. F. and Ya-Ling, W. (2009). Innovation Through Dynamic Knowledge Management, *Industrial Management & Data Systems*, 109 (3), 322-337.

Sharpe, S. and Fernandez, C. M. (2007). Measuring regional knowledge resources, What do Knowledge occupations have to offer? *Innovatıon: Management, Policy & Practice*, 9(3–4).

Soylu A. and Meltem Ö.G, (2010). Yönetim inovasyonu, *Sosyoekonomi*, 1, 113-130.

Sternitzke, C. (2010). Knowledge sources, patent protection, and commercialization of pharmaceutical innovations, *Research Policy,* 39, 810–821.

Tiwana, A. (2003). Bilginin Yönetimi, İstanbul: Dışbank Yayınları.

Toıvonen, M. (2007). Innovation policy in services: the development of knowledge-intensive busines services in Finland, *Innovatıon: Management, Policy & Practice*, 9(3/4): 249-261.

Tseng, S. M. (2008). Knowledge management system performance measure index, *Expert Systems with Aslications*, 34, 734-745.

Ulusoy, G., Lütfihak, A., Kemal, K. and Atilla, Ö. (2008). İmalat Sanayinde İnovasyon Modelleri ve Uygulamaları Projesi, Tübitak,

Uzkurt, C. (2010). İnovasyon yönetimi: inovasyon nedir, nasıl yapılır ve nasıl pazarlanır? *Ankara Sanayi Odası Yayın Organı*, Temmuz / Ağustos.

Vaccaro, A., Parente P. and Veloso, F. M. (2010). Knowledge management tools, inter-organizational relationships innovation and firm performance, *Technological Forecasting & Social Change*, 77, 1076-1089.

Xu, J. Houssin, R., Emmanuel, C. and Gordoni, M. (2010). Macro proces of knowledge management for continuous innovation, *Journal of Knowledge Management*, 14(4): 573-591.

Yen, D. C. and Chou, D. C. (2001). Intranet for organizational innovation, *Information Management & Computer Security*, 9(2): 80-87.

Yılmaz, V. and Çelik, E. H. (2009). Lisrel ile Yapısal Eşitlik Modellemesi I, Ankara: Pegem Yayınları.

Zack, M., Mckeen, J. and Singh, S. (2009). Knowledge Management and organizational performance: An exploratory analysis, *Journal of Knowledge Management*, 13(6): 392-409.

Zaim, H. (2005). Bilginin artan önemi ve bilgi yönetimi, İstanbul: İşaret Yayınları.

Zona, M. G. (2009). Innovation-as-practice: Examining the relationship between leaders' espoused and enacted Innovation and Innovation Outcomes and Firm Performance, ProQuest ProQuest Disertations & Theses, The University of Western Ontario Richard Ivery School Of Busines, London,

Yılmaz, A. (2009). Ağırlama İşletmeleri Yöneticilerinin Bilgiye ve Bilgi Yönetimine Yönelik Yaklaşımları: Antalya'daki Beş Yıldızlı Otel İşletmeleri Üzerinde Bir Uygulama*,* Yayınlanmamış *Yüksek Lisans Tezi*, Mersin Üniversitesi, Sosyal Bilimler Enstitüsü, Mersin,

Daldal, F. (2008). Bilgi Yönetimi Sürecinde İletişim Olgusu ve İletişim Engelleri Üzerine Bir Araştırma, Yayınlanmamış *Yüksek Lisans Tezi*, Marmara Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul.

Hjalager, A. M. (2010). A Review of Innovation Research in Tourism, Tourism Management, 31, 1–12.

Frenz, M. and G. L. Gillies, (2009). The Impact on Innovation Performance of Different Sources of Knowledge: Evidence From The UK Community Innovation Survey, *Research Policy*, 38, 1125–1135.

Rana Özen Kutanis PhD
rkutanis@sakarya.edu.tr
Sakarya University

Muammer Mesci PhD
muammermesci@duzce.edu.tr
Düzce University