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RESEARCH ARTICLE **Open Access**

A Model for Internal and External Organizational Capabilities in Payam Noor University and Reviewing its Effects on Organizational Performance with Intellectual Capital as Mediating Role

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Abstract

In this study, we adopt a comprehensive model to examine how different capabilities account for organizational performance. Also, mediating effects of intellectual capital were considered. A questionnaire survey was conducted to gain information about organizational capabilities and performance. Participants were professors, experts, and general managers of the faculties of economics, management, and social sciences of Shiraz Payam Noor University. Thus, this research aims to design and present a model of internal and external organizational capabilities in universities, which was done using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS).The results showed that market-sensing, audience knowledge, relational, and innovation capabilities positively influence intellectual capital at Shiraz Payam Noor University. Further, the results showed that intellectual capital has direct and significant influences on organizational performance. Finally, the results showed that intellectual capital has mediating effects on the relationships between organizational capabilities (market-sensing, audience knowledge, relational, and innovation) and organizational performance at Shiraz Payam Noor University. Intellectual capital is the mediator in the relationships between organizational capabilities and organizational performance. This study shows the mediating effects of intellectual capital on the relationships between organizational capability - both in external and internal dimensions - and organizational performance. Study findings benefit organizations that intend to increase organizational performance, especially organizational and educational.

Keywords: *Intellectual capital, Organizational capability, Organizational performance, Knowledge-based perspective, Relationship-based perspective, Competency-based perspective*

Introduction

In today's complex business environment, survival requires various capabilities, like those dealing with markets, customers, and innovation. Both static and dynamic capabilities are crucial for organizational performance (Dyer and Singh 1998, Sharma and Kao 2016). Pre-existing literature examines the relationship between special capabilities, e.g., market-sensing and customer knowledge, communication, innovation, and firms' general performance; a comprehensive

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model for examining how various capabilities influence firms' performance.et al.2014; Ngah, Tai,&Bontis,2016; Ramadan et al.,2017;Wang et al. ,2016

The current study offers an innovative model for studying the gap by reviewing the influences of these capabilities on organizational performance. Moreover, views of each theory (Knowledge-based view (KVB), Resource-based view (RBV), and Competence-based view (CBV)) yearn for dominance. So, it is unclear how these capabilities operate together in influencing firms' organizational performance, meaning the mediating functions between capabilities and performance.Dyer&singh,1998;Gummesson,2002;Morgan & Hant, 1999; Nonaka & Takeuchi, 1995; Roberts et al., 2003.

In the case of previous studies, few of them assess mediating mechanisms that operate between all capabilities and firms' performance. In this study, intellectual capital effects mediate between internal and external capabilities and firms' organizational performance. The two main aims of the study are as follows: First, experimentally testing influences of organizational capabilities on performance and second, assessing the mediating effects of intellectual capital on the relationship between the internal and external capabilities.

Additionally, the study answers two particular questions. Firstly, how do organizational capabilities (Market-sensing, audience knowledge, relations, and innovation) influence intellectual capital and organizational performance? Secondly, does intellectual capital play a mediating role in the relationship between specific organizational capabilities and performance? Professors, experts, and associate deans of economy, management, and social sciences of the Payam Noor University of Shiraz have been surveyed to answer the questions mentioned.

The study is divided into five sections. We review previous literature after the introduction. The third and fourth sections explain the methodology and model estimation. The conclusion section and suggestions are presented at the end.

Literature Review and Hypotheses

Market-sensing capabilities and intellectual capital

Market-sensing capabilities are intangible assets and also crucial resources for competitive advantage. These capabilities allow firms to improve knowledge transfer, creation, distribution, and collection (Zack, 1999). Previous literature validates knowledge transfer's effects on intellectual capital (Kianto et al., 2014). Moreover, market knowledge management capability (absorption and integration) impacts firms' performance (in product development, service quality, innovation, and supply chain) (Jin et al., 2109; Martinez-Conesa et al., 2017; Mu, 2015; Salunke et al., 2019; Tseng, 2016). So, based on mentioned premises, we introduce the first hypothesis:

Market-sensing capabilities positively influence intellectual capital at Shiraz Payam Noor University.

Audience knowledge capabilities and intellectual capital

Campbell (2003) suggests that audience knowledge capabilities evolve through interacting with customers and blending the acquired knowledge in firms' internal processes afterward. Firms should prioritize sharing knowledge, benefits, and power in interactions. So, they can gather more audience knowledge (Stewart & Ruckdeschrl, 1998). Tiwana (2002) argues that when a firm partakes in knowledge management, it creates customer capital (a form of relationship). Firms need high-quality employees (human capital) and effective systems and strategies (structural capital) to maintain audience knowledge

capabilities. So, based on mentioned premises, we introduce the second hypothesis:
Audience knowledge capabilities positively influence intellectual capital at Shiraz Payam Noor University.

Relational capabilities and intellectual capital

Relationships can be accounted as capital because they can increase loyalty, resulting in higher sustainable profitability (Dyer & Singh, 1998). Relational capabilities focus on customers' trust, satisfaction, reciprocation, and interaction. Therefore, these capabilities can facilitate performance (Gummesson, 2002). Increased performance can occur in service quality, customer engagement, and interorganizational capabilities (Pham, Monkhouse, Barnes, 2017; Tseng, 2016; Kim & Wang, 2017; Yang et al., 2019).

So, based on mentioned premises, we introduce the third hypothesis:

Relational capabilities positively influence intellectual capital at Shiraz Payam Noor University.

Innovation capabilities and intellectual capital

Innovation capabilities encompass a managerial and technical viewpoint. Intellectual capital includes intangible assets, e.g., human capital (Stewart & Ruckdeschrl, 1998). Firms that need innovation capabilities might improve employee quality (human capital) and relationship with external resources. Kaloghirou, Kastelli, and Tsakamilas (2014) suggest that if a firm is willing to perform better, it needs improving innovation capabilities. Therefore, it can cumulate external knowledge and enhance internal processes (structural capital). Innovation capabilities positively influence social and structural capital. Innovation capabilities positively influence social and structural capital (Subramaniam and Youndt, 2005; Wang et al., 2016). Innovation capabilities significantly influence performance, e.g., in innovation, market share, and return on investment. So, based on mentioned premises, we introduce the fourth hypothesis:

Innovation capabilities positively influence intellectual capital at Shiraz Payam Noor University.

Intellectual capital and organizational performance

Petty and Guthrie (2000) emphasized the significance of intangible assets and technology in firms' service providing and value-added performance. Intellectual capital is vital for long-term organizational success (Bontis, 1998; Brennan Kannel, 2000; Engstrom et al., 2003). Intangible assets elevate performance by increasing intellectual capital (Baxter & Matear, 2004; Bollen, Vergauwen, Schnieder, 2004; Hejazi, Ghanbari, Alipur, 2016; Sharabati et al., 2010; Wang et al., 2014). So, based on mentioned premises, we introduce the fifth hypothesis:

Intellectual capital positively influences organizational performance at Shiraz Payam Noor University.

Based on the I-P-O model, firms' resources and capabilities (I) can be incorporated and explained by a mechanism (P) and result in organizational performance (O) (McGrath & Kelly, 1986). The current study assumes that intellectual capital works as an internal and mediating mechanism and links capabilities to performance. Therefore, according to the I-P-O model, we assume intellectual capital to behave as described: Intellectual capital's mediating effects indicate a relationship between organizations' internal capabilities and performance in a manner that intellectual capital is significant in improving performance. (Fainshmidt, Pezeshkan, Lance Frazier, Nair, Markowski, 2016; Hijazi et al., 2016; Kianto et al., 2014; Ramadan et al., 2017; Wang et al., 2014).

So, based on mentioned premises, we introduce the fifth hypothesis:

Intellectual capital has mediating effects on relationships between organizational capabilities (market-sensing, customer knowledge, innovation, and relational) and organizational performance at Shiraz Payam Noor University.

Literature Review

Akbari et al. (1999) reviewed the influences of technology transfer, outsourcing, and organizational capabilities on innovative performance by studying 83 active medicine firms in Tehran. The analysis indicated that the previously-mentioned factors have significant influences. Focusing on organizational capabilities, technology-transfer-based policies, and outsourcing drives medicine firms to use others' direct and indirect capabilities in addition to their internal capabilities. Heidari and Nikouei (2019) investigated the mediating role of intellectual capital, innovation, and organizational strategies in knowledge-sharing and organizational performance at the Education Department of Fars province through an applied and descriptive research. Research data was collected with a knowledge-sharing survey created by Dickson and also applying intellectual capital theory by Warde et al. (2016), innovation theory by Kim et al. (2012), organizational strategies theory by Croto et al. (2001), and Theodosiou et al. (2012). The study puts the Pearson correlation coefficient to use for data analysis.

The Research results reveal 1. Knowledge-sharing significantly influences intellectual capital, innovation, and organizational strategies.

2. Intellectual capital, innovation, and organizational strategies significantly influence performance.
3. Knowledge-sharing significantly influences organizational performance.
4. Intellectual capital, innovation, and organizational strategies mediate the relationship between knowledge sharing and organizational performance.

Safari et al. (2017) studied how organizational agility and competitive advantage's mediating role influences relationships between intellectual capital and organizational performance. The research method is applied regarding the purpose, and data collection is causal and descriptive. Data collection was done through a questionnaire survey designed by the researcher, and data analysis and hypothesis testing were conducted by applying Structural Equation Model. As results show, intellectual capital significantly and directly influences organizational performance. Moreover, the study reveals that competitive edge and organizational agility had a mediating role in the relationship between intellectual capital and organizational performance. Nowrouzi Cheshmeh Ali et al. (2017) studied the effects of intellectual capital on organizational performance with knowledge management as mediating role through a descriptive-analytic research. The statistical population of the above-stated study incorporated general managers, administrators, supervisors, and headquarter personnel of Iranian Oil Terminals Company. The study collected data using surveys and analyzed data using Structural Equation Model. Results of the research demonstrated that human capital, structural capital, and relational capital positively influence organizational performance, and at the same time, these components indirectly affect organizational performance as mediating role of knowledge management. Huang and Huang (2020) offered a model for studying how internal and external organizational capabilities influence organizational performance and also studied intellectual capital's mediating role in the relationship between organizational capabilities and performance.

Data were collected in the field and through surveys among 167 Taiwanese general managers. Structural Equation Model was applied for data analysis. Results confirmed that market-sensing, relational (organizational), and innovation capabilities positively influence intellectual capital. Contrastingly, audience knowledge capabilities did not have remarkable influences. Al-kalouti et al. (2020), through an applied and descriptive research, studied the effects of innovation capabilities on organizational performance in organizations that provide cultural-educational services. The previously-described study utilized surveys to collect field data and implemented t-test and correlation tests for data analysis. Findings revealed that innovation capabilities positively influence organizational performance; organizational culture positively influences innovation capabilities; knowledge-sharing positively influences innovation capabilities; and resource management positively influences innovation capabilities. Rahman et al. (2019) reviewed the mediating role of organizational capabilities between organizational performance and its determinant factors, including intellectual capital. For this purpose, the study employed survey data collected from general managers and chief financial officers of textile industry of Pakistan. Collected data underwent PLS analysis. The results highlight positive and significant influence of organizations' intellectual capital on organizational performance. Another study finding was that organizational capabilities could mediate the relationship between organizations' performance and intellectual capital, so performance increases. Barkat et al. (2018) reviewed intellectual capital's impacts on organizational performance. The data is generated by surveying 295 personnel and general managers of large manufacturing industries in Pakistan and analyzed by Pearson correlation coefficient and regression testing.

Research Method

The research method in the present study is descriptive-exploratory regarding data collection, and it is an applied research concerning the study's goal. This type of research involves many disciplines of study, yet we attempt to compare two or more distinct sets of information in one group or compare one set of information in two or more distinct groups. Therefore, we are able to discover relationships between one or more factors and the other factor(s) and also calculate their correlation.

The study process is as follows: 1. Reviewing similar studies. 2. Studying the subject in English and Persian information resources. 3. Determining research method and sample size. 4. Designing a survey based on existing literature. 5. Collecting data. 6. Analyzing data using SPSS and SmartPLS. 7. Concluding and suggesting based on results.

The qualitative research method is descriptive-exploratory. In this stage, the research applies Structural Equation Model (SEM) for modeling critical elements of organizational life, which are identified by The Grounded theory method.

Statistical population

The study's statistical population contains professors, experts, and general managers of the Faculties of Economics, Management, and Social Sciences of Shiraz Payam Noor University. Thus, 15 professors can attend interviews in accordance with the accessibility of the sample, along with 100 prepared surveys. Completed surveys will be the basis for statistical analysis.

Data collection

Data collection tools in the current study were questionnaire surveys. After setting up a survey and determining participants, the

survey was distributed. The survey results were used after passing the reliability and validity test.

Organizational capability (internal and external) survey

The survey is based on the second chapter of the literature and consists of 30 questions. It will assess organizational capabilities in a split manner by applying Likert scale.

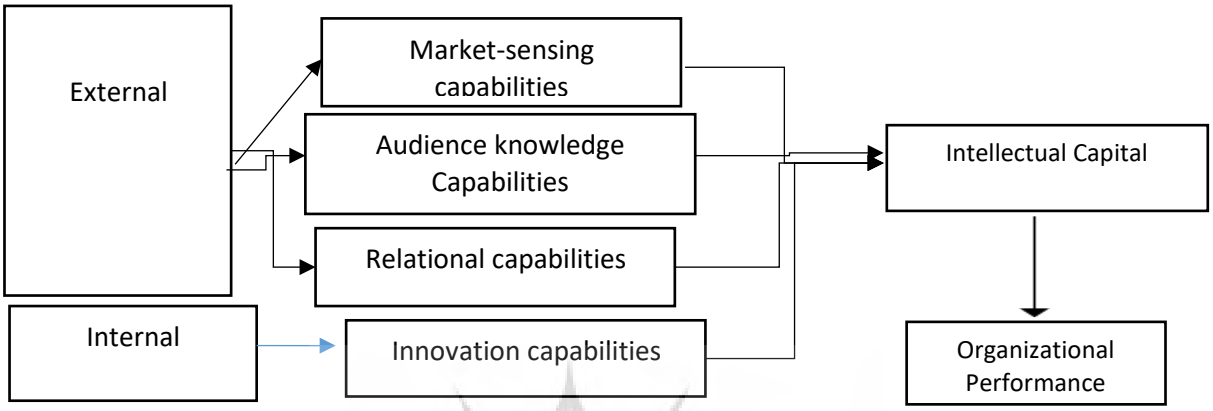

Chart 1. *Research conceptual model*

Table 1

Components and items of the organizational capability survey

	Components	Items related to each component	Source	Sum total
Internal Capabilities	• Market-sensing capabilities • Audience knowledge capabilities • Relational capabilities	1-4 8-5 13-9	Kohli and Jaworski, Moorman, Nonaka, and Takeuchi Garcia – Murillo and Annabi	30
External Capabilities	• Innovation capabilities	30-14	Works by Morgan, Hunt, Moore, Speckman, Peniadz, Prajgo, Sohl, and Jimenez et al.	

Intellectual Capital Assessment Survey

The survey was created by Bontis (1999) and comprises 52 close-ended questions with 5-point Likert scale options: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. Several questions were interchangeable and similar. Consequently, we reduced them to 42 questions.

Table 2

Components and items of the intellectual capital survey

Components	Related items	Total
Human capital	32-18	
Structural capital	45-33	42
Relational capital (customer)	59-46	

Organizational Performance Survey

Organizational performance is a multi-dimensional structure and cannot be measured by just one singular dimension, for instance, financial return. Previous studies have relied on various dimensions for measuring organizational performance, e.g., market and management performance, efficiency and effectiveness, objective and subjective performance, and corporate governance. (Delaney and Huselid (1996), Gonzales – Benito (1996), Gonzales – Benito (2005), Han (2005), Kim, Kim, Sirvastava (1998), Jimenez – Jimenez, Suns – Wall (2011), Richard Donny (2011), Yep, Johnson (2009), Sink, Patrick (20016), and Sing)

The primary goal of this study is to test the impacts of organizational capabilities on organizational performance. In order to achieve the goal, Delaney and Huselid's (1996) mental approach and definitions are adopted, meaning market knowledge, customer knowledge, relations, and innovation.

The survey contains 33 close-ended questions and will be reviewed with a 5-point Likert scale: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. This construct has seven components: perceived organizational performance, perceived market performance, employee skills, training effectiveness, employee motivation, structure of jobs and works (decentralized decision-making), and internal labor market.

Table 3

Components and items of the organizational performance survey

Components	Items	Total
Perceived organizational performanc	60-66	
Perceived market performance	67-69	
Employee skills	70-72	
Training effectiveness	73-75	33
Employee motivation	76-78	
Structure of jobs and works	79-86	
Internal labor maker (decentralized decision-making)	87-91	

Information Analysis

To investigate the information, the survey's reliability will be reviewed with Cronbach's alpha. On top of that, the construct's validity will be examined. Numerous indices will be calculated in favor of the model's goodness-of-fit. The indices are as stated below:

Composite reliability, discriminant validity using average variance extracted, the Fornell-Larker criterion for assessing inter-construct correlation, coefficient of determination, t-test analysis, and path analysis.

Data Analysis

The current section exhibits an overview of the sample's demographic characteristics, particularly gender, education, and work record. 120 respondents entered the analysis phase. Study findings regarding the frequency distribution of respondents' gender show that n=81 (67.5%) are male participants and n=39 (32.5%) are female participants. The frequency distribution of respondents' education indicates n=56 (46.5%) bachelor's degrees, n=49 (40.9%) Master's degrees, and n=15 (12.5%) Doctoral degrees among the sample population. The frequency distribution of respondents' work record shows n=24 (20%) had 1-5 years of service, n=31 (25.8%) had 6-10 years of service, n=43 (35.8%) had 11-20 years of service, and n=22 (18.4%) had above 20 years of service.

Descriptive Statistics of Variables

In order to study the general and fundamental characteristics of variables, it is necessary to know their descriptive statistics, so it is possible to have better model estimation, analysis of variables, and understanding of the sample. Data description indices used for each variable include indices of central tendency, indices of dispersion, and indices of distribution shape.

Table 4
Descriptive statistics of variables

Variable		Mean	Median	Minimum	Maximum	Standard deviation	Skewness
External capabilities	Market-sensing capabilities	45.4	25.4	1	5	52.0	-0.530
	Audience capabilities	20.4	25.4	1	5	56.0	-0.006
	Relational capabilities	17.4	20.4	1	5	55.0	-0.307
Innovation	Product innovation	36.4	42.4	1	5	47.0	-0.513
	Process innovation	25.4	25.4	1	1	48.0	-0.496
	Administrative innovation	4	4	2	5	44.0	0.211
Intellectual capital	Human	24.4	33.4	1	5	47.0	-0.365
	Structural	4	4	1	5	52.0	-0.565
	Relational	11.4	14.4	2	5	40.0	0.189
Performance	-	98.3	1.4	1	5	64.0	-0.364

Revising Assumptions in Structural Equations

Analyzing data with the application of structural equations pre-requisites a handful of assumptions which will be further discussed.

Normality Test of Variables

Examining assumptions requires testing normality of data beforehand. Further examinations will be conducted according to normality or abnormality of the data set. Kolmogorov–Smirnov test will be used for assessing the normality of data.

H_0: Data has normal distribution.
H_1: Data does not have normal distribution.

Table 5
Kolmogorov-Smirnov test on variables

Variable	Test Statistic Value	Significance
Market-sensing capabilities	1.44	0.031
Audience knowledge capabilities	1.48	0.024
Relational capabilities	1.41	0.037
Product innovation	1.60	0.012
Process innovation	1.36	0.048
Administrative innovation	1.72	0.005
Human	1.9	0.003
Structural	1.64	0.009
Relational	1.8	0.005
Performance	1.07	0.001

As significance level in the study's variables (less than 0.05) illustrates, collected data is approved to be abnormal. In conformity with data abnormality, the research model will be studied with Partial Least Squares method.

Assessing Divergent Validity of Variables

Based on this criterion, the construct's square root of AVE must be bigger than the correlation of that construct with other constructs. Hence, it indicates a higher correlation of the construct with its indices than with other constructs. Validity of values was confirmed with the Fornell-Larker method and displayed in table 6.

Table 6.
Divergent validity values with the Fronell-Larcker criterion

	Performance	Market-sensing capabilities	Intellectual capital	Audience knowledge capabilities	Innovation	Relational capabilities
Performance	1					
Knowledge of market capabilities	0/527**	1				
Intellectual capital	0/717**	0/569**	1			
Knowledge of audience capabilities	0/654*	0/667*	0/536**	1		
Innovation	0/633**	0/650**	0/659**	0/647**	1	
Relational capabilities	0/82**	0/766**	0/719**	0/875**	0/790**	1

According to values breakdown in table 6, the correlation test justifies positive and significant correlation within all study variables, showing 0.05 and 0.01 significance level. Also, the variables' square root of average variance extracted on the main diagonal is presented in table 6. Dissection of presented data confirms divergent validity of variables.

It is apparent from the above table that constructs are split. This ultimately means that each latent variable's main diagonal values (square root of average extracted variance) are higher than the variable's correlation with other reflective latent variables.

Hypothesis Testing by Using Linear Structural Relations

After determining measurement models, the study's hypotheses were tested with linear structural relations to assess the conceptual model, ensure the existence or nonexistence of a causal relationship between variables, and review the proportionality of observed data to the conceptual model. The diagram provides data on the outcome of hypothesis testing.

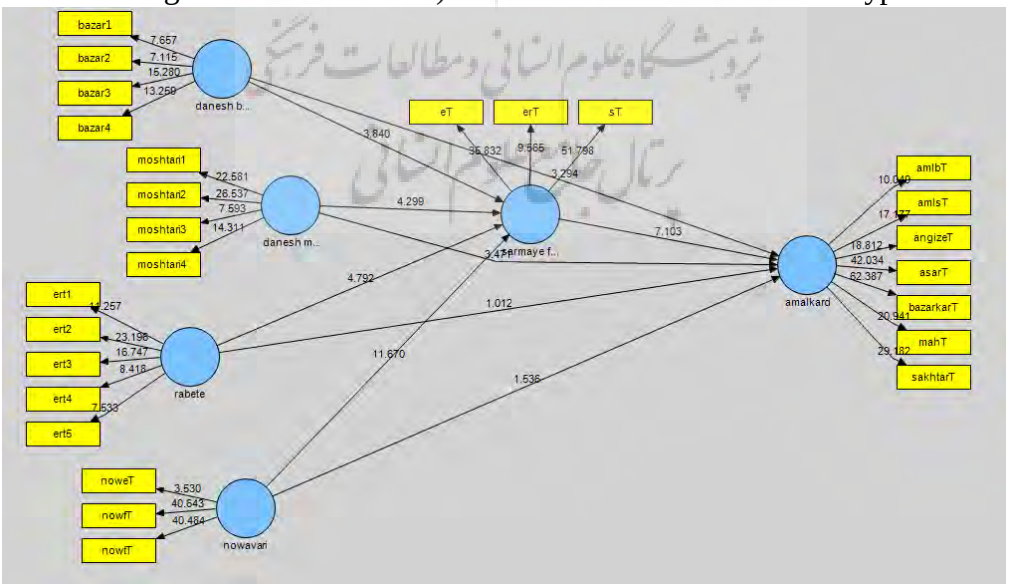

Chart 2. *Standard tested pattern of the study*

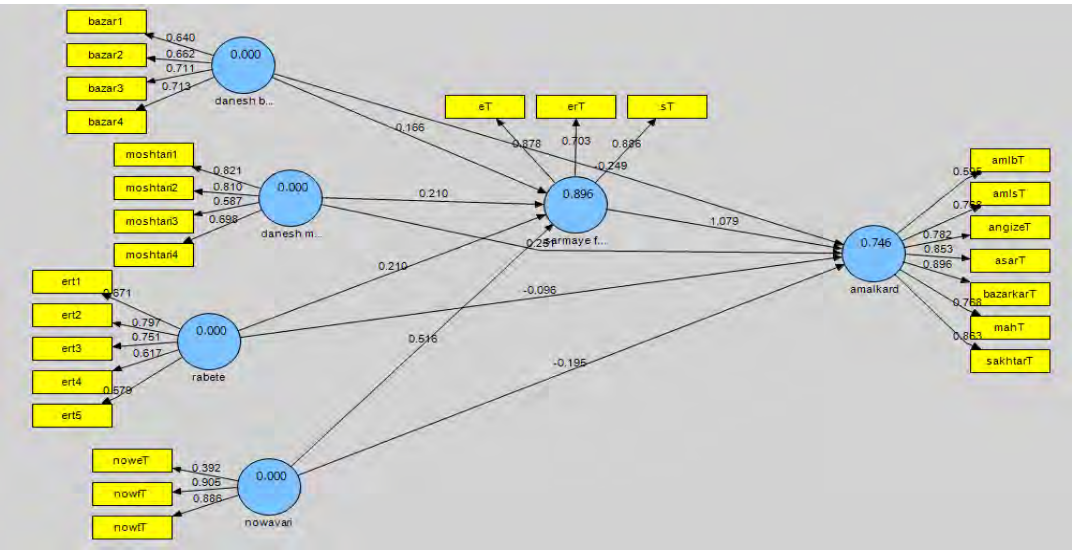

Chart 3. *T-coefficients in the tested pattern of the study*

Reliability

The reliability of each index is evaluated with two criteria: Cronbach's alpha, composite reliability, and convergent validity.

Table 7

Cronbach's alpha coefficients

Variables	Cronbach's alpha coefficient	Composite reliability	AVE
Market-sensing capabilities	0.62	0.77	0.46
Audience knowledge capabilities	0.71	0.82	0.54
Relational capabilities	0.71	0.81	0.47
Innovation	0.60	0.79	0.58
Intellectual capital	0.77	0.86	0.68
Performance	0.89	0.92	0.63

It is a classic criterion for evaluation and a proper metric for assessing internal sustainability. In many cases, measurement models' internal sustainability (internal consistency) is utilized for reliability assessment in Structural Equations Model. Internal sustainability is an indicator of the correlation between construct and its related indices. Higher variance between the construct and its indices, compared to measurement errors of each index, results in greater internal sustainability. Reliability is sufficient if Cronbach's alpha is more than 0.7 (Cronbach, 1951). Many researchers consider the border of Cronbach's coefficient to be 0.6 for variables with few questions (Davari and Rezazadeh, 1392). Granted that CR value is higher than 0.7 for a construct, it is a sign of proportional internal sustainability in the measurement model. Inversely, lower than 0.5 CR is evidence of lacking credibility. Above 0.5 AVE value represents adequate convergent validity (Fornell and Larker, 1981). More than that, some researchers have stated that 0.4 is the minimum adequate value.

General Model Goodness-of-fit

Table 8.
GoF criterion

	Communality	R Square
Market-sensing capabilities	0.46	
Audience knowledge capabilities	0.54	
Relational capabilities	0.47	
Innovation	0.58	
Intellectual capital	0.68	0.89
Performance	0.64	0.74
Mean	0.56	0.815

GoF criterion relates to Structural Equations Model. With the given criterion, the researcher is able to control general fitting. It is the only criterion for reviewing a general model fitting. 0.01, 0.25, and 0.36 are introduced as weak, mediocre, and strong GoF values (Wetzels et al., 2009). The provided formula for GoF is:

$$GOF = \sqrt{\overline{communalities} \times \overline{R^2}}$$

Thereupon, $\overline{communalities}$ equals 0.56. When putting tabled $\overline{R^2}$ values in the formula, GoF totals:

$$GOF = \sqrt{0.56 \times 0.815} = 0.67$$

0.01, 0.25, and 0.36 are subsequently weak, mediocre, and strong GoF values, as mentioned earlier. Final GoF equals 0.67 and illustrates a strong fitting. Therefore, proceeding to hypothesis review is made possible.

Statistical Analysis

Kolmogorov–Smirnov test results confirmed the normality of data, as discussed in the previous section. Then, variables' correlation was tested with SmartPLS, and the results are as follows:

Table 9
Relationships between the path and reviewed models

Path relationship	Suggested model	Non-mediated model	Mediating effect
Market-sensing → intellectual capital	(646/3) **166/0	-	-
Audience knowledge → intellectual capital	(680/4) ***210/0	-	-
Relation → intellectual capital	(948/4) ***210/0	-	-
Innovation → intellectual capital	(436/11) ***516/0	-	-
Market-sensing → organizational performance	-	(294/3) **249/0	-
Audience knowledge→ organizational performance	-	(485/3) **251/0	-
Relational → organizational performance	-	(997/0) 096/0	-
Innovation → organizational performance	-	(538/1) 195/0	-
Intellectual capital → organizational performance	-	(223/7) ***079/1	-
Market-sensing → organizational performance	-	-	(254/3) **179/0
Audience knowledge → organizational performance	-	-	(927/3) **226/0
Relational → organizational performance	-	-	(082/4) ***226/0
Innovation → organizational performance	-	-	(106/6) ***556/0

We applied Structural Equations Model in SmartPLS to analyze the research hypothesis. Bootstrap method of resampling determines the importance of existing paths in structural mode (Haier et al., 2003).

Table 10
Hypothesis results

Hypothesis	Standard	Significance level	Result
Market-sensing capabilities positively influence intellectual capital at Shiraz Payam Noor University.	166/0	646/3	Confirmed
Customer knowledge capabilities positively influence intellectual capital at Shiraz Payam Noor University.	210/0	680/4	Confirmed
Relational capabilities positively influence intellectual capital at Shiraz Payam Noor University.	210/0	948/4	Confirmed
Innovative capabilities positively influence intellectual capital at Shiraz Payam Noor University.	516/0	436/11	Confirmed
Intellectual capital positively influences intellectual capital at Shiraz Payam Noor University.	079/1	223/7	Confirmed
Intellectual capital has mediating effects on the relationship between organizational capabilities (market-sensing) and organizational performance at Shiraz Payam Noor University.	179/0	254/3	Confirmed
Intellectual capital has mediating effects on the relationship between organizational capabilities (customer knowledge) and organizational performance at Shiraz Payam Noor University.	226/0	927/3	Confirmed
Intellectual capital has mediating effects on the relationship between organizational capabilities (relational) and organizational performance at Shiraz Payam Noor University.	226/0	082/4	Confirmed
Intellectual capital has mediating effects on the relationship between organizational capabilities (innovation) and organizational performance at Shiraz Payam Noor University.	556/0	106/6	Confirmed

Table 9's first model represents a significant and positive relationship between organizational capabilities, including market-sensing (t=3.646, β=0.166), customer knowledge (t=4.680, β=0.210), relations (t=4.948, β=0.210), and innovation (t=11.436, β=0.516) in intellectual capital.

T-test and β coefficient values were higher than critical values (1.96). Therefore, the first, second, third, and fourth hypotheses are corroborated (Haier et al., 2013). Intellectual capital's influence on organizational performance is approved to be significant. As a result, H5 is corroborated. On the contrary, customer knowledge capabilities do not have significant influences on intellectual capital and disapprove of the second hypothesis (t=0.571, β=470).

Then, in order to study mediating effects of intellectual capital, we provided a non-mediated model and mediating effects. Results of the non-mediated model show significant effects of the two recommended capabilities – market-sensing and audience knowledge – on organizational performance. The other two capabilities – relational and innovation – did not exert considerable influence. The results of mediating effects model reveal interesting details. Intellectual capital has mediating effects in Market-sensing and organizational performance relationship (t=3.254, β=0.179), audience knowledge and organizational performance relationship (t=3.927, β=226/0), relational and organizational performance relationship (t=4.082, β=0.226), and innovation and organization performance relationship (t=6.106, β=0.556). Findings also clearly demonstrate that intellectual capital has minimal mediating effects on RC-OP, C-OP, MK, and IC-OP relationships (Sobel, 1982). Z values also ranged from 3.20 to 5.20 in Sobel test, and VAF values ranged from 50.98% to 63.73%, with 20% to 80% variance. Outcomes reconfirm the mediating influences of intellectual capital on the internal-external capabilities' relationship.

Reviewing Hypothesis

After standard estimation, we evaluated the causal relationship between the research's constructs using SmartPLS. As figure 4-1 indicates, the relationship between research's main constructs is direct and significant. Furthermore, indirect influences of relationships were assessed in presence of a mediating variable. Using Sobel test, we assessed the significance of a variable's mediating influences. If the value is higher than 1.96 with 95% confidence level, it confirms the variable's mediating influences to be of significant value.

1. The first hypothesis of the study claims that market-sensing capabilities influence intellectual capital. Statistical analysis – regarding 11-4 table – provides 3.646 significance value for the path between two variables, higher than 1.96. A review of the data presented confirms the first hypothesis. Additionally, the influence is considered direct because of its positive significance value.
2. The second hypothesis of the study claims that audience knowledge capabilities influence intellectual capital. Statistical analysis – regarding 11-4 table – provides 4.680 significance value for the path between two variables, higher than 1.96. Additionally, the influence is considered direct because of its positive significance value.
3. The third hypothesis of the study claims that relational capabilities influence intellectual capital. Statistical analysis – regarding 11-4 table – provides 4.948 significance value for the path between two variables, higher than 1.96. Additionally, the influence is considered direct because of its positive significance value.
4. The fourth hypothesis of the study claims that innovation capabilities influence intellectual capital. Statistical analysis – regarding 11-4 table – provides 11.436 significance value for the path between two variables, higher than 1.96. Additionally, the influence is considered direct because of its positive significance value.
5. The fifth hypothesis of the study claims that audience knowledge capabilities influence organizational performance. Statistical analysis – regarding 11-4 table – provides 7.223 significance value for the path between two variables, higher than 1.96. Additionally, the influence is considered direct because of its positive significance value.
6. The tenth hypothesis of the study claims that internal and external capabilities influence organizational performance with intellectual capital as mediating role. The path's coefficient in indirect influence is calculated by multiplying two direct constituent influences. Sobel test approves the significance of a variable's mediating effect between two variables. Analyzing data between the two shows significance value to be (3.254, 3.927, 4.082, and 6.106), higher than the path between the two variables (1.96). As discussed, the data confirms the hypothesis. Additionally, the influence is considered direct because of its positive significance value.

Conclusion

The study aimed to "Design and present a model of internal and external organizational capabilities in universities." The study utilized surveys for collecting data, and its method was survey-descriptive. The size of the statistical population was 100 and included Shiraz Payam Noor University's professors, experts, and general managers of Faculties of Economics, Management, and Social Sciences. Cochran's formula was applied in sampling and determining sample size. Based on the formula, the sample size is evaluated to be 100.

The research assigns two questions. Firstly, what are the influences of organizational capabilities (Market-sensing, customer knowledge, relational, and innovation) on intellectual capital and organizational

performance? Secondly, does intellectual capital play a mediating role in relationships between specific organizational capabilities and performance?

The study provides three key findings:

1. Market-sensing, audience knowledge, relational, and innovative capabilities influence intellectual capital.
2. Intellectual capital positively influences organizational performance.
3. Intellectual capital has mediating influences on relationships between organizational capabilities and performance.

Results show that market-sensing, audience knowledge, relational, and innovative capabilities influence intellectual capital. The greatest influence is attributed to innovative capabilities. After that, the greatest influence was imputed to relational capabilities, audience knowledge, and market knowledge.

Organizations need to interact with their audience. Audience knowledge capabilities imply fulfilling this need. Many organizations may neglect this aspect and because of that, they fail at gathering intellectual capital.

Results also recommend that organizations prioritize innovation capabilities. We can also see from the results that intellectual capital positively influences organizational performance (Baxter and Mather, 2014; Bontis, 1998; Wang et al., 2016). Accumulating intellectual capital can raise organizational performance, as previous researches also approve. In order to exhibit the influences of both internal and external capabilities on intellectual capital, we must adopt a comprehensive approach.

Results also emphasize the importance of intellectual capital in raising organizational performance. Relational capabilities – that are subsets of internal capabilities – cannot specifically perform well without proper management of an organization's intellectual capital. In addition, both market-sensing capabilities (external) and innovation capabilities (internal) require management. Proper management promises efficient use of intellectual capital in organizational performance. Prior researches also confirm the influences of intellectual capital on organizational performance (Kianto et al. (2014) and Wang et al.).

Suggestions

This experiment adds to a growing corpus of research showing the influences of internal capabilities and all three external capabilities (Market-sensing, audience knowledge, and relational) on organizational performance. Our results provide evidence for organizational performance enhancements when internal and external capabilities supplement one another. Therefore, we recommend that firms develop internal capabilities (development and research, for instance) along with external capabilities to improve organizational performance. In addition, our findings provide additional information about intellectual capital. Innovative capabilities are the most important incitants of intellectual capital, followed by market-sensing and relational capabilities. Accordingly, we suggest that firms prioritize their limited resources regarding innovative capabilities and, at the same time, preserve and advance information networks. With respect to market-sensing capabilities' influences on intellectual capital, results suggest firms adopting a long-term vision. It can arise from deploying audience knowledge or creating an audience community.

Further recommendations are on developing CKM. Attaining, sharing, and spreading are three mechanisms that can create reciprocal audience-firm satisfaction.

Intellectual capital plays a mediating role in the relationship between market-sensing, audience knowledge, relational, innovation capabilities, and organizational performance. As a result, the importance of and the need for intellectual capital reveals as organizational capabilities' output. So, it is beneficial to

dedicate intellectual capital resources to a higher level of organizational performance.

At the moment, there are differences between intellectual capital in universities, and they are signs of universities' capacities. Components of intellectual capital in universities include students, faculty members, personnel, and correspondents of scientific, national, and international communities. Optimizing the use of these capacities in universities and higher education establishments can improve their rank. Elite universities have made sense of the vitality in evaluating intellectual capital in their education system and reports. Valuing intellectual capital is vital; by assembling proper rulebooks, many benefits emerge. Besides, in university rankings, rating weighs more toward indices related to intellectual capital. Thus, composing an assessment system based on intellectual capital and documentation of intellectual capital leakages can lead to synergy in university activities and quality improvement. If we are aiming for elevation in capabilities' influences with use of intellectual capital, we should develop cooperation in personnel and facilitate learning and collaboration among them. In doing so, personnel will be encouraged, environment will become more supportive, and strategies will be more oriented toward personnel. Eventually, these mechanisms will motivate social interactions and strengthen relationships resulting in higher organizational performance.

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