

# The Effect of Knowledge Management Strategies on Performance of New Product Development in Knowledge-Based Companies

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## Abstract

**Background/Objectives:** The main purpose of this research is investigating the effect of knowledge management strategies on performance of new product development in knowledge based companies. **Methods/Statistical analysis:** This research is applied in the software manufacturer company and was survey, causal and with the help of 123 experts has been done. In this study, Cronbach's alpha for the reliability and two methods include content and construct validity was used. This Research includes 3 hypotheses and 10 questions, for responding to questions and research hypotheses, confirmatory factor analysis, correlation and path analysis were used. **Results/Findings:** In this study the relationship between the two components of knowledge management strategies and new product development performance is examined. According to the review made clear that certain research did not explores the relationship between various types of knowledge management strategies and new product development performance, so this research examine the relationship between these two key factors that impact on the industry. Results indicate that there is positive relationship between strategy of knowledge management and new product development performance. According to the results, dimensions of explicit knowledge have the greatest impact on the performance of new product development. **Originality and Value:** An innovative aspect of the research was a comprehensive look at the relationship between knowledge management strategies and new product development performance.

**Keywords:** Knowledge Management Strategies, New Product Development, New Product Development Performance

## 1. Introduction

Among the significant developments in the field of management science, the manifest phenomenon was knowledge management and new product development. For the success of organization, knowledge should consider as an asset and interchangeable between humans. Knowledge of how to solve problems can be obtained and knowledge management will be able to create other knowledge. The use of intellectual resources of the organization may have resulted in significant financial benefits. Using knowledge management concepts and methods

are clear; the challenges are clear and can be mastered. At present, accelerating changes in science and technology has increased and the pace of innovation has exceeded the rate of human learning<sup>1</sup>. The most successful companies for solving unfamiliar problems discover and create new knowledge. This knowledge purposefully and systematically in accordance with specific goals and strategies in all layers of the organization has developed<sup>2</sup>. This study examines the impact of knowledge management strategies on performance of new product development in Knowledge based companies that produce software. Many models of knowledge management have been studied; but

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there is not comprehensive look at knowledge management strategy and new product development. Innovative aspects of the research could be to examine the impact of knowledge management strategy on the performance of new product development. In the next section further research will review. In the third section, the methodology will be discussed. The fourth part is dedicated to presenting findings and finally discussion, conclusions and recommendations are explored.

## 2. Literature Review

### 2.1 Knowledge Management Strategy

Knowledge strategy is a specific method for creating and translating knowledge into competitive advantage by optimizing the organization<sup>3</sup>. Point of View Zack<sup>3</sup>, knowledge strategy for bridging the gap between existing knowledge and the knowledge needed to be developed. The goal of the strategy is to answer strategic questions that emphasize internal competitive intelligence and knowledge retrieval systems. Once sufficient knowledge is available, one can harmonious combination of strengths, weaknesses, opportunities and threats to their organization<sup>4</sup>. In general, every effort in the context of knowledge management should be part of an organization's business strategy formulation process and should be in the direction of organization objectives. Shafiei Nikabadi and Zamanloo<sup>5</sup> think that based on two criteria can be judge about knowledge management strategies. One of criteria is the area of strategy concentration and the second is the source of knowledge. For example, Bierly et al.<sup>4</sup> or Zack<sup>3</sup> based on two criteria define their strategies. In knowledge management Studies, concepts that are related to strategic approach to of knowledge management are new and innovative. The two concepts of "knowledge management strategy" and "knowledge strategic" is controversial among scholars who translated the texts, especially in this area should be considered for translators. Some scholars regarded the two concepts as one. But according to the nature and function of these two concepts in organizations, most scholars and writers have been presented different definitions of two concepts. Based on studies carried out in the field of knowledge management strategy, it is necessary to distinguish between these two concepts. Generally these two concepts can be expressed as follows: In general we can say that knowledge management strategy based on the knowledge categories can

divided to explicit knowledge (explicit) and tacit knowledge (tacit). Knowledge management strategy suggests that organizations for managing their knowledge assets and the implementation of knowledge management processes (including the acquisition, creation, transfer and application of knowledge), how and with what amount of investment property must control on knowledge assets. While the formulation of knowledge strategy helps the organization to determine what knowledge, from what source, by whom and in what way for supporting of strategic planning should be used<sup>3</sup>. According to difference that is described, if KM in an organization wants to be stable and should not be regarded merely as a fad, it must link to create economic value and competitive advantage. Therefore organizations to implement efficient and effective knowledge management process should determine the Knowledge management strategy with respect to implicit and explicit knowledge in the organization<sup>3</sup>. In the next step, organization requires aligning business strategy with development of knowledge and capabilities for supporting their strategy. Organizations to assess their knowledge of strategic resources and capabilities and extensive knowledge of the strategy to focus on the gap between what an organization knows and what the organization should consider to determine<sup>3</sup>. Zack<sup>3</sup> considered the knowledge management strategy as a general approach to organization to align between resources and Knowledge capabilities and Knowledge strategies are divided into conservative and aggressive strategies and think that aggressive strategies are better for performance. Some people argue that this strategy can be characterized by innovative organizations due to high financial success<sup>4</sup>. However, there is not a lot of research that investigates the relationship between knowledge management strategies and supply performance because it can be difficult to measure the value of knowledge and knowledge management system. Lee et al.<sup>6</sup> introduced four types of knowledge strategy, 1) a progressive and aggressive, 2) knowledge-based inner, 3) knowledge-based external and 4) passive based on two criteria focus on knowledge and knowledge resources and found that companies that have progressive and aggressive strategies and combined human-centric and reuse-oriented strategies have a better financial performance. Other researchers reached to result that the best strategy in manufacturing firms is a human-centered strategy and the best strategy in financial firms is a systems-based approach<sup>7</sup>. Choi and Chang<sup>8</sup> argue that the type of industry affect the strategy of knowledge manage-

ment. Schultz and Jub<sup>9</sup> introduced four categories namely coding strategy, disclosing, centralized and decentralized and found that the best strategy in transnational compa-

nies is centralized strategies. Choi and Lee<sup>10</sup> in their study introduced four strategies including static strategy, human-centered, system-centered and dynamic. They found that

**Table 1.** Key criteria for knowledge management strategy

Centralization	Tacit knowledge	An emphasis on the knowledge of experts and partners
		Emphasis on communication networks and informal conversations by the Experts
		Emphasis on knowledge acquired by direct person-to-person training
	Explicit knowledge	An emphasis on documenting
		Acquisition and sharing of knowledge by documented conditions
Source of Knowledge	internal	Ensure to Knowledge of inside organization
		Emphasis on the use of knowledge to create new knowledge within the organization
	External	Emphasis on obtaining knowledge from customer
		The importance of outside counsel
		An emphasis on the acquisition of knowledge through partnerships and associations
		Emphasis on knowledge acquired through the analysis of competitors

the dynamic strategy will lead to better performance in organizations. Keskin<sup>11</sup> divided Knowledge management strategies based on the characterization of knowledge into two categories according to explicit knowledge and tacit knowledge. He found that the effectiveness of a knowledge-based strategy clearly has more effect on business performance. Yang<sup>12</sup> examined the effect of knowledge management strategy on organizational performance in strategic high-tech companies in China from the perspective of the resource-based theory. He used the new scale of knowledge management strategies. The results indicate that the competency-based knowledge management in implementing knowledge management strategy should be considered. Storey and Kahn<sup>13</sup> found that the coding strategy increase the ability of organization to develop of new services activities and personalization strategy make that market recognized the company as an innovator and inventor. Shafiei Nikabadi and Zamanloo<sup>5</sup> in an article titled, multi-dimensional structure to explain the effect of supply chain strategy, business strategy and knowledge management strategies was conducted on the distribution of the supply chain. The goal of this research is to display the multi-dimensional structure of the business strategy, supply chain strategy and knowledge management strategy is implemented on distributed knowledge of the automotive supply chain. Based on the result of their research, the effective distribution of knowledge in supply chain strategy is influenced by the hierarchy of strategy. Generally supply chain strategies effect on business strategy, business strategy effect on knowledge management strategy. The distribution of knowledge, the most direct impact of knowledge management strategies, however indirectly, the business strategy and the strategies of the supply chain is affected.

The Table 1 shows the main indicators of knowledge management strategy from the perspective of Shafiei Nikabadi and Zamanloo<sup>5</sup>.

## 2.2 New Product Development Performance

New product development performance is a multidimensional construct. Researchers used different measures of performance evaluation and focus on different studies<sup>14</sup>. Today, the pace of product development processes and offering products and services to market is a problem that organizations do not pay attention to it. If the product development process includes three-time race 1) Production time 2) Time to market 3) Time to profit.

Companies and organizations will be the real winner in this competition, winning all three sections. Achieving this success will lead to the product development process. Interestingly, when we supply and deliver products to the market, three approaches will see. These approaches are: 1) the first approach is the first enterprise that is interested in the market of new products. 2) the rapid approach does not follow that such a state should be called before the first supplier of new products on the market, but is willing preceding the fastest company to market the product. 3) Follower approach that the organization does not follow, however, one producer and supplier of the new product will be the follower. In the present era, accelerating changes in science and technology has increased and Many thinkers believe that accelerate product innovation and development of high-tech and knowledge of human learning speed is exceeded. Even if all of the organizations strategy and human capital available to spend time to learn, it may not adopt his with these changes. Manian<sup>15</sup> have been conducted a research and believed that the main source of competitive advantage for the firm's success in the future is development of new and improved products. In the past thirty years much research has been done on the effectiveness of new product development processes and different models have been proposed to systematize the process. In the product development process large amounts of organizational knowledge creation, storage, retrieval and used. Therefore, many researchers believe that this process is highly knowledge and knowledge management system is an important factor in reducing the uncertainty of the process and the success of new products. A closer look at these models in the field of new product development, these models can be classified into two general types:

- 1) Models focus on factors such as reliability and performance. Sequential patterns and density are examples of these Models.
- 2) Models focus on factors such as agility and resilience. Flexible patterns of product development and integration are examples of these Models.

The study was conducted by a consortium Weiss identified 10 factors in the success of the product. Ernst<sup>16</sup> also conducted research during a study conducted to identify the success factors of NPD process. The results are shown in Table 2.

According to studies, the following (Table 3) parameters are used by the researcher<sup>27</sup>.

**Table 2.** Applied researches on new product development process

	Success factor	Results
	Technical success, economic success, technological and economic success	1. Structure and process project from aspects of: the project planning, transparency in functional requirements 2. Access to technical information 3. Access to potential markets information <sup>17</sup>
	Financial performance, the window of opportunity, market share	Clarity in defining the target market, the correct definition of the demands and needs of customers, the correct definition of the concept of the product, properly defined specifications and requirements <sup>18</sup>
	Reduce the 16 variables to four success factors: market share and sales, competitiveness, other amplifiers, the expenditure performance	Powerful approach to markets and clients, the New Product Development Process <sup>19</sup>
	Successful and unsuccessful projects are selected by managers Product Development	1. Efficiency process of development from aspects: product development, market research, initial evaluation, market testing, preliminary financial analysis 2. The information obtained during the process of new product development aspects: awareness of the needs, demands and specifications of our customers, knowledge of market size <sup>20</sup>
	Marketing performance, project performance	Market approach in relation to the collection and use of market intelligence, strategy development, market-oriented, market-driven implementation strategy <sup>21</sup>
	Success rate, profit rate, the technical success rate, the share of the domestic market, the impact on firms, the effect of time, timeliness of project	Quality marketing activities, the activities of product development (preliminary), defined as the timely and rapid product <sup>22</sup>

	Selection of successful and unsuccessful projects in terms of profitability	Preparatory activities for the development, technical preliminary development activities, marketing activities, technical activities <sup>23</sup>
	Overall success, partial success, success in the market, financial success, companies classified in two categories based on four criteria best and the rest	The main differences between the best and the rest of the company: There is a formal process of new product development <sup>24</sup>
	Respondents agreed on the success or failure Projects	NPD of Effectiveness of marketing activities during the performance , NPD of Effectiveness of technical activities during the process of marketing skills <sup>25</sup>
	Successful and unsuccessful project expressed by the respondents	Good skills in marketing and design, accurate forecasting and market demands <sup>26</sup>

**Table 3.** Indicators of the performance of new product development<sup>27</sup>

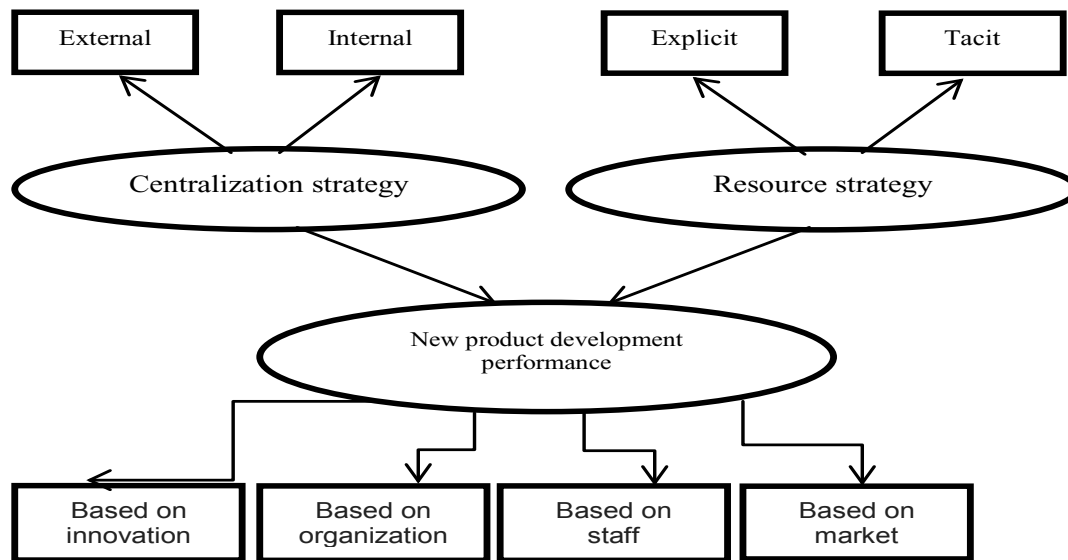
New product development performance	Based on Market	<ul style="list-style-type: none"> <li>• The quality and speed of entry to the market</li> <li>• The number of major customers</li> <li>• Rate of Market Share</li> <li>• Development of Choice and customer expectations</li> <li>• Shipping Time</li> </ul>
	Based on innovation	<ul style="list-style-type: none"> <li>• Flexibility</li> <li>• Number of new products and processes</li> <li>• Number of patents</li> <li>• Cost of research and development</li> </ul>
	Based on organization	<ul style="list-style-type: none"> <li>• Productivity Index</li> <li>• The importance of brand</li> <li>• Integrated information system</li> <li>• Develop and identify competitive priorities to meet demand</li> </ul>
	Based on Employee	<ul style="list-style-type: none"> <li>• Empowerment</li> <li>• Competency of staff achievements</li> <li>• Training staff</li> </ul>



### 3. Research Methodology

#### 3.1 Conceptual Model

According to literature review, conceptual model can be designed as Figure 1.



**Figure 1.** Conceptual Model of the Research.

#### 3.2 Research Hypothesis

In this study, Indicators of knowledge management strategy are considered as the independent variable and new product development performance as dependent variables. Therefore, the research hypothesis can be stated as follows:

**1 - Centralization strategy has a significant effect on the performance of new product development in companies producing software.**

**1.1 Centralization strategy has a significant effect on the performance of new product development based on innovation in companies producing software.**

**1-2: Centralization strategy has a significant effect on the performance of new product development based on organization in companies producing software.**

**1-3: Centralization strategy has a significant effect on the performance of new product development based on market in companies producing software.**

**1-4: Centralization strategy has a significant effect on the performance of new product development based on staff in companies producing software.**

**2 - resource-based strategy has a significant effect on the performance of new product development in companies producing software.**

**2-1: resource-based strategy has a significant effect on the performance of new product development based on innovation in companies producing software.**

**2-2: resource-based strategy has a significant effect on the performance of new product development based on organization in companies producing software.**

**2-3: resource-based strategy has a significant effect on the performance of new product development based on market in companies producing software.**

**2-4: resource-based strategy has a significant effect on the performance of new product development based on staff in companies producing software.**

This research in terms of objective is practical and in terms of methods is descriptive. For gathering data, both library and field methods are used. For writing literature, library techniques, scientific journals and databases are used. The case study of this paper is including companies producing software in Tehran Province. Methodology of this paper can be presented in two parts:

Part I: In this study, a pilot study, library studies and content analysis to extract adaptable variables are used. In this paper the following methods are used.

1. Literature Review and Frequency of criteria

2. Comments of four teachers who research their field of knowledge management

3. Comments of three experts of industry with at least a bachelor's degree and over three years working experience in the software industry.

4. Comments of three doctoral students in the field of production and operations management

Part II: To answer all questions descriptive methods and confirmatory factor analysis were used. Factor analysis offers the basis for a new set of variables (Kline 1994). Given that the unit of analysis of this research is the Knowledge based companies that produce software, Statistical population of this research is including experts from the second Supreme Council of Information. In this research sampling of companies that are at the second Council of Informatics were selected. 200 questionnaires were distributed and finally 123 questionnaires were available for analysis. Experts and specialists in this sector which constitute the Statistical population, among those with at least 3 years' experience in management and at least have one of the following criteria will be selected:

A) Having University degree (BA or higher) degree in management, systems

B) Having Reports or research papers in the field of knowledge management

C) Operational activities in its organization, strategy, planning and knowledge management

The sample in this section has been elected among the knowledge based companies that are active in the field of software production. Since this issue was fresh and the number of responding people is limited, so judgment and purposive sample was selected.

### 3.3 Reliability and Validity

To assess validity, the literature was reviewed and the amendments modify of criteria are listed and Finally by four faculty members with research on knowledge management and Three of industry experts with over five year's experience and three Ph.D. students in the research field of information technology management and knowledge management is examined. In this study, the Cronbach's alpha was used to assess reliability. If reliability coefficients greater than 0.7, the test of reliability is acceptable.

### 3.4 Data Gathering and Analysis Tools

Methods and tools for data collection are the library and field. Tools that are used in this paper are questionnaire.

Statistical analysis using two software SPSS (version 18) and LISREL (version 8.54) has been performed.

## 4. Findings

Factor analysis provides a new set of variables into a smaller number of variables that show the nature of all variables<sup>28</sup>. In this approach, problems associated with the large number of variables and dependencies between them can be very substantially reduced by substituting the new variables. In this study, the aim of using confirmatory factor analysis to reduce the dimensions of the components of the research is to identify elements with higher importance. But before proceeding with the factor analysis, KMO test must be performed to ensure adequate sampling (Table 4). In this paper, for greater certainty, 0.7 instead of 0.5 are considered<sup>29</sup>. The significant of Bartlett test shows less than 5% that means factor analysis is correct for identifying the structure and operating model. The reliability is calculated for each dimension separately, since they are greater than 0.7, the reliability can be approved (Table 5). The adequacy of sampling has also been approved.

In order to check the status of variables, t-one sample test is applied that will test difference between the mean of the sample (Table 6).

**Table 4.** KMO and Bartlett test

KMO and Bartlett test		
Measurement of sample adequacy (KMO)		0.74
Bartlett's test of Sphericity	Approx.Chi-Square	987.683
	Degrees of freedom	351
	A significant number	0.000



**Table 5.** Cronbach's alpha coefficient of variables and dimensions

Variables	The dimensions of each variable	Cronbach's alpha for each dimension	Cronbach's alpha for each Variable
Centralization Strategy	Internal	0.75	0.79
	External	0.81	
Resource based strategy	Explicit knowledge	0.78	0.76
	Tacit knowledge	0.73	
New product development performance	based on innovation	0.73	0.811
	based on organization	0.92	
	based on staff	0.82	
	based on market	0.76	
All Questioners	27 Questions		0.866

The overall result would be that the state of variables is higher than average.

*The first question:* what is the most important of knowledge management strategies in new product development performance?

Given that the two exogenous variables include Centralization strategy and Source strategy is a second-

order so we will do an analysis on two levels. Therefore, the analysis of first-order verification are looking to answer the question of whether the questions are designed to scale these variables, the ability to measure the dimensions of these structures hold or not? All research questions have a validity of the assessment factors for knowledge management strategies and the tacit

**Table 6.** One sample T-test results for each of variables

Variable							Status
	T	Degrees of freeness	significant	Difference of mean	With 95% confidence		
					The lower limit	The upper limit	
Centralization Strategy	15.331	122	0.00	0.813	0.724	0.939	Favorable
Source strategy	19.307	122	0.00	1.008	0.904	1.111	Favorable
New product development performance	25.357	122	0.00	1.04217	0.9608	1.1235	Favorable

knowledge within a factor of 0.82 the highest standard of validity for the questions related to the four dimensions are exogenous variables. The second question of explicit knowledge and tacit knowledge with the lowest validity

This research has an endogenous variable of second order. According to a background check that is intended to measure the dimensional variables considered and the questions are designed to measure each dimension. Consequently, it is necessary to analyze the validity of the

**Table 7.** First-order confirmatory factor analysis variables of knowledge management strategy

Source strategy						Centralization strategy					
External				Internal		Tacit knowledge			Explicit knowledge		
EXK4	EXK3	EXK2	EXK1	INK2	INK1	IK3	IK2	IK1	EK2	EK1	
0.54	0.60	0.82	0.56	0.48	0.84	0.62	0.55	0.41	0.51	0.79	In the standard estimate
5.66	6.30	8.68	5.79	2.48	2.16	2.64	2.68	2.53	2.70	2.68	In significant numbers

**Table 8.** Second order confirmatory factor analysis variables of knowledge management strategy

Source strategy						Centralization strategy					
External				Internal		Tacit knowledge			Explicit knowledge		
EXK4	EXK3	EXK2	EXK1	INK2	INK1	IK3	IK2	IK1	EK2	EK1	
0.54	0.60	0.82	0.56	0.48	0.84	0.63	0.55	0.40	0.51	0.79	In the standard estimate
4.69	5.09	4.92	5.6	1.98	2.64	2.66	2.67	2.50	2.51	2.68	In significant numbers

coefficient of .48 standards for the questions related to the four dimensions is exogenous variables (Table 7, 8).

The results indicate that all the variables of knowledge management strategies have the ability to measure the desired variable.

*The second question:* what is the most important performance criterion for NPD in companies producing software?

work done in time. First, we must deal with the fact that the survey questions designed to measure the ability to hold whether. Now, according to the first order confirmatory factor analysis, the second one did (Table 9, 10).

As a first-order confirmatory factor analysis results show that all the questions are designed to assess the validity of each variables are necessary. The results show that

**Table 9.** First order confirmatory factor analysis variables of new product development performance

New Product Development Performance																
ER			OR			IR					MR					
ER3	ER2	ER1	OR3	OR2	OR1	IR5	IR4	IR3	IR2	IR1	MR5	MR4	MR3	MR2	MR1	
0.75	0.62	0.55	0.57	0.56	0.34	0.49	0.62	0.48	0.55	0.53	0.56	0.51	0.48	0.32	0.41	In the standard estimate
8.46	6.84	5.96	5.79	5.63	3.40	4.93	6.41	4.888	5.64	5.42	5.90	5.33	5.03	3.19	4.20	In significant numbers

**Table 10.** Second-order confirmatory factor analysis variables of new product development performance

New Product Development Performance																
ER			OR			IR					MR					
ER3	ER2	ER1	OR3	OR2	OR1	IR5	IR4	IR3	IR2	IR1	MR5	MR4	MR3	MR2	MR1	
0.72	0.64	0.56	0.54	0.57	0.38	0.50	0.65	0.52	0.53	0.48	0.53	0.53	0.54	0.28	0.43	In the standard estimate
5.26	4.96	4.60	3.30	3.36	3.23	4.56	4.01	3.61	3.68	3.64	3.45	3.46	3.48	2.32	2.50	In significant numbers

the second order confirmatory factor analysis intended to measure variables in all aspects of research, new product development capability.

According to data normality, Pearson's correlation coefficient was used. Table 11 shows the correlations between the main variables and determine which strategy has the highest correlation.

This study focuses on two main hypotheses that examine direct relationship Centralization strategy and resource strategy on new product development performance.

The main hypothesis 1: Centralization strategy has a positive effect on effect on NPD performance.

The significant value is less than 1.96, so H0 is rejected and the main hypothesis 1 is approved.

The main hypothesis 2: source strategy has a positive effect on effect on NPD performance.

According to significant value that is equal to 4.55 and this value is greater than 1.96, so the hypothesis H0 is rejected and the main hypothesis 2 is approved.

Two main hypotheses of this study, due to the significant numbers were confirmed. Table 12 shows the results of research related to key assumptions.

This study consists of eight sub-hypothesis is also a result of these hypotheses focus on strategy and resource variables on the performance of new product develop-

**Table 11.** Correlations between the main variables

Variables	Centralization strategy	Source strategy	New Product Development Performance
Centralization strategy	1	0.383 0.000	0.543 0.000
Source strategy		1	0.584** 0.000
New Product Development Performance			1

**Table 12.** The main hypothesis of the research

The hypothesis of research		Standard coefficient	significant value	result
The main hypothesis	Centralization strategy	-0.1	-3.54	approved
	source strategy	0.13	4.55	approved

ment are obtained. The variable aspects of new product development performance in the main research hypothesis had emerged as the observer variables here. As mentioned earlier, our criterion to accept or reject is a significant number of assumptions. According to result every eight hypotheses regarding the significant number of them, were confirmed. Table 13 shows the results of secondary research hypotheses.

## 5. Discussion and Conclusion

This study examines the impact of knowledge management strategies on the performance of new product development in Tehran province. Process of new product development is a complex process that any research in this area has its own limitations. The results show that none of the hypotheses formulated largely on the basis of previous research results were rejected. According to the results of strategies (dimensions) explicit knowledge, tacit knowledge, and internal based and external based respectively Standardized coefficients 1.07, 0.64, 0.44 and

0.39 are of the highest importance. And also based on the size of the organization, based on the staff, market-based and innovation-based standardized coefficients are respectively 0.99, 0.93, 0.87 and 0.63 are of the highest importance.

In the last century to the present, the matter of management of intangible assets as part of the vital resources is considered. Among these assets, knowledge is a most important among other intangible assets. One of the main topics of management in all over the world is a knowledge management<sup>30</sup> and it is a key tool for managing information and tools for strategic management<sup>31</sup> and an effective way to gain a sustainable competitive advantage<sup>32</sup>. The main source of success in achieving competitive advantage for enterprises in the future is development of new products and improved continuously. In the last thirty years, many studies have been done on the effectiveness of new product development performance and various models have been proposed to systematize these functions. In new product development process, large amounts of organizational knowledge creation, storage, retrieval and

**Table 13.** Results of the research sub-hypotheses

The hypothesis of research		Standard coefficient	significant value	result
Secondary research hypotheses	1.1. Centralization strategy based on innovation	0.78	4.51	approved
	1.2. Centralization strategy based on organization	0.93	4.04	approved
	1.3. Centralization strategy based on market	0.94	4.19	approved
	1.4. Centralization strategy based on staff	0.82	5.29	approved
	2.1. source strategy based on innovation	0.65	4.06	approved
	2.2. source strategy based on organization	0.93	3.95	approved
	2.3. source strategy based on market	0.98	4.88	approved
	2.4. source strategy based on staff	0.87	5.67	approved

used. Therefore, many researchers believe that this process is highly knowledge and knowledge management system is an important factor in reducing the uncertainty of the process. In this paper, knowledge management strategies on the performance of new product development have been studied. Based on data collected through questionnaires all hypotheses are approved. Results indicate that there is a meaningful relationship between knowledge management strategy and new product development performance. It is noteworthy that this research has been in the software industry, so generalizing these results to other industries needs more research.

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