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## Evaluating the Effects of Market Orientation, Intellectual Capital and Organizational Learning Capability on Successfulness of a New Product

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Authors MZ, MA and SN designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript and managed literature searches. Author MZ managed the analyses of the study and literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Aims:** The main objective of this study is to evaluate the effects of market orientation, intellectual capital and organizational learning capability on successfulness of a new product.

**Study Design:** The research model has been formed considering intellectual capital, organizational learning capability and market orientation as independent variables, while intellectual capital, organizational learning capability and successfulness of the new product have been considered as dependent variables.

**Methodology:** The population includes 320 active incorporations in textile industry of Yazd Township. Stratified sampling method was used for sampling relative to the size of the sample, and in order to determine the size of the sample, Morgan Table was used. Finally, 175 acceptable samples were selected. Data was collected using questionnaires and measurements. Also data analysis was done by modeling the structural equations using LISREL software.

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**Results:** Results show that market orientation has a significant effect on intellectual capital, and intellectual capital affects organizational learning capability and successfulness of the new product. Results also show that there is no meaningful relationship between organizational learning capability and successfulness of the new product.

**Conclusion:** This study can be beneficial for researchers and managers in textile industry due to presenting useful information in domain of management. Furthermore, it presents some suggestions for optimization and effectiveness of the obtained results.

*Keywords: Intellectual capital; market orientation; organizational learning capability; successfulness of a new product.*

## 1. INTRODUCTION

In twentieth century, economy was based on industry. In that century, countries with more physical properties and financial assets produced more wealth. However, in twenty-first century, economy is on the base of science. As an example, according to Kendrick, an American economist, Seetharman et al. state that the ratio of tangible assets to intangible assets in 1925 was 30 percent to 70 percent. But in 1990s, it changed to 63 percent to 37 percent [1]. According to Ramaswami and Srivastava, not only competition within markets has been increased in recent years, but also its nature has changed. This is because the companies have been attracted toward investing in intangible assets for achieving better performance and competitive advantages [2]. In such communities, industries are not depended on traditional production factors for their competitive advantages; rather, they emphasize on knowledge management and integration. Although intellectual capital and organizational learning are very important for development of companies and incorporations, few researchers have studied the relationship between these two factors and their effects on development of a new product. Intellectual capital is becoming a vital factor for companies. In a knowledge-based economy, performance of a company is determined by intangible assets and intellectual capital rather than observable assets. Nonako and Tokachi state that in future communities, knowledge background and application of intellectual capital will be factors of economic growth [3].

Organizational innovation is becoming a vital factor of company survival and is regarded as a result of evolving competitive environment. Using their innovative abilities, talented people attempt to convert threats into opportunities. Since nineteenth century, process of learning has become a significant issue in organizations and this has led to inventions within the present century. Hence, it can be said that organizational learning is a tool for optimizing the organizational culture. In this respect, a manager can take advantage of organizational innovation to cope with problems. Many studies have already been conducted on the positive effects of organizational learning on innovation. Nowadays, the need for products and services has significantly increased due to the quick increase in variety of products and competitiveness of the market. Population growth and variety of needs are also among the factors encouraging the companies to achieve new products and goods [4]. Since companies are seeking survival within the present competitive community, they must constantly look for development and success in producing new products consistence with technology. In this regard, studying the effective factors in successfulness and development of new products seems essential. Hence, in order to optimize the performance of a company and successfulness of a new product, considering the issues of intellectual capital, promoting the organizational learning capability and market orientation are essential factors

and lead to establishing value and success in projects of developing a new product within companies. This research studies the roles of market orientation, intellectual capital and organizational learning capability as effective factors in successfulness of a new product, and seeks an answer for the question whether these variables affect the successfulness of a new product or no.

## **2. THEORETICAL CONCEPTS AND RESEARCH BACKGROUND**

Success in projects of developing a new product has been an important challenge for the managers in the past. This challenge involves today managers as well. In fact, finding an answer for the question that why the failure rate in projects of product development is still high, has attracted the attention of most researchers in this field. In addition to its significance, the mentioned issue has its own complexity such that determining effective factors in success of developing a new product has lead to different results in different studies. In this section, primarily, research literature and certain descriptions about effective factors in successfulness of a new product are presented, and then, similar researches in this field are discussed.

### **2.1 Research Background**

During the past two decades, extensive studies have been conducted on successfulness of a new product, process of developing a new product, and effective factors on this success. Previous studies have investigated the effects of factors such as marketing, intellectual capital, and organizational learning capability on successfulness of a new product. Celuch et.al investigated the effects of market orientation and organizational learning within a scope of specific abilities. Results show that organizational learning, identifying competitive advantages, and market orientation are effective in development of the capability of organizational assessment of the stocks [5]. In respect with organizational learning, market orientation and performance, Vijande et.al have considered market orientation as a source with the ability of producing higher education for organizations, and concluded that there is a meaningful relationship between organizational learning and the level of market orientation, and also that market orientation stimulates market behaviors [6]. In another study, Mayanda et.al, through investigation of the relationships between organizational learning, market orientation, and human sources and their effects on organizational performance, showed that human source is a main mechanism of conveying the benefits of organizational learning and market orientation. Also they showed that organizational learning causes innovation, while market orientation is a medium between innovation and exploitation [7]. Morgan and McGuinness also concluded that organizational learning is a distinct structure resulting in integration of stages and management leadership [8].

In another study, Hung Lin and Hiva Peng investigated the relationship between market orientation and organizational learning using a model of structural equations. Their results showed that organizational learning functions as a medium between market orientation and innovation, also that organizational structure does not have a modifying role in the relationship between innovation and trading activities [9]. Jimenez and Valle showed in their study that although market orientation and organizational learning improve innovation, organizational learning is more effective than market orientation. They also showed that the effects of organizational learning and market orientation on efficiency lead to innovation [10]. Wei and Gimma reported through investigating the level of rewarding risk and marketing that simultaneously, high level and long-term rewarding system together with low level of

rewarding risk leave positive, market orientation effects on successfulness of a new product [11].

In respect of organizational learning and performance, Alegre and Chiva investigated the effect of organizational learning on innovative performance of the product using a model of structural equations and concluded that organizational learning capability has a significant emphasis on successfulness of the product [12]. Also results of Fang et.al show that organizational learning capability has a positive effect on successfulness of a new product. They also show that organizational learning capability leaves its effect on successfulness of the new product by functioning as a medium of knowledge inertia [13]. In respect to intellectual capital, performance and organizational learning, Hui and Fang reported that through functioning as a medium for organizational learning, human capital and relational capital can improve the process of developing a new product. They also showed that structural capital has positive effect on learning capability [9]. Using a model of structural equation, Huachien investigated the relationship between market orientation and intellectual capital, development of a new product, and the relationship between market orientation and development of a new product with intellectual capital as a medium.

## **2.2 Market Orientation**

Shapiro may be the first one to define different aspects of market orientation in 1988. He defines a market-oriented company as a company where important information about the elements that affect the market and customers' purchase process penetrate in every functions of the company, strategic decisions are made jointly between the organization units, and responsibility for implementing these decisions exist in the organization units [14].

### **2.2.1 Definitions of market orientation**

Market orientation can be defined as a phase of organization development, or a level reflecting organizational maturity. Kotler considers market orientation as the ultimate phase of development of a commercial organization. Kotler believes that orientation toward market is created along with development and different commercial orientations [15]. Market orientation is established on the base of marketing viewpoint, and this viewpoint constitutes the philosophical foundations of market orientation. Market orientation is generally an organizational culture that efficiently causes the creation of behaviors that are absolutely essential for establishment of higher values for customers, and consequently, promotion of the commercial performance of the organization [16].

### **2.2.2 Market orientation viewpoints**

During the past years, researchers have made academic and practical efforts to grasp the concept of market orientation, and different views have been presented which can be divided in six categories:

1. Decision-making viewpoint [17]
2. Market-intelligence viewpoint [18]
3. Behavioral viewpoint of culture, or marketing culture [16]
4. Strategic-marketing viewpoint [19]
5. Customer-orientation viewpoint [20]
6. Compound market-orientation viewpoint [21]

### **2.2.3 Categories of market orientation**

In his study, market orientation has been analyzed through the above six viewpoints. From this viewpoint, market orientation has three aspects:

1. Customer orientation; in this perspective, the company objective is to attain a deep understanding of customers that leads to the ability of establishing permanent values for them. This requires a comprehensive understanding of the customer chain, and is essential for the organization all the time, not only the present time [16].
2. Competitor orientation; this consists of understanding short-term strengths and weaknesses, as well as long-term strategies of the present and potential competitors of the organization. In addition to information about customers, analysis of the data on competitors of the organization must lead to provision of a full set of technologies and abilities required to meet both the present and expected needs of the organization in a way better than the competitors [16].
3. Coordination of the tasks; the third behavioral component of marketing is coordination between the tasks, or unified exploitation of the company sources in order to establish top value for the target customers. Each point of the value chain is regarded as an opportunity for establishing value for the purchaser. Hence, any member of the organization, in any operational unit, can potentially take part in establishment of this value, and this is beyond performing routine duties in marketing unit [16].

## **2.3 Intellectual Capital**

### **2.3.1 Definition of intellectual capital**

In simple words, intellectual capital is the knowledge with the capability of being converted into profit. Yet, many complicated definitions have been presented for it which we will shortly analyze in this section. The term "intellectual capital" was firstly proposed by Johan Kenneth Galbraith in 1969. However, Peter Drucker had used the term "knowledge workers" before him [22]. Presenting an accurate and overall definition of the term "intellectual capital" has been difficult, and expressions such as "intangible assets" or "knowledge assets" have occasionally been used instead.

According to Edvinson, intellectual capital is the situation of knowledge, applied experience, company technology, relationships with customers, and professional skills which create competitive values for the company. Bonits defines intellectual capital as individual and organizational knowledge that causes the creation of sustainable competitive advantages [23]. Pulic believes that intellectual capital consists of the organization, workers, and organizational and personnel skills that lead to creation of organizational additional value [24]. In short, it can be said that intellectual capital constitutes the foundations of individual, organizational and national competition [25].

### **2.3.2 The scope of intellectual capital**

Sveiby was the first person to divide intellectual capital to three following scopes in 1997 [26]:

1. Human capital- within the scope of individual competency

2. Structural capital- within the scope of internal structure
3. Relational capital- within the scope of external structure

#### *2.3.2.1 Human capital*

This includes all the business and working capital fixed in the workers who belong to this organization. This capital is attained through the workers and includes the workers, managers, competency, experience, knowledge, skill, attitude toward responsibility, and wisdom. This is defined as the workflow process capital [9].

#### *2.3.2.2 Relational capital*

This contains all the values of stockholders, customers, and relationships of the suppliers [9].

#### *2.3.2.3 Structural capital*

Structural capital consists of all the knowledge and non-human sources within an organization including data bases, organizational charts, processes and strategies, and gives the organization a value higher than its materials [23]. Within the concept of structural capital, processes, special approaches and programs, business and development plans, IT systems, and the culture of cooperation are regarded as innovative capital and are defined as spiritual properties inside the organization, and include inventions, copyright, brands and knowledge. This term also includes all costs and investments related to organization workers in implementing the development of a new product [9]. According to Chen (2004), the most important component of intellectual capital is human capital and the other two categories are functions of human capital and without this capital, the possibility of their growth and development is very limited [27].

### **2.4 Successfulness of a New Product**

Although many studies have been conducted on implementation of developing a new product during the past three decades, research about successfulness of a new product is still in elementary level. A major problem in measuring the successfulness of a new product is that interpretation of successfulness is affected by beneficiary groups such as implementation of developing a new product, marketing and production. Hence, successfulness is a concept of value. As an example, accepting a customer is a determining factor or indicator of successfulness of a new product. However, different levels of age, project, program and company, or a multiplicity of these factors are also regarded as determining indicators of successfulness of a new product. Also there are other variables that have meaningful relationships with this variable.

Optimizing the efficiency and effectiveness of the process of developing a new product accelerates the trend of successfulness of a new product [28]. Brown and Eisenhart claim that with the progress of the process of developing a new product as a competitive source, successfulness of the new product is now considered to be very significant [29]. The effect of the companies' orientation toward marketing has been linked with innovation and successfulness of a new product. Marketing results in giving priority to present and future needs of the customers. Consequently, it leads to successfulness of a new product [30]. A study conducted in New Zealand suggests that entrepreneur incorporations report higher levels of successfulness of a new product. Some of the U.S companies regard customer

orientation and more accurate consideration of customers' needs as key factors of success [28].

#### **2.4.1 Key factors of success in developing a new product**

This section refers to some of the key factors of success in developing a new product that have been investigated in many studies and are common between different researchers [9].

1. Interaction between the teams to establish key marketing and to make structural decisions
2. High-quality efforts, sales, advertisement and technical support
3. Initial supplies in programming
4. Preparation of initial supplies for programming

### **2.5 Organizational Learning**

The term "organizational learning" was firstly offered by Kert and March [31]. They believed that the efforts of organizations in response to the changes in the surrounding environment to adjust organizational objectives with the new conditions lead to deliberation to find approaches that help the organization achieve more efficiency. Organizational learning capability is the ability of learning through five aspects or mechanisms of experiment, taking risk, interaction with surrounding environment, negotiation, and participative decision making [12].

#### **2.5.1 Definitions of organizational learning**

Dubson defines organizational learning as a method created, completed, and organized by companies to adapt their knowledge and routine activities to their culture, and also to develop their efficiency through improving the application of the extended skills of their work force [32]. According to the definition presented by Huber (1991), learning is characterized with the ability of being used in any level of analysis for an individual, organization or a group. According to Huber, an entity will learn only when it can change the potential range of behavior through data analysis [33].

#### **2.5.2 The process of organizational learning**

According to Peter Sanj, various definitions of organizational learning are divided into two major cognitive and behavioral categories. Acquiring knowledge, understanding and insight is discussed in the category of cognitive definitions; however, any definition within this category analyzes learning in certain respects. Meanwhile, they all focus on cognitive change. All of them define organizational learning as a process with several phases. Here, several definitions of organizational learning are presented as example [34].

Daft and Weick have defined organizational learning as a three-stage process including deliberation and data collection, interpretation of the information, and learning via practical application of the data [35]. Takochi has introduced organizational learning as the organization's mastery on knowledge within the domain of its activities. According to Takochi, mastery on knowledge (organizational learning) is a three-stage process including acquiring knowledge (data collection), using knowledge (practical application), and conveying knowledge (spreading it throughout the organization) [36]. However, Huber defines organizational learning as a four-stage process and states that these stages are not

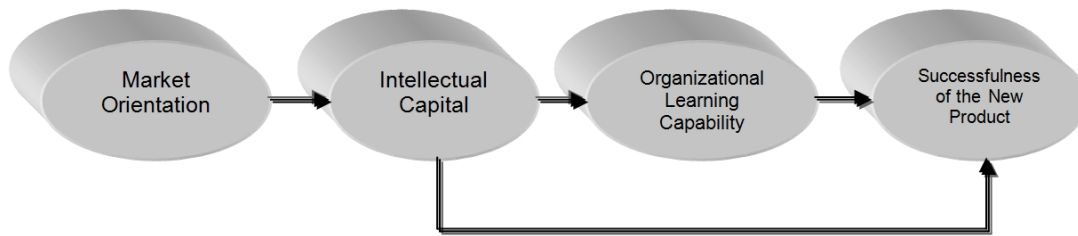
necessarily successive. According to Huber, organizational knowledge consists of identifying the need for knowledge, exchange and spreading the knowledge, adding knowledge to current knowledge systems, and institutionalizing the knowledge [33].

### 3. RESEARCH METHODOLOGY

The present research is applicable in terms of objective, and is a non-experimental correlation study in terms of implementation. Four hypotheses were presented to achieve the main objective of the research:

- H1: Market orientation has a meaningful direct effect on intellectual capital.
- H2: Intellectual capital has meaningful direct effect on organizational learning capability.
- H3: Organizational learning capability has a meaningful direct effect on successfulness of a new product.
- H4: Intellectual capital has a meaningful direct effect on successfulness of a new product.

Therefore, the conceptual model can be presented as Fig. 1.



**Fig. 1. Conceptual model of hypotheses [3,30].**

Research data were collected through questionnaires that were distributed in spring and summer, 2012 among all the active textile companies of Yazd, the number of which was 320. According to Krejcie and Morgan Chart, the statistical sample included 175 active textile companies of Yazd selected via stratified sampling method appropriate to the size of the sample. 220 questionnaires were distributed of which, 175 were recollected. Table1 presents the member distribution of the members of the sample and population according to their activity.

**Table 1. Distribution and percentage of the members of population and sample according to their activity**

Type of activity	Population	Percentage in population	Percentage in sample	Required sample
Spinning	45	13.7	13.7	24
Weaving	168	53.1	53.1	91
Rugs and Carpet	16	4.6	4.6	9
Blankets	55	17.1	17.1	30
Sewing	23	7.4	7.4	13
Other	13	4	4	8
Total	320	100	100	175



In order to measure the researcher's target variables, the research questionnaire was validated by advisor and supervisor professors. Also in order to assess the reliability of the questionnaire, Cronbach Alpha has been used. Regarding the fact that the least required reliability for research questionnaire is 0.7, the considered questionnaire has high level of reliability according to the calculated values. Cronbach Alpha was calculated for individual variables as follows. Since the calculated values of cronbach Alpha for each of the variables and also that of the whole questionnaire are larger than 0.7, it can be concluded that the questionnaire has a high level of reliability. Table 2 presents the calculated value of cronbach alpha.

**Table 2. Calculated value of Cronbach Alpha for each of the considered variables**

Variable	intellectual capital	Organizational learning capability	Successfulness of a new product	Market orientation	The whole questionnaire
Value of Cronbach Alpha	0.786	0.742	0.797	0.727	0.815

Generally, descriptive statistics were used on SPSS in order to classify the collected data, and structural equations model via LISREL Software, a well-known software for implementing such models, was used for testing the hypotheses aiming at investigating the simultaneous relationships between the variables.

#### 4. MAKING THE VARIABLES OPERATIONAL

Main variables of the present study include intellectual capital, organizational learning capability, successfulness of a new product, and market orientation. Table 3 presents types of the variables together with calculation method for each of them.

**Table 3. Type of the variables of the research and the related measurements**

Variable	Type of the variable	Number of related questions	Related questions in the questionnaire	Calculated Cronach alpha	References
Intellectual Capital	Independent-Dependent	15	1-15	0.786	(Hui Hsu & Fang, 2009) [3]
Organizational Learning Capability	Independent-Dependent	7	16-22	0.742	(Hui Hsu & Fang, 2009) [3]
Successfulness of a New Product	Dependent	4	23-26	0.797	Hua Chien, (2010) [31]
Market Orientation	Independent	13	27-39	0.727	Hua Chien, (2010) [31]

In order to measure intellectual capital, factors such as human capital, structural capital and relational capital were used. Also competitor orientation, customer orientation, and cross-functional coordination were used to measure market orientation. Similarly, attraction capability and transformation capability were used to measure organizational learning capability. Table 4 presents the concepts and factors used for measurement of each of these components.

**Table 4. Research variables and measurement factors**

<b>Variable</b>	<b>Measurement Factor(s)</b>
Human Capital	Empowering the workers, professional expertise, instructive program, and innovative ideas
Structural Capital	Investing on IT, investing on development of trading, availability of information system, investing on research, investing on maintenance of innovations and inventions, developing new products
Relational Capital	Maintaining long-term relations with consumers, authority of suppliers, growth capability of company products, and strong strategic relations with suppliers of material and distributors
Competitor orientation	Respond to threatening act of competitors, targeting the consumer as the most important advantage of competition, and competitive strategy of managers
Customer Orientation	Commitment to meet the consumers' needs, strategic advance of trading aiming at increasing the value of consumers, measuring consumers' satisfaction, and after sale services
Cross-functional coordination	Spreading the information within the organization, sharing trading tasks in order to achieve the goals, common use of sources within the organization, and providing the sails information
Attraction Capability	Ability of obtaining information from external sources, determining correctness of external information, and predicting the future path of development
Transformation Capability	Coherent the available knowledge, ability of applying knowledge in solving a problem, ability of classifying the knowledge for future use, and ability of applying the present and new knowledge to confront with turbulent conditions outside the organization
Successfulness of a New Product	Successfulness of the new product of the company in comparison with those of competitor companies, consumers' satisfaction of the new products, increasing the sales of other products due to the presence of the new product, and agreement of the present performance with objective of the previous managers

## 5. DATA ANALYSIS AND RESULTS

### 5.1 Confirmatory Analysis of Market Orientation and Intellectual Capital

This section aims to present confirmatory analysis of market orientation and intellectual capital, together with determination of the fitness of their models. Primarily, the model is designed for each of them in non-standard estimate mode. Since only in standard estimation mode, there is the possibility to compare observed variables that are explanative of the latent variable, also since it is in standard mode that the model indicates how much the variance of the latent variable is explained by the observed variables, the model is then designed in standard mode. LISREL software calculates a value of  $t$  for each of the free parameters within the model. This shows that which parameters can be eliminated from the model without increasing the value of  $X^2$ . In ideal mode, all these values are considered to be smaller than 2, so that they are non-meaningful. Hence, to obtain the fitness of the model, it must be designed with meaningful values, otherwise, it must be modified and the steps must be repeated until the fitness is obtained. The squared multiple -correlation,  $R^2$ , indicates the ratio of the variance that is defined by the latent variable, and must be close to

1 as much as possible. The results of confirmatory analysis of market orientation and intellectual capital after determining the fitness of the models are presented in Tables 5 and 6. Values of the statistic  $t$  were larger than 2 for both of the variables, and for both of them, the variance defined by the latent variable is acceptable. Hence the fitness of the models is good.

**Table 5. Coefficients and values of  $t$  for market orientation**

Items	Standard coefficient	t Statistic	Determinant coefficient	Error
Competitor Orientation	0.28	2.64	0.76	0.13
Consumer Orientation	0.44	3.52	0.19	0.18
Cross functional Coordination	0.25	2.44	0.64	0.24

**Table 6. Coefficients and values of  $t$  for intellectual capital**

Items	Standard coefficient	T Statistic	Determinant coefficient	Error
Human Capital	0.47	-	0.22	-
Structural Capital	0.66	6.07	0.44	0.23
Relational Capital	0.71	4.88	0.50	0.29

## 5.2 The Main Model

In order to test the meaningfulness of the factors, Path Analysis technique with LISREL software is used. It is necessary to ensure of the correctness of the measuring model before testing the hypotheses. In this research, the confirmatory analysis of the factors is done through path analysis. This analysis is carried out via the model of structural equations using LISREL software.

In investigation of each of the models, one should ensure of the fitness of the measuring model before confirming the structural relationships. To do this, the statistic  $X^2$  and other criteria of fitness should be assessed. In order to determine the fitness of the model, the value of  $X^2$  in degrees of freedom should be smaller than 3 as much as possible because it shows the difference between the model and the data. As the value of RMSEA is smaller than 0.08 and closer to 0.05, the fitness of the model is better. Also p-value should be smaller than 0.05. If the model does not show a good fitness it should be modified and retested. Tables 7 and 8 show the statistic  $t$ , standard coefficients and errors for organizational learning capability and successfulness of a new product.

**Table 7. Coefficients and values of t statistic for organizational learning capability**

Items	Standard coefficient	t Statistic	Determinant coefficient	Error
Q16	0.54	-	0.29	-
Q17	0.49	5.48	0.24	0.077
Q18	0.51	4.61	0.26	0.11
Q19	0.51	4.69	0.26	0.089
Q20	0.58	5.09	0.34	0.09
Q21	0.62	5.27	0.39	0.11
Q22	0.36	3.72	0.13	0.09

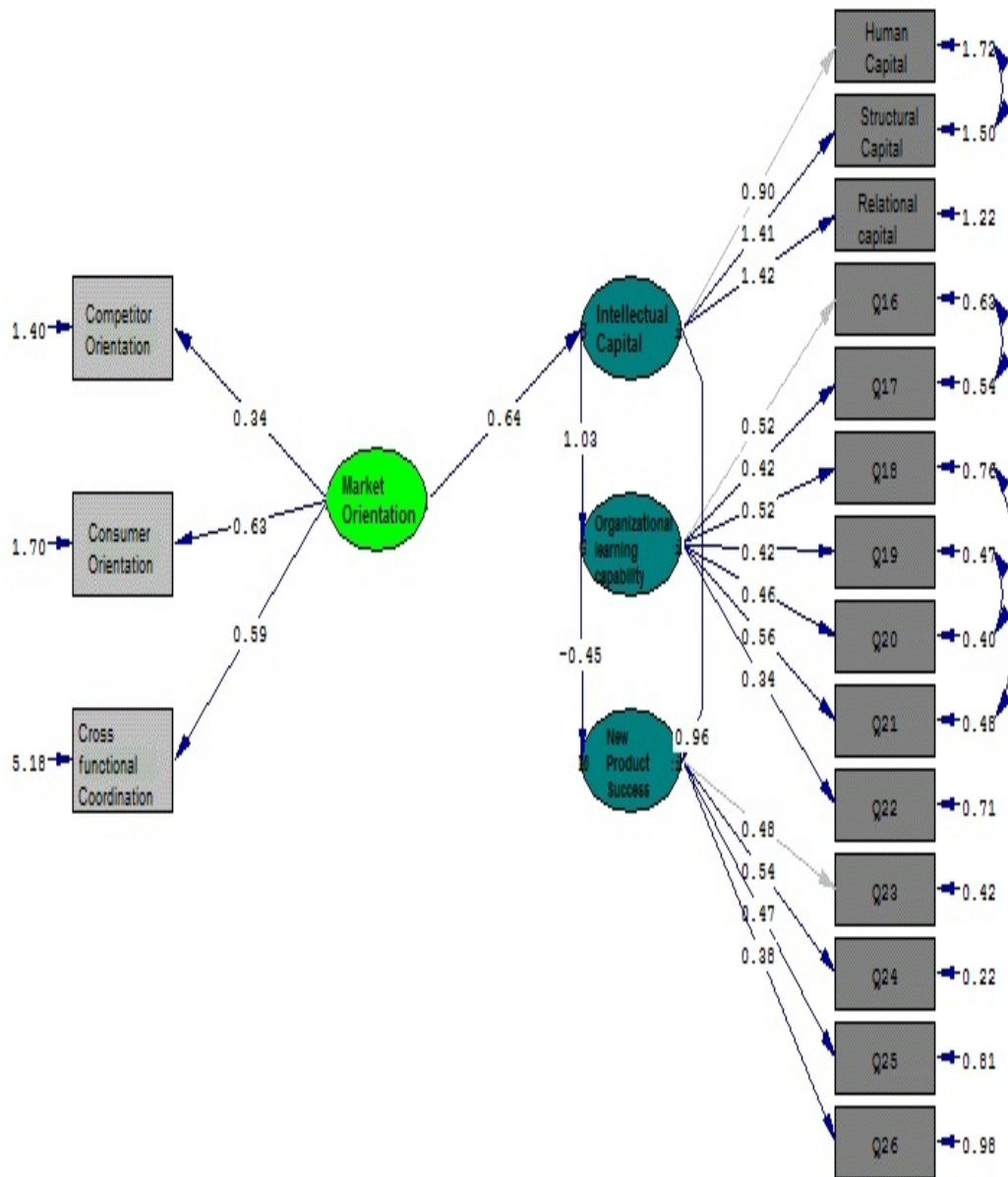
**Table 8. Coefficients and values of t statistic for successfulness of a new product**

Items	Standard coefficient	t Statistic	Determinant coefficient	Error
Q23	0.60	-	0.36	-
Q24	0.75	4.92	0.57	0.11
Q25	0.46	4.42	0.21	0.11
Q26	0.35	3.60	0.13	0.11

According to the above tables, all the variables (questions) have a *t* statistic larger than 1.96, and the values of determinant coefficient are acceptable. Hence, none of the questions is eliminated and the general model is investigated using all of them.

### 5.3 Confirmatory Analysis and Assessment of the General Model

The Figs. 2 and 3 standard diagrams show the general model in non-standard and standard estimation mode respectively. The estimation results, the lower part of the Fig. 3, imply good fitness. Regarding the LISREL output, the value of  $\chi^2$ , in degrees of freedom, is 1.52, smaller than 3 that is a good value. Lowness of this value shows minor differences between the conceptual model of the research and the data observed within the study. Also outputs show RMSEA =0.055 for the model, that is smaller than 0.08. In addition to  $\chi^2$ , as the value of RMSEA is smaller, the model has a better fitness.



Chi-Square=168.46, df=111, P-value=0.00036, RMSEA=0.055

**Fig. 2. Model in non-standard estimation mode**

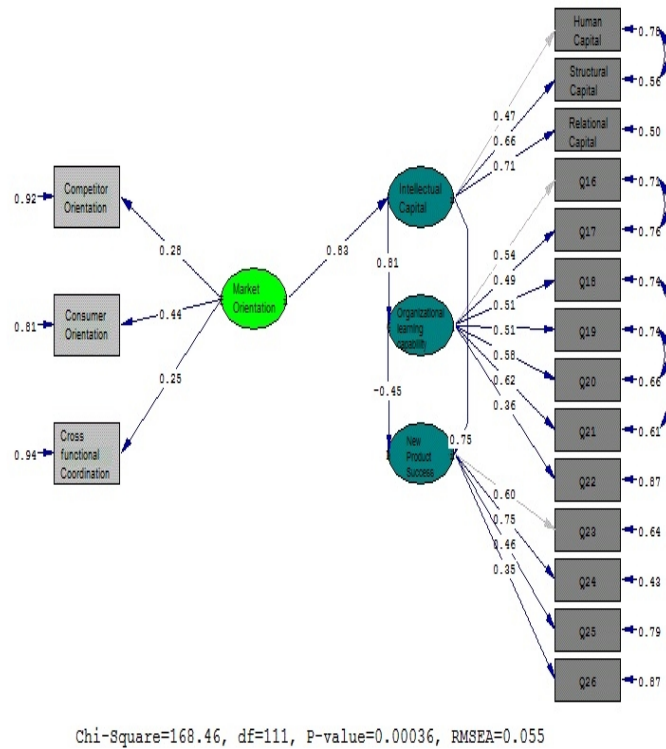


Fig. 3. Model in standard mode (standard coefficients)

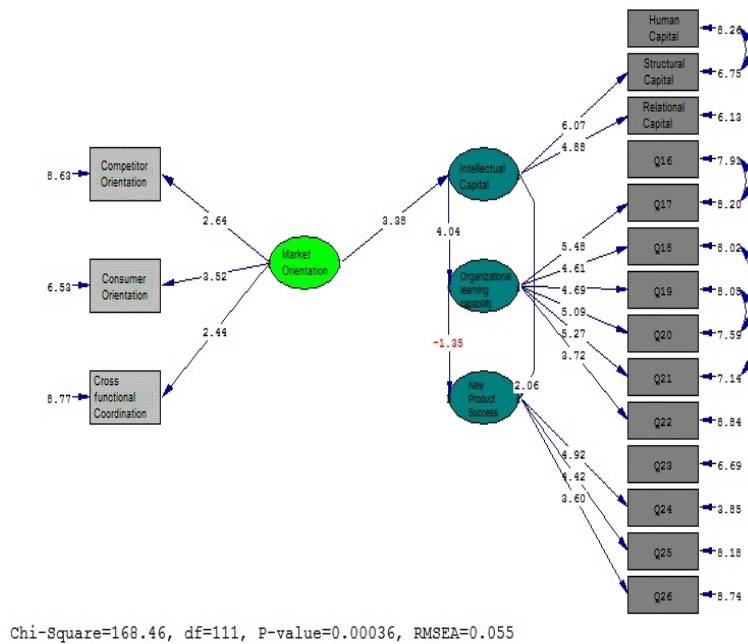


Fig. 4. Model with meaningful values (t-value)

### 5.4 Confirmation of the Model

According to the values of Table 9, the model has an appropriate fitness. The value of  $X^2$ , in degrees of freedom, is smaller than 3; also RMSEA is equal to 0.055 that is smaller than 0.08, and all the indexes CFI, IFI, NNFI, NFI, NGFI and GFI are larger than 0.90. Hence the model has a good fitness and is confirmed. The Fig. 4 show the meaningful t values. Now, using t statistic and the standard coefficient, the effect of each of independent variables on dependent variables can be investigated with regard to the model.

**Table 9. Indicators of investigating fitness**

Indicators	Reported value
X2	168.46
Degrees of freedom	111
X2 in Degrees of Freedom	1.52
RMSEA	0.055
GFI	0.90
AGFI	0.86
NFI	0.85
NNFI	0.93
IFI	0.94
CFI	0.94

### 5.5 Testing Research Hypotheses

After assessment and confirmation of the model, the hypotheses of the research were investigated. In testing each of the hypotheses, null hypothesis indicates that there is no significant effect, and hypothesis 1 shows significant effect of independent variable on dependent variable. If the absolute value of t statistic is smaller than that of the table, 1.96, null hypothesis is concluded, and if the absolute value of t statistic is larger than 1.96, hypothesis 1 is concluded. The results of testing research hypotheses are summarized in Table 10.

**Table 10. t statistic and results of testing the hypotheses**

	t statistic	Table value	Conclusion	effect intensity	Type of effect	Standard coefficient
Hypothesis 1	3.38	1.96	Effective	0.64	Positive	0.64
Hypothesis 2	3.42	1.96	Effective	0.66	Positive	0.66
Hypothesis 3	-1.35	1.96	Not Effective	0	No Effect	-0.45
Hypothesis 4	2.06	1.96	Effective	0.96	Positive	0.96

### 5.6 General Results of Investigating the Research Model

The results of analyzing the research model path can be observe in Table 11 based on the results obtained from analysis of research data and testing the hypotheses using a model of structural equations on LISREL software.

**Table 11. Summary of analysis of the research model path**

<b>Path</b>		<b>The result of path analysis</b>
Market Orientation	→ Intellectual Capital	Confirmed
Intellectual Capital	→ Organizational Learning Capabil	Confirmed
Organizational Learning Capability	→ Successfulness of the New Product	Rejected
Intellectual Capital	→ Successfulness of the New Product	Confirmed

## 6. DISCUSSION AND CONCLUSION

This research investigated the effects of market orientation, intellectual capital, and organizational learning capability on successfulness of a new product using a conceptual framework based on previous literature and background. In respect to the general model of structural equations in standard mode for confirmatory analysis of intellectual capital, since the standard coefficients for human capital, structural capital and relational capital are 0.47, 0.66, 0.71 respectively, it can be concluded that within the observed population, relational capital, structural capital and human capital gain the priority, respectively. In respect with the general model of structural equations in standard mode for analysis of market orientation, since the standard coefficients of consumer orientation, competitor orientation and cross functional coordination are 0.44, 0.28, and 0.25 respectively, it can be concluded that within the studied population and among the components of market orientation, customer orientation, competitor orientation and cross functional coordination gain the priority respectively. In respect with the infrastructures of successfulness of a new product using the obtained coefficients, the key factors with the highest levels of significance can be defined as follows:

1. Ability of classifying the anticipated knowledge for the future
2. True prediction of the future path of knowledge development
3. Searching through the information obtained from external sources
4. Ability of applying the knowledge for solving a problem

Results of comprehensive analysis of research hypotheses show that market orientation affects intellectual capital. Studies conducted in this respect confirm the relationship between market orientation and intellectual capital. The results of this study are in agreement with those of the research by Shio Hio Chin (2010) that was conducted in Taiwan. Results show that the increase in the degree of market orientation results in improvement of human capital, relational capital, and structural capital. Also intellectual capital affects organizational learning capability and successfulness of a new product. Also studies conducted in respect confirm the relationship between intellectual capital and organizational learning capabilities. Findings of the present study are in agreement with those of the research by Ya-Hui Hsu and Wenchang Fang [3] performed in Taiwan. However, organizational learning capability does not have any significant effect on successfulness of a new product. In other words, it is anticipated that increasing intellectual capital leads to success in projects related to a new product, also that improving market orientation can increase intellectual capital. The third hypothesis was proposed and then tested which claims a relationship between organizational learning capability and successfulness of a new product. Results of the research show no significant relationship between market orientation and intellectual capital.



Related studies confirm the relationship between organizational learning capability and successfulness of a new product. The result of the hypothesis is not in agreement with the results of the research by Ya-Hui Hsu and Wenchang Fang [3] in Taiwan. Results show that within the population of this research, improving the efficiency of the organization through applying extensive skills of the workforce does not affect successfulness of the new product. The fourth hypothesis was proposed and tested in respect with the relationship between intellectual capital and successfulness of a new product. Results of testing the hypothesis show a significant relationship between intellectual capital and successfulness of a new product. Also the results of this hypothesis are in agreement with those of the research by Shio Hio Chin (2010). Results show that improving human capital, structural capital, and relational capital leads to the improvement of organizations in terms of intellectual capital. Actually, in order to improve their performance and to succeed in new projects, textile companies of Yazd should focus on increasing intellectual capital. It is worth mentioning that various factors effect on rejection or confirmation of the hypotheses. These factors include individual and personality traits of the managers. Demographic features are also important. For example, 38.9 percent of the responders in this study were between 36 to 45 years old which can effect on absence of a significant relationship between organizational learning capability and successfulness of a new product. Also in respect with the education level of the responders, 44.6 percent of them were in Associate level or lower and 96.6 percent were in Bachelor's level or lower. Another important factor can be the studied site. For example, maybe in other cities, producers are mostly affected by organizational learning capability in respect to successfulness of a new product. Generally, based on the findings of this study, three of the four hypotheses of the research were confirmed.

## **7. RECOMMENDATIONS**

Today, due to the increased competition in world markets, companies and organizations need to make changes in their existent products and create new products not only for their progress but also for survival. During the past two decades, numerous international studies have been conducted on the successfulness of a new product, the process of developing new product, and the factors effective on this successfulness. Previous studies have investigated the effects of factors such as market orientation, intellectual capital, and organizational learning capability on successfulness of a new product individually. However, the present study simultaneously investigates the effects of these factors altogether. Since companies are seeking for survival within the present competitive market, they should constantly try to introduce and develop new products. Therefore, evaluating the factors that affect successfulness and development of a new product seems necessary. The present study evaluates several factors affecting successfulness of a new product, where confirmation of the effect of these factors and improvement of their efficiencies lead to an improvement in organization performance; therefore, the study is valuable in terms of application, practice, and theory. It can be said that appropriate marketing, emphasizing the demands of the market, mastery over the related knowledge, and reinforcement of intellectual capital are those among the most important features of successful trading. Although lack of success of the studied industry is caused by various factors, the most important factors for this failure include lack of sufficient knowledge of the customers' demands, wants, and preferences, and lack of expertise in the required knowledge.

Findings of this research reveal that there is a positive, significant relationship between intellectual capital and successfulness of the new product. On this base, researchers and marketing experts should try to find strategies to increase intellectual capital in order to

improve successfulness of a new product. In order to develop and improve intellectual capital in textile industry, recommendations can be presented in three domains:

#### **a. Human Capital**

Identifying strategic positions of the organization, constant measurement of competency level of the staff, and using optimization programs such as designing a system of measuring job satisfaction.

#### **b. Structural Capital**

Identifying key processes that are most important for customers and documentation of these processes, applying experiences of internal and external competitors, and using modern advanced structures.

#### **c. Relational Capital**

Instructing true way of treating the consumers to the workers who are in direct relation with them, identification of target markets, identification of consumers' needs, and distributing the consumers' feedback throughout the organization.

Since market orientation of the companies can lead to an improvement in intellectual capital and intellectual capital has direct, positive effects on successfulness of the new product, it is recommended that companies must perform better in terms of market orientation so that they can identify consumers' needs and present a better performance. Designing processes and operations and also performing different activities of the organizations should be carried out by teams rather than individuals, and participative decision making is highly emphasized. Also rewarding the personnel, who quickly learn and apply new methods, and applying the experiences of workers and experts in different departments of the organization in order to spread the knowledge and information and instructing new methods of performing tasks are recommended.

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### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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