

Explaining Competitive Advantage Based on Knowledge Management and Customer Relationship (Case Study Noor Financial and Credit Institution of Mazandaran Province)

Roghayeh Taghavi^a, Ali Rezaeilarijani^{b,1}, Mohammad Gholami^b

^aFaculty of Human Science, Islamic Azad University, Ghaemshahr, Iran ^bFaculty of Humanities and Social Sciences, Department of Management, Amol Institute of Higher Education, Amol, Iran

Article	Abstract
Article history: Received: 22 th June, 2022 Received in revised form: 05 th July 2022 Accepted: 10 th July 2022	The main objective of this research is to explain the competitive advantage based on knowledge management and customer relationship in the financial and credit institute of Mazandaran province. The research method in this descriptive study was survey type. The statistical population of the mentioned units was selected using the Morgan table and simple random sampling with a proportional allocation of 113 individuals. The data gathering tool included Hill and Jones Competitive Advice Competency Questionnaire (2010) with reliability of 0.780, Nanako and Takuchi
Keywords: Competitive Advantage, Knowledge Management, Customer Relationship, Bank	Knowledge Management Measurement Questionnaire (2000) with the reliability of 0.787, and Customer Relationship Questionnaire (2012).) With the reliability of 0.919. Confirmatory factor analysis was also used to evaluate the validity of the questionnaires using lisrel software. Data analysis was performed using descriptive statistics and inferential statistics (including Kolmogorov-Smirnov test, regression test and stepwise regression test) using SPSS software. Research findings suggest that knowledge management and its components (disclosure, transformation, internalization and socialization) and customer relationship and its components (IT dimension, social dimension and intellectual dimension) on competitive advantage The financial and credit institute of Mazandaran province has a positive and significant impact. Also, the results of stepwise regression showed that knowledge management and customer relationship could explain the competitive advantage in the financial and credit institution of Mazandaran province. In other words, 63.5% of competitive advantage changes are described by two variables of knowledge management and customer relationship.

1. Introduction

Global competition in an ever-changing environment has enabled organizations to understand the importance of flexibility and respond responsibly and on time. Today, organizations need to globalize and be present in this great arena to survive; even if they want to be present at the national or regional level, they must think global. Competitive advantage is directly related to the customer's desired values; In a close range, the closer or more closely the values offered by an organization to the values selected by the customer, it can be said that the organization has an advantage over its competitors in one or more competitive criteria [1]. In today's competitive economy, customer orientation and customer satisfaction is the first law of business and disobeying it will remove them from the market. Companies always want to increase the satisfaction of their customers to achieve profitability by creating loyalty in them. Communication with the customer is important because it can lead to satisfaction and retention in an effective communication process. When an organization communicates with its customers, it seeks

¹Corresponding author at: Faculty of Humanities and Social Sciences, Department of Management, Amol Institute of Higher Education, Amol, Iran Email address: Alirezailarijani@gmail.com

the benefits of that relationship. When customers communicate with the organization, they expect an advantage for themselves. To satisfy customer communication, the communication process must be designed to provide a win-win communication space [2].

Perhaps the most fundamental path to business development over the past decade has been the emergence of a new economy. The fast-paced and dynamic nature of new markets has incentivised many companies to compete by integrating and thriving their knowledge resources as a tool to create sustainable value. After the transition from the agricultural revolution in which the source was land and the industrial revolution in which the source was capital and labour, the world witnessed an information revolution. The valuable and critical source of wealth creation is knowledge [3]. In other words, learning has become one of the primary driving forces for business success, and the category of knowledge, like other tangible resources, is treated systematically. Only companies that create new knowledge and use it effectively and efficiently will successfully create a competitive advantage [4]. Exploration in knowledge management is used to improve and strengthen competitiveness [5-15]. Knowledge management actions should be guided through appropriate knowledge management strategies. Knowledge management strategies are high-level programs that focus on preparing the organization with the required knowledge and capabilities to achieve the vision and goals [16-21].

Service organizations, including financial institutions, banks, and manufacturing organizations, face increasing competition. These organizations must retain existing customers and attract new ones by satisfying high-level and growing demand [22-24]. Despite extensive research on knowledge management, the focus has often been on knowledge-based manufacturing and industries. Few studies have discussed knowledge management in depth in the service sector, especially in financial institutions and banks [22-25].

Therefore, the main issue of the present study is to study the role of knowledge management and customer relationship on the competitive advantage of Noor Financial and Credit Institution of Mazandaran Province.

Research objectives

Main goal:

1. Determining the impact of knowledge management on competitive advantage in Noor financial and credit institutions of Mazandaran province.

2. Determining the effect of customer relationship on competitive advantage in Noor financial and credit institutions of Mazandaran province.

Sub-objectives:

1. Determining the effect of disclosure on competitive advantage in Noor financial and credit institutions of Mazandaran province.

2. Determining the impact of the conversion on competitive advantage in Noor financial and credit institutions of Mazandaran province.

3. Determining the effect of internalization on competitive advantage in Noor financial and credit institutions of Mazandaran province.

4. Determining the impact of socialization on competitive advantage in Noor financial and credit institutions of Mazandaran province.

5. Determining the effect of information technology on competitive advantage in the Noor financial and credit institutions of Mazandaran province.

6. Determining the effect of social dimension on competitive advantage in Noor financial and credit institutions of Mazandaran province.

7. Determining the effect of intellectual dimension on competitive advantage in Noor financial and credit institutions of Mazandaran province.

2. Literature Review

Background of Research

Ode and Ayavoo 2020, examined the role of customer knowledge management in creating a competitive advantage from the perspective of Tabriz tractor manufacturing fans. The research method is descriptive-correlational, and the cluster sampling method has been used. After collecting 450 questionnaires, it was usable. The results show that the knowledge organization dimension is the strongest predictor of competitive advantage [26].

Iqbal et al. (2019) investigated the relationship between customer knowledge management and customer relationship management tasks in a military hospital. The present study is analytical. The study population was the nurses of an army hospital who were randomly selected. The data collection tool was a researcher-made questionnaire on customer relationship management and customer knowledge management, the validity and reliability of which has been confirmed. Confirmatory factor analysis was used to determine the factors. The data analysis method was structural equation modelling. Among the components of customer relationship management, customer retention had the highest average score, and customer interaction had the lowest average score. Among the members of customer knowledge of the customer had the highest average and learning about the customer had the lowest average score. Customer knowledge management with a rate of 0.95 has impacted customer relationship management tasks [27].

Gharizadeh Beiragh et al, (2020), in a study, evaluated the effect of knowledge management on competitive advantage in Karafarin Bank; a questionnaire was distributed among 185 managers and experts of the bank, and the necessary statistical analysis was performed, and the hypothesis of a positive and significant effect of management Knowledge of gaining competitive advantage in the four dimensions of socialization, disclosure, conversion and internalization in the entrepreneur bank was confirmed [28].

Soltani (2018) has conducted a study entitled (The Impact of Dimensions of Customer Relationship Management Capability on Organizational Performance). In this research, the dimensions of customer relationship management include customer relationship management technology, customer relationship management processes, customer orientation, customer relationship management organization. Data were analyzed using structural equation modelling. The results show that all four dimensions of customer relationship management significantly impact organizational performance [29].

3. Research Methodology

Research method

The present research is in applied research in terms of purpose. Considering that library study methods and field methods have been used in this research, it can be stated that the present research is descriptive-survey research based on its nature and practice. Is.

The statistical population of the present study will consist of all employees of Noor Financial and Credit Institution of Mazandaran Province, whose number is 160 according to the collected information. To sample the study population in this study, a simple random sampling method with proportional allocation using the Morgan table was used, 113 people were selected as a statistical sample, and a questionnaire was distributed among them. Data collection tools and information will refer to documents, observation and especially interviews and questionnaires. In managerial research in Iran, likely, the questionnaire method can better meet the information needs of researchers (Azar, 1373). In this research, the researcher has used a questionnaire. Scoring In all stages, a 5-point Likert spectrum is used, shown in Table 1.

Table 1 Scoring the questions in the Likert spectrum

	I completely disagree	Ι	No idea	I agree	I quite
		disagree			agree
Score	1	2	3	4	5

Knowledge Management Questionnaire:

To assess knowledge management, the valid knowledge management questionnaire of Nonaco and Takuchi (2000) is used, which consists of 4 components and 26 items.

Row	Component	Items
1	Detection	5 - 1
2	Convert	16 - 6
3	Internalize	20-17
4	Socialization	26-21

Table 2 Correspondence of knowledge management questionnaire questions

Customer Relationship Questionnaire: Customer Relationships will mean the score of the respondents to the items of the questionnaire of Hangwei et al. (2017).

Row	Component	Items
1	Information technology dimension	6 - 1
2	Social dimension	11 - 7
3	Intellectual dimension	15-12

Table 3 Correspondence of knowledge management questionnaire questions

Competitive Advantage Questionnaire:

Competitive advantage refers to the score respondents will give to the Hill and Jones (2010) questionnaire items.

Validity and reliability of the questionnaire

In this study, a questionnaire was used to collect data. Therefore, the general structure of research questionnaires has been validated by content structure through confirmatory factor analysis. The standard factor load has been calculated for confirmatory factor analysis with standard lisrel software. The following rule generally applies: A weak relationship is considered and ignored if the factor load is less than 0.3. Factor load between 0.3 to 0.6 is acceptable and if it is more significant than 0.6 is very desirable.

Confirmatory factor analysis of the scale of all three questionnaires of competitive advantage, knowledge management and customer relationship is presented in the following diagrams. The standard factor load of confirmatory factor analysis for measuring the strength between each factor (hidden variable) with their visible variables (questionnaire items) in all cases is more significant than 0.3 and, in most cases, even more important than 0.6. Therefore, the factor structure of all three questionnaires can be confirmed.

In this research, Cronbach's alpha method is used, which is the basis of reliability in most studies. In this method, test components or parts are used to measure the reliability of the test. When this coefficient is more significant than 0.7, the test has acceptable reliability. In this study, all coefficients were higher than 0.7.

Methods of data analysis

The analysis is a method through which the entire research process is guided from problem selection to achieving a result. After collecting the data, the collected data were analyzed using SPSS software. The order of these analyzes and analyzes was as follows:

In the descriptive statistics section, frequency, frequency percentage, mean, standard deviation, and chart were calculated.

In the inferential statistics section, the Kolmogorov-Smirnov test will be used to check the normality of the population distribution and test the research hypotheses. The regression and stepwise regression will be used.

4. Data Analysis

Descriptive results related to demographic information

In the first part of the research questionnaire, the respondents asked for demographic information. At first, we draw many tables and graphs using the output of SPSS software. Demographic information includes gender, marital status, age, level of education and work experience.

Gender

Group	Frequency	Percentage Of Frequency
Male	79	69/9
Female	32	28/3
Lost	2	1/8
All	113	100

Table 4 Frequency distribution of the sample group by gender

The table above shows that 79 of the respondents were male, making up more than 69% of the respondents, and 28.3% were female. Also, 1.8% of respondents did not answer gender-related questions.

Marital status

Table 5 Frequency distribution of the sample group according to marital status

Marriage Status	Frequency	Percentage Of Frequency
Marriage	92	81/4
Single	20	17/7
Lost	1	0/9
All	113	100

The table and graph above data show that 92 of the total respondents were married, constituting 81.4% of the respondents (the highest amount), and 17.7% were single (the lowest amount). Also, less than 1% of respondents did not answer questions about marital status.

Table 6 Frequency distribution of the sample group by age

Age

 Age group
 Frequency
 Percentage Of Frequency

 Under 30
 38
 6/33

 30-40
 64
 6/56

 40-50
 9
 0/8

 Lost
 2
 8/1

113

The data in the table above show that 56.6% of the respondents belong to the age group of 30 to 40 years (highest value), and the lowest (8%) belong to the age group of 40 to 50 years. Also, about 1.8 per cent of respondents did not answer questions about age.

100

Education level

All

Table 7 Frequency distribution of the sample group according to the level of education

Education level	Frequency	Percentage Of Frequency
Diploma	2	8/1
Degree	8	1/7
Bachelor	68	2/60
Master and higher	33	2/29
Lost	2	8/1
All	113	100

The table above shows that 60.2% of the respondents had a bachelor's degree (highest), and 1.8% had a diploma (which is the lowest).

Work Experience

Table 8 Frequency distribution of the sample group according to work experience

Work	Frequency	Percentage Of Frequency
Under 5	38	6/33
5-10	49	4/43
10-15	25	1/22
Lost	1	9/0
All	113	100

The data in the table above show that 43.4% of the respondents had 5 to 10 years of work experience (maximum), and 22.1% had 10 to 15 years of work experience, which is the lowest. Also, 0.9% of the respondents did not answer the questions related to the service history.

Inferential findings

Today, in most studies that rely on the subject under investigation; Data analysis is one of the central and most essential parts of research. Data analysis is particularly important for examining the rejection and acceptance of hypotheses for any investigation. Raw data are analyzed using SPSS statistical software, and after processing, they are provided to users in the form of information.

Kolmogorov-Smirnov test

Kolmogorov-Smirnov test to check the normality of the distribution of research variables

H0: The research variables follow the normal distribution.

H1: The research variables do not follow the normal distribution.

Variables	The significance level	Z Kolmogorov Smirnov	Result of Test
Detection	0/104	1/216	Normal
convert	0/613	0/759	Normal
Internalize	0/103	1/218	Normal
socialization	0/055	1/339	Normal
Information technology dimension	0/185	1/090	Normal
Social dimension	0/207	1/064	Normal
Intellectual dimension	0/358	0/926	Normal
knowledge management	0/877	0/590	Normal
Customer relationship	0/991	0/439	Normal
Competitive Advantage	0/414	0/885	Normal

Table 9 Kolmogorov-Smirnov test table of research variables

According to the table above, the significance level of all research variables is more significant than 0.05, which indicates the acceptance of the null hypothesis, i.e. the desired variables follow the normal distribution.

Testing research hypotheses

1. Sub-hypothesis 1: Disclosure has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
2/188	0/36248	0/591	0/594	0/771

Table 10 Correlation	ı between	variables
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The correlation between independent variables and the dependent variable is 0.771. The coefficient of determination is 0.594, and this value shows that 59.4% of the changes in competitive advantage are related to the detection variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, equal to 59.1 per cent in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum Of Squares	Statistics F	Sig.
Regression	21/370	1	21/370	162/638	0/0001
The Rest	14/585	111	0/131		
Total	35/954	112			

Table 11 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 12 Significance of regression coefficients of detection and competitive advantage

	Model	Non-standard coefficients		Standardized coefficient	t	Sig.
		В	Std. Error	Beta		
1	Constant	1/489	0/191		7/810	0/0001
	Detection	0/601	0/047	0/771	12/753	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Detection (0.601) + 1.489 = Competitive advantage

According to the above table and the standard beta coefficient column, it can be said that by upgrading a detection variable unit to 0.771, the standard deviation unit will improve its competitive advantage, thus having a positive relationship.

2. The second sub-hypothesis: conversion has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard	The adjusted coefficient of	The coefficient of	The correlation
	deviation	determination	determination	coefficient
2/015	0/47034	0/311	0/317	0/563

Table 13 Correlation between variables

The correlation between the independent and dependent variables is equal to 0.563. The coefficient of determination is 0.317, and this value shows that 31.7% of the changes in competitive advantage are related to the conversion variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which is equal to 31.1% in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum Of Squares	Statistics F	Sig.
Regression	399/11	1	399/11	51/528	0/0001
The Rest	555/24	111	221/0		
Total	954/35	112			

Table 14 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 15 Significance of regression conversion coefficients and competitive advantage

	Model	Non-standard coefficients		Standardized coefficient	t	Sig.
		В	Std. Error	Beta		
1	Constant	2/036	0/261		7/807	0/0001
	Convert	0/492	0/069	0/536	7/178	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Convert (0.492) + 036.2 = Competitive advantage

According to the above table and the standard beta coefficient column, it can be said that upgrading a variable unit, converting it to 0.563 standard deviation units will improve the competitive advantage, thus having a positive relationship.

3. Third sub-hypothesis: Internalization has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation
	ucviation	uctermination	uctermination	coefficient

Table 16 Correlation between variables

The correlation between independent variables and the dependent variable is 0.375. The coefficient of determination is 0.141, and this value shows that 14.1% of the changes in competitive advantage are related to the internalization variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which is equal to 13.3% in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum Of Squares	Statistics F	Sig.
Regression	5/069	1	5/069	18/217	0/0001
The Rest	30/885	111	0/278		
Total	35/954	112			

Table 17 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 18 Significance of internalization regression coefficients and competitive advantage

	Model Non-standard coefficients		Standardized coefficient	t	Sig.	
		В	Std. Error	Beta		
1	Constant	3/168	0/174		18/204	0/0001
	Convert	0/221	0/052	0/375	4/268	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Internalize (0.221) + 3.168 = Competitive advantage

According to the above table and the standard beta coefficient column, it can be said that by upgrading a unit of variable, internalization of 0.375 units of standard deviation will improve the competitive advantage; therefore, they have a positive relationship.

4. Sub-hypothesis 4: Socialization has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient

Table 19 Correlation between variables

The correlation between the independent variables and the dependent variable is 0.417. The coefficient of determination is 0.174, and this value shows that 17.4% of the changes in competitive advantage are related to the socialization variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, equal to 16.7 per cent in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum Of Squares	Statistics F	Sig.
Regression	6/264	1	6/264	23/420	0/0001
The Rest	29/690	111	0/267		
Total	35/954	112			

Table 20 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 21 Significance of socialization regression coefficients and competitive advantage

	Model	Non-standard coefficients		Standardized coefficient	t	Sig.
	-	В	Std. Error	Beta	-	
1	Constant	2/780	0/232		11/966	0/0001
S	ocialization	0/288	0/060	0/417	4/839	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Socialize (0.288) + 2.780 = Competitive advantage

According to the above table and the standard beta coefficient column, it can be said that by upgrading a socially variable unit to 0.417 units, the standard deviation will increase its competitive advantage, thus having a positive relationship.

5. Sub-hypothesis 5: Information technology dimension has an impact on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Table 22 Correlation between variables

Watson	Error	The adjusted	The	The
Camera	standard	coefficient of	coefficient of	correlation
	deviation	determination	determination	coefficient

-				0 / A < 7
2/285	0/50395	0/209	0/216	0/465

The correlation between independent variables and the dependent variable is 0.465. The coefficient of determination is 0.216, and this value shows that 21.6% of the changes in competitive advantage are related to the variable of information technology dimension. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which is equal to 20.9% in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum Of Squares	Statistics F	Sig.
Regression	7/764	1	7/764	30/569	0/0001
The Rest	28/191	111	0/254		
Total	35/954	112		-	

Table 23 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

	Model		tandard ficients	Standardized coefficient	t	Sig.
		В	Std. Error	Beta		
1	Constant	2/871	0/189		15/232	0/0001
Information Technology		0/281	0/051	0/465	5/529	0/0001

Table 24 Significance of regression coefficients of information technology dimension and competitive advantage

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Information technology dimension (0.281) + 871/2 = Competitive advantage

According to the above table and the standard beta coefficient column, it can be said that by upgrading a variable unit of the IT dimension, 0.465 units of standard deviation will improve its competitive advantage, thus having a positive relationship.

6. Sub-hypothesis 6: Social dimension has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
1/0/6	0/40376	0/402	0/497	0/705

Table 25 Correlation between variables

The correlation between the independent variables and the dependent variable is 0.705. The coefficient of determination was 0.497, and this value shows that 49.7% of the changes in competitive advantage are related to the social dimension variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which is equal to 49.2% in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum of Squares	Statistics F	Sig.
Regression	17/589	1	17/859	109/545	0/0001
The Rest	18/096	111	0/163		
Total	35/954	112			

Table 26 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 27 Significance of social dimension regression coefficients and competitive advantage

	Model	l Non-standard coefficients		Standardized coefficient	t	Sig.
		В	Std. Error	Beta	-	
1	Constant	1/603	0/221		7/258	0/0001
	social	0/587	0/056	0/705	10/466	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Social dimension (0.587) + 1.603 = competitive advantage

According to the above table and the standard beta coefficient column, it can be said that by upgrading a social dimension variable unit to 0.705, the standard deviation unit will improve its competitive advantage, thus having a positive relationship.

7. Seventh sub-hypothesis: The intellectual dimension affects the competitive advantage in Noor Financial and Credit Institution of Mazandaran province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
2/178	0/53214	0/118	0/126	0/355

Table 28 Correlation between variables

The correlation between independent variables and the dependent variable is 0.355. The coefficient of determination is 0.126, and this value shows that 12.6% of the changes in competitive advantage are related to the variable of intellectual dimension. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which is equal to 11.8 per cent in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Table 29 F test (analysis of variance) for significant regression

Model	Sum Of Squares	Degrees Of	Average Sum of	Statistics F	Sig.
		Freedom	Squares		
Regression	4/522	1	4/522	15/970	0/0001
The Rest	31/432	111	0/283		
Total	35/954	112		-	

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 3	30 Significance	of regression	coefficients	of intellectual	dimension an	nd competitive	advantage
	0	0				1	0

Model		Non-s coef	tandard ficients	Standardized coefficient	t	Sig.
		В	Std. Error	Beta		
1	Constant	2/970	0/233		12/743	0/0001
	intellectual	0/246	0/062	0/355	3/996	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows: Intellectual dimension (0.246) + 2.970 = competitive advantage According to the above table and the standard beta coefficient column, it can be said that by upgrading a unit of intellectual dimension variable to 0.355, the standard deviation will improve its competitive advantage, thus having a positive relationship.

8. The first primary hypothesis: knowledge management has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
1/518	0/38533	0/537	0/542	0/736

es

The correlation between the independent variables and the dependent variable is 0.736. The coefficient of determination is 0.542, and this value shows that 54.2% of the changes in competitive advantage are related to the knowledge management variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which in this test is equal to 53.7%. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

Model	Sum Of Squares	Degrees Of Freedom	Average Sum of Squares	Statistics F	Sig.
Regression	19/473	1	19/473	131/148	0/0001
The Rest	16/481	111	0/148		
Total	35/954	112		-	

Table 32 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 33 Significance of regression coefficients of knowledge management and competitive advantage

Model		Non-s coef	tandard ficients	Standardized coefficient	t	Sig.
		В	Std. Error	Beta	-	
1	Constant	1/099	0/246		4/477	0/0001
	knowledge management	0/753	0/066	0/736	11/452	0/0001

The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Knowledge management (0.753) + 099/1 = Competitive advantage

According to the above table and the standard beta coefficient column, it can be said that by upgrading a variable unit of knowledge management, 0.736 units of standard deviation will improve its competitive advantage. As a result, they have a positive relationship.

9. The second primary hypothesis: customer relationship has an effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province

To evaluate the effect, the regression model was analyzed to fit, which is discussed below

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
1/958	0/41065	0/475	0/479	0/692

Table 34 Correlation between variables

The correlation between independent variables and the dependent variable is 0.692. The coefficient of determination is 0.479, and this value shows that 47.9% of the changes in competitive advantage are related to the customer relationship variable. Because this value does not consider the degree of freedom, the adjusted coefficient of determination is used for this purpose, which is equal to 47.5% in this test. Given that the statistic value of Watson's camera is between 1.5 and 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

The table below calculates the significance of regression by the F test.

		-	0	0	
Model	Sum Of Squares	Degrees Of	Average Sum of	Statistics F	Sig.
		Freedom	Squares		
Regression	17/236	1	17/236	102/213	0/0001
The Rest	18/718	111	0/169		
Total	35/954	112		-	

Table 35 F test (analysis of variance) for significant regression

According to the above table, the calculated significance level for this statistic equals 0.0001. It shows the significance of regression at the level of 99%, so the estimated linear regression model is acceptable.

Table 36 Significance of regression coefficients of customer relationship and competitive advantage

	Model	Non-standard coefficients		Standardized coefficient	t	Sig.
		В	Std. Error	Beta		
1	Constant	1/362	0/252		5/404	0/0001

intellectual 0/6	76 0/067	0/692	10/110	0/0001
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The variable entered in the regression equation is the core of regression analysis, shown in the table above.

The regression equation can be calculated using the column of non-standardized coefficients as follows:

Customer relationship (0.676) + 362/1 = knowledge management

According to the above table and the standard beta coefficient column, it can be said that by upgrading a variable unit of customer relationship with 0.692 standard deviation units, the competitive advantage will be improved. As a result, they have a positive relationship.

Fitting a stepwise regression model between independent variables and dependent variables

Model	Independent variable entered	Output variables	Method
1	knowledge management		Step by step
2	Customer relationship		Step by step

Table 37 Input and output variables using stepwise regression

Dependent variable: Competitive advantage

As seen from the table above, regression analysis has progressed to two stages.

In the first stage, the knowledge management variable enters the model, the correlation coefficient (R) of which has a competitive advantage of 0.736; in this stage, the coefficient of determination is equal to 0.542, and the adjusted coefficient of modification is 0.537. In the next step, introducing the second variable, i.e. customer relationship, the multiple correlations have increased to 0.801. The coefficient of determination has risen to 0.641, and the adjustment coefficient has been increased to 0.635. In other words, based on the adjusted coefficient of determination, 63.5% of the changes in the dependent variable (competitive advantage) are explained by the two variables of knowledge management and customer relationship.

Given that the statistic value of the Watson camera is in the standard range of 1.5 to 2.5, we conclude the independence of the remainder. According to the mentioned indicators, the model has the necessary adequacy.

Table 38 Mode	l adequacy indicators

Watson Camera	Error standard deviation	The adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
1/560	0/38533	0/537	0/542	0/736
1/503	0/34237	0/635	0/641	0/801

The following is a table of variance analysis for the two models mentioned.

Table 39 Test (F analysis of variance) for regression significance

Model	F	Sig
knowledge management	131/148	0/0001
Knowledge management, customer relationship	98/368	0/0001

The above table indicates the significance of regression with respect to Sig = <0.05 < Sig = 0.05 for two stages.

The following table also shows the significance of regression coefficients in the order of entry in the model.

Model		Non-standard coefficients		Standardized coefficients	Т	Sig.
	-	В	Std. Error	Beta		
1	Constant	1/099	0/246		4/477	0/0001
	Knowledge management	0/753	0/066	0/736	11/452	0/0001
2	Constant	0/555	0/239		2/318	0/022
	Knowledge management	0/513	0/073	0/501	7/049	0/0001
	Customer relationship	0/384	0/069	0/393	5/532	0/0001
Dep	Dependent variable: competitive advantage					

Table 40 Significance of regression coefficients

In the table above, there are all significant variables, so to judge the share of the simultaneous impact of each variable (simultaneously) on competitive advantage, we pay attention to the column of standardized beta coefficients in the last model (2). Therefore, it can be said that the results of stepwise regression show that both components of knowledge management and customer relationship can explain the competitive advantage in Noor Financial and Credit Institution of Mazandaran Province.

5. Summaries, conclusions and suggestions

Examining the results of hypotheses and statistical tests

The present study was written to explain competitive advantage based on knowledge management and customer relationship in Noor Financial and Credit Institution of Mazandaran Province. A conceptual model was designed according to the thematic literature and necessary and sufficient research. Based on this model, several factors were tested, which were: disclosure, transformation, internalization, socialization, information technology dimension, social dimension, intellectual dimension. Accordingly, seven sub-hypotheses and two main hypotheses were expressed in this study. A questionnaire was distributed among Noor Financial and Credit Institution employees in Mazandaran province to examine each theory.

First sub-hypothesis:

The first sub-hypothesis of the present study was that disclosure affects competitive advantage in Noor Financial and Credit Institution of Mazandaran Province. This hypothesis was tested, and the findings showed that exposure has a positive and significant effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province. In other words, with the increase of disclosure in Noor Financial and Credit Institution of Mazandaran Province, the competitive advantage will be promoted.

In a study, Asad Beigi and Vahidi (2017) evaluated the effect of knowledge management on competitive advantage in Karafarin Bank. A questionnaire was distributed among 185 managers and experts, and the necessary statistical analysis was performed. The results obtained are consistent with the development of the first sub-hypothesis of the researcher in this research. The hypothesis of a positive and significant effect of management Knowledge of gaining competitive advantage in the entrepreneur bank's four dimensions of socialization, disclosure, conversion, and internalization was confirmed. The

Provide competition. In explaining the first sub-hypothesis and according to the results of the research items, it can be said: Mental and uncertain concepts and the use of network and web to identify tasks at a high level, then the necessary conditions and requirements are provided to promote competitive advantage. Disclosure allows the employee to present their knowledge to others in the form of regular content, seminars, workshops. Inter-group conversations, in response to questions or perceptions of events, are common activities in which this type of conversion occurs, which can help improve employee skills and increase opportunities.

Second sub-hypothesis:

The results of the second sub-hypothesis test showed that conversion has a positive and significant effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province. In other words, with the increase in conversion in Noor Financial and Credit Institution of Mazandaran Province, the competitive advantage will be promoted.

The result obtained from the second sub-hypothesis is also in line with the findings of Asad Beigi and Vahidi (2017). Because Asad Beigi and Vahidi also concluded that conversion has a positive and significant effect on competitive advantage.

Explanation: In explaining the second sub-hypothesis and according to the results of research items, it can be said that if among the employees of Noor Financial and Credit Institution of Mazandaran province, factors such as paying attention to creativity and new and up-to-date ideas in the organization, identifying important rules And vital, comparing new concepts with employees 'experiences, transferring employees' professional knowledge to inexperienced employees, emphasizing development and entrepreneurship, exchanging knowledge with others, organizing regular and transparent information, willingness to share personal information and documenting official results If the result is achieved at a high level in the organization, then the necessary conditions and requirements are provided to promote competitive advantage. Therefore, it can be said that in the stage of transforming the movement, from evident individual knowledge to explicit group knowledge and storing it, sharing knowledge can help strengthen the ability of other colleagues, which increases the competitive advantage. Will be.

Third sub-hypothesis:

The third sub-hypothesis of the present study was that internalization affects competitive advantage in Noor Financial and Credit Institution of Mazandaran Province. This hypothesis was tested, and the findings showed that internalization has a positive and significant effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province.

Asad Beigi and Vahidi (2017), in a study evaluating the effect of knowledge management on competitive advantage in the entrepreneur bank, results showed that internalization has a positive and significant impact on competitive advantage. The results obtained are consistent with the effects of the third hypothesis of the researcher in this research.

In explaining the third sub-hypothesis and according to the results of the research items, we can say: If among the employees of Noor Financial and Credit Institution of Mazandaran province, factors such as effective communication with other colleagues in the organization, giving importance to ideas and organizing collective opinions And provide clear and transparent information to employees at a high level, then the necessary conditions and requirements are provided to promote competitive advantage.

The fourth sub-hypothesis:

The results of the fourth sub-hypothesis of the research showed that socialization affects competitive advantage in Noor Financial and Credit Institution of Mazandaran province. In other words, with the increase of socialization component among the employees of Noor Financial and Credit Institution of Mazandaran province, the competitive advantage also increases.

The results obtained from the fourth sub-hypothesis are consistent with the research of Asad Beigi and Vahidi (2017). Because the results of these researchers also showed that socialization has a significant effect on competitive advantage.

Explaining the fourth sub-hypothesis and according to the results of the research items, we can say that objective examples are the sharing of work-related personal knowledge, the creation of independent research teams in the organization, and the creation of high-level research teams intra-organizational networks. Then the necessary conditions are provided to enhance competitive advantage. In other words, to transfer intangible knowledge from one person to another, by creating a common culture and working in a team and using social theories and cooperation, the component of socialization can be strengthened to provide opportunities to enhance competitive advantage in the organization.

Fifth sub-hypothesis:

The fifth sub-hypothesis of the research was also tested. The results showed that the dimension of information technology affects competitive advantage in Noor Financial and Credit Institution of Mazandaran province. In other words, with the increase of the information technology dimension among the employees of Noor Financial and Credit Institution of Mazandaran province, the competitive advantage also increases.

Hangi et al. (2017) discussed information technology relevance, knowledge management capability, and competitive advantage. Data from 168 organizations in China show that three types of IT resources (e.g., IT infrastructure, human information technology, and IT communication) positively affect knowledge management ability, which positively affects the competitiveness of communication. The results obtained are consistent with the researcher's results in this research.

Explaining the fifth sub-hypothesis and according to the results of research items, we can say: If among the employees of Noor Financial and Credit Institution of Mazandaran province, factors such as using information technology to meet the needs and desires of customers, creating electronic systems To facilitate the response to customer requests and requests and follow the needs and demands of customers at a high level from time to time, then the necessary conditions and requirements are

provided to enhance competitive advantage. Information technology uses computers and other technologies to work with information, which can strengthen the organisation's competitive advantage.

Sixth sub-hypothesis:

The sixth sub-hypothesis of the research was also tested, and the results showed that the social dimension has a positive and significant effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran Province. In other words, with the increase of the social dimension among the employees of Noor Financial and Credit Institution of Mazandaran province, the competitive advantage also increases.

In explaining the sixth sub-hypothesis and according to the results of research items, it can be said: If among the employees of Noor Financial and Credit Institution of Mazandaran province, factors such as applying the opinions and views of employees about the products and services of this organization, Customers ' opinions in the organization, using employees' views about the type and quality of the organization's products, active participation of customers in the organization's planning is at a high level, then the necessary conditions and requirements are provided to promote competitive advantage.

The seventh sub-hypothesis:

The seventh sub-hypothesis of the research was that the intellectual dimension affects the competitive advantage in Noor Financial and Credit Institution of Mazandaran province. The results showed that the philosophical size positively affects competitive advantage in Noor Financial and Credit Institution of Mazandaran Province. In other words, with the increase of intellectual dimension among the employees of Noor Financial and Credit Institution of Mazandaran province, the competitive advantage increases.

In explaining the seventh sub-hypothesis and according to the results of research items, it can be said: If among the employees of Noor Financial and Credit Institution of Mazandaran province, factors such as archiving and recording information related to the organization, providing essential and required information Customers as well as extensive efforts to obtain, visualize, publish, store, organize and archive important customer information are at a high level, then the necessary conditions and requirements are provided to enhance competitive advantage.

The first central hypothesis:

The results of testing the first central hypothesis of the research showed that knowledge management has a positive and significant effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran province. In other words, with the increase of knowledge management among the employees of Noor Financial and Credit Institution of Mazandaran province, the competitive advantage increases. Also, the results of stepwise regression showed that knowledge management could explain the competitive advantage in Noor Financial and Credit Institution of Mazandaran Province.

The result obtained from the first central hypothesis is in line with the results of the following researches:

Beyrami (2015), in a study, examined the role of customer knowledge management in creating a competitive advantage from the perspective of Tabriz tractor manufacturing fans. The research method is descriptive-correlational, and the cluster sampling method has been used. After collecting 450 questionnaires, it was usable. The results show that the knowledge organization dimension is the strongest predictor of competitive advantage. Asad Beigi and Vahidi (2017), in a study, evaluated the effect of knowledge management on competitive advantage in Karafarin Bank, performed the necessary

statistical analysis and hypothesized the positive and significant effect of knowledge management on competitive advantage in the four dimensions of socialization, disclosure, The conversion and internalization in the entrepreneur bank was approved. Kiakjouri et al. (2017), entitled "Study of the role of knowledge management in gaining a competitive advantage in Alborz Insurance Company in the western region of Mazandaran", the results of this study showed that all six independent variables related to knowledge management, including knowledge creation, Knowledge acquisition, organizational learning, knowledge transfer, knowledge application and knowledge storage have a significant relationship with the dependent variable of competitive advantage and affect it. Hangi et al. (2017) discussed information technology relevance, knowledge management capability, and competitive advantage. Data from 168 organizations in China show that three types of IT resources (e.g., IT infrastructure, human information technology, and IT communication) positively affect knowledge management ability, which positively affects the competitiveness of communication. In a study, Gould et al. (2013) examined the effect of the knowledge process on competitive advantage and organizational performance. In their research, they tried to experimentally confirm the ability of knowledge management to improve organizational performance. The organization provides a competitive advantage and ultimately enhances the organisation's performance.

In explaining the first central hypothesis and according to the results of the research items, it can be said: If among the employees of Noor Financial and Credit Institution of Mazandaran province, factors such as disclosure, conversion, internalization and socialization are at a high level, then the situation And the requirements are provided to enhance competitive advantage.

The second primary hypothesis:

The results of testing the second central hypothesis of the research showed that customer relationship has a positive and significant effect on competitive advantage in Noor Financial and Credit Institution of Mazandaran province. In other words, with the increase of customer relationships among the employees of Noor Financial and Credit Institution of Mazandaran province, the competitive advantage increases. Also, the results of stepwise regression showed that customer relationships could explain the competitive advantage in Noor Financial and Credit Institution of Mazandaran Province.

The result obtained from the second central hypothesis is close to the results of the following research:

Al-Kurdi (2016) has conducted a study entitled The Impact of Dimensions of Customer Relationship Management Capability on Organizational Performance. In this research, the dimensions of customer relationship management include customer relationship management technology, customer relationship management processes, customer orientation, customer relationship management organization. Data were analyzed using structural equation modelling. The results showed that customer relationship management significantly affects organizational performance.

Explaining the second central hypothesis and according to the results of research items, we can say: If among the employees of Noor Financial and Credit Institution in Mazandaran province, factors such as information technology, the social dimension and intellectual dimension of the customer relationship are at a high level, then the situation And the requirements are provided to enhance competitive advantage.

Practical suggestions of research

One of the essential research applications is to create new insights to achieve optimal functions and desired results. The research is provided to the managers and employees of Noor Financial and Credit Institute of Mazandaran Province to improve their competitive advantage by taking advantage of these offers and using appropriate methods.

* Suggestion for the first sub-hypothesis:

1. Managers in the organization allow employees to exchange ideas and thoughts about their profession with each other in the organization.

2. Employees present their perceptions to other employees through an expert and technical framework for further understanding.

* Proposal for the second sub-hypothesis:

1. Creativity and new ideas should be valued in the organization and supported by the manager and supervisor.

2. Provide conditions for employees to be encouraged to transfer their professional knowledge to inexperienced and new employees.

C * Proposal for the third sub-hypothesis:

1. In the organization, different ideas and opinions are discussed, and the results are organized and arranged during formal meetings and applied as much as possible in practice.

* Proposal for the fourth sub-hypothesis:

1. Managers form independent research teams to exchange their knowledge through separate research teams.

2. Considering the existing facilities in the organization, conditions should be provided for intraorganizational networks to be used appropriately for sharing information and exchanges.

Proposal for the fifth sub-hypothesis:

1. To facilitate responding to the requests and demands of customers, electronic systems should be created. Using electronic information systems, customers can obtain the information they need and make the necessary decisions about the service.

Proposal for the sixth sub-hypothesis:

1. Provide conditions for employees to receive feedback and views of customers about the products and services of this organization.

2. As much as possible, the opinions and views of the organization's customers should be respected and included in the organisation's goals.

Proposal for the seventh sub-hypothesis:

1. Make desirable and practical efforts to obtain, image, publish, store, organize and archive essential customer information in the organization.

2. Regular communication with customers to find out the services they will need in the future

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