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Investigating the Impact of Financial and Personality Variables on Credit Risk of Banks' Real Customers (Case Study: Omid Entrepreneurship Fund Branches in Markazi Province)

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Abstract
Credit risk is one of the most important challenges confronted by banks, and customers' credit rating is one of the most commonly used methods to measure credit risk that is widely used nowadays. In this way, the better and more effective control of the collected funds is possible (optimal allocation of costs) and significantly reduces the returns to the bank and the probability of credit risk. The purpose of this study was to investigate the effect of financial variables on the credit risk of real customers of Omid Entrepreneurship Fund Branches in Markazi Province and deals with collecting and reviewing the sample views of 54 managers and 11 employees of Omid Entrepreneurship Fund Branches in Markazi Province. The research method in the present study is applied based on the purpose and descriptive-survey based on the type. The library method was used to collect the data, in the field section, the questionnaire method was used to collect data. The questionnaire of the study has been designed based on the data obtained from the basic fundamentals of the study and with regard to the dependent and independent variables of the study, namely, financial variables and credit risk of consumers in 15 questions based on the five-item Likert scale and is a reason for using the Likert scale with regard to accuracy, reliability and simplicity of the appropriate scale for use in different domains. In order to investigate the normality of data distribution and determining the type of appropriate statistic test for data analysis, the results of the K-S test was considered as the criterion. Ultimately, in this research, in case of the normality, the one sample t-test was used and in case of the non-normality, a binominal test was used. Meanwhile, SPSS software was used for calculating. After collecting data and analyzing the findings, all the sub-hypotheses were accepted. Also, the main hypothesis of the research was also tested and accepted, therefore, it can be said that the financial variables of the customers (including the duration of cooperation, remaining debt, type of collateral, average account balances, having an experience of returned check, having an experience of maturing liability, and the duration of refunding) affects the credit risk of the real customers of the branches of Omid entrepreneurial fund of Markazi province.
Keywords: Remaining debt, debt type, Returned check, Maturing liability, Credit risk.

1. Introduction

What is necessary for the financial improvement of a country, is having an active and healthy financial system. The financial system is an intermediary or stage that links the surplus of financial resources with the surplus of financially optimal forms (Attaran, 2012: 13).

In today's complex markets, all industries face risks that, in the absence of attention, will end up with grave consequences. Banks, as the intermediary fund institutes, are responsible for collecting surplus equity of the society and leading it in the form of allotted credits to economic units requires equity. One of the most important factors in the development of economics is the regular and accurate flow of money between banks and customers. Because in case of the imprisonment of resources by customers, the cash flow deficits and will be inefficient in practice. Although the risk of non-refunding by customers (credit risk) is one of the most important risks for banks, the risks and dangers such as operational, liquidity, market risk, etc., also have a significant impact on the bank's operations. Considering the intense and increasing competition of banks and financial institutions, as well as highlighting of other risks, the life of banks has been faced with serious doubts and as it was seen in the recent economic crisis, the lack of attention to the major risks of the banking industry and serious neglecting of comprehensive risk management has caused the bankruptcy of a large number of small and medium-sized banks which is considered as a warning for other activists in this industry (Namdar, 2014).

Today, other banks and institutional investors cannot afford credit as before. In the past, the most important factor in assessing the status of a creditor was the collateral provided by the customer. However, today based on the obtained experience and investigated research, banks have found that the collateral could not be the most important factor in covering credit risk. The lack of the possibility of predicting the consumer's expectation in being able to refund, has led to the loss of opportunity to fund good customers and consequently the reduction in the profitability of the bank, and the probability of funding to those who do not deserve being funded and therefore,

the loss of bank's financial resources.

Omid Entrepreneurship Fund, based on the new approach to supporting microfinance businesses with microfinance financial support, takes important and forgotten responsibilities in the state-sponsored supply chain of private-sector production. Therefore, the optimal performance of this institution in providing credit risk reduction can play a role in supporting entrepreneurship and the growth of the country's manufacturing output. Therefore, considering the importance of reducing credit risk in Omid Entrepreneurship Fund of Markazi Province to continue its activities and preventing bankruptcy of this institution, the present study investigates the effect of financial variables on the credit risk of the real customers of the banks (Case study: Omid Entrepreneurship Branch of Markazi Province), tries to understand this impact and provides practical proposals to reduce the risk in this fund institute.

2. Previous Research

Kargi (2011) examined the effect of credit risk on the profitability of Nigerian banks. He selected the financial issues as the criteria for the Bank's operations, and the credit risk was estimated through annual reports and sample bank accounts for the years 2004-2008. The results indicated that credit risk management has a definite effect on the credit rating of Nigerian banks. They also found that profiting has a reverse relationship with the level of loans. That is, loans and deposits are not efficient and raise the risk of banks.

Dean Tay Hoein and Stephanie Calimber (2010) conducted a research called credit rating for micro-customers for Vietnamese banks at the University of Maastricht, which established a model based on the Logit method. In this study, it was concluded that effective variables in developing countries are the most effective variables in developed country's banks that the severity and weakness of the impact of each variable may vary. The interesting conclusion of this study is that in developing countries, due to the nature of these countries' economies which are constantly changing, credit models must be reviewed after many years and adapted to the current conditions.

Hoein and Claimer (2009), in their article entitled "Credit rating for the micro banking Market of Vietnam", dealt with investigating rating models of for minor loans in Vietnam, as a developing country versus other developed countries. In this regard, the regression model of Logit has been used. Their statistical population was comprised of more than 5,000 files of the funding files, annual mean, bank account, profit rate of the loan, amount of loan and so on to estimate the model. There are significant relationships between the methods of credit rating in the field of business and the lending ratio.

Mehrara (2013), in his research, entitled as "banking performance and macro-economic agents' role on the credit risk of banks, the results of the estimation of regression models in the form of panel data indicate that the lack of liquidity, profitability and operational efficiency and economic growth have a positive effect and both credit risk and inflation rate has a negative effect on the capital adequacy ratio as the index the effectiveness of risk management bank.

Kimiagari et al. (2012) in a study entitles "Credit risk of refunding of the customers of bank (Case study of Shahreza Melli Bank of Iran)" using a regression logistic method, a sample of 31 companies that have received loans from Shahreza Melli Bank of Iran in years 2007 to 2011, was investigated. This was conducted by selecting 28 variables that were important in terms of the banking system and experts of this field and after separating the quantitative and qualitative type, 15 major variables were selected and validated, and all the information was obtained by creating a table and using the SPSS software, the results based on the relationship between the customers and refunding was obtained.

Armeshi (2011) investigated the relationship between customer credit risk and some financial and demographic variables in his master's thesis. After the estimation of the model, the following results were confirmed: the variables of gender, income, type of residence, marital status, age, and occupational status of the customers was affecting the probability of the lack of fund, but the income variable had a negative effect. And the variables of loan size and duration of refunding are not effective in the studied sample.

3. Methodology

3.1 Descriptive Statistics

Descriptive statistics examines variables such as gender, marital status, age and education among the sample population.

- Gender

The results of the questionnaire from the statistical sample indicated that 80% of the respondents are male and 20% of them are female.

Table 1 – Investigating the respondents' status regarding gender

Gender	Frequency	Percentage of frequency
Male	43	80
Female	11	20
Total	54	100

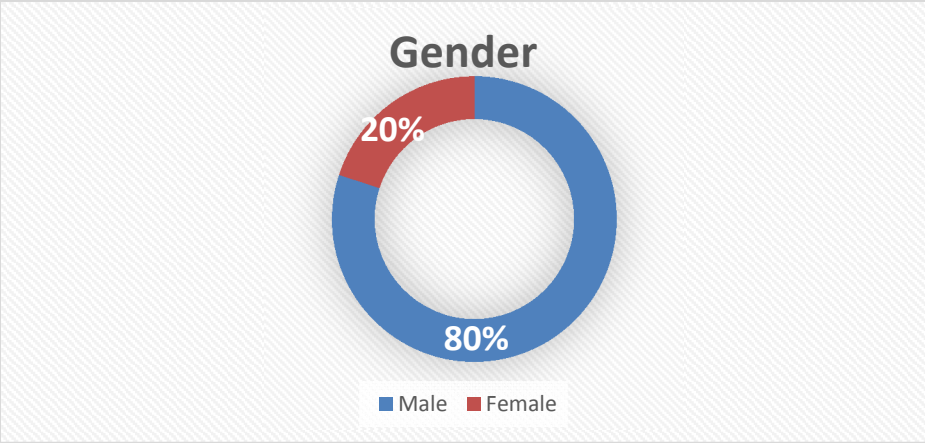

Diagram 1 - Distribution of sample group regarding the respondents' gender

- Marital status

The results of the questionnaire from the statistical sample indicated that 87% of the respondents are married and 13% of them are single.

Table 2 – Investigating the respondents' status regarding the marital status

Marital status	Frequency	Percentage of frequency
Married	47	87
Single	7	13
Total	54	100

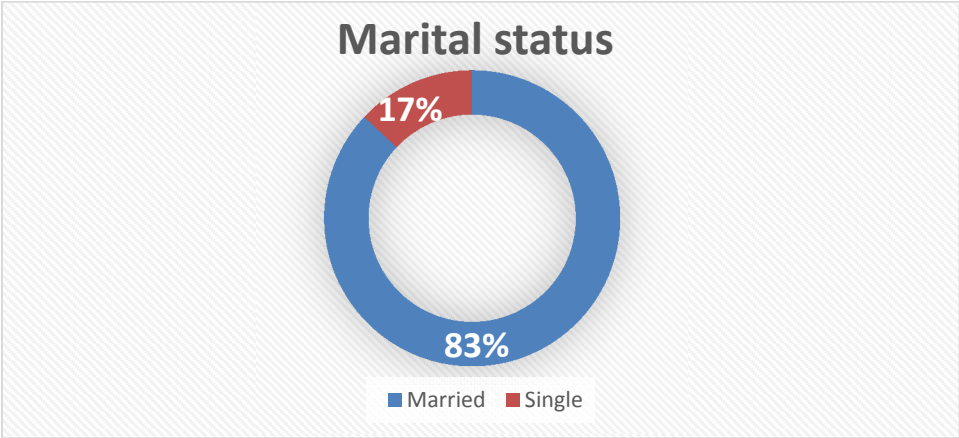

Diagram 2 - Distribution of sample group regarding the respondents' marital status

- Age

The results indicate that the highest frequency is for the age group of 41 to 50 years, with a frequency percentage of 39%. Age group of 20 to 30 with 13%, age group of 31 to 40 with 22%, and age group of older than 51 with 26% have the frequency of statistical sample.

Table 3 – Investigating the respondents' status regarding the age

Age	Frequency	Percentage of frequency
20 to 30	7	13
31 to 40	12	22
41 to 50	21	39
Over 50	14	26
Total	54	100

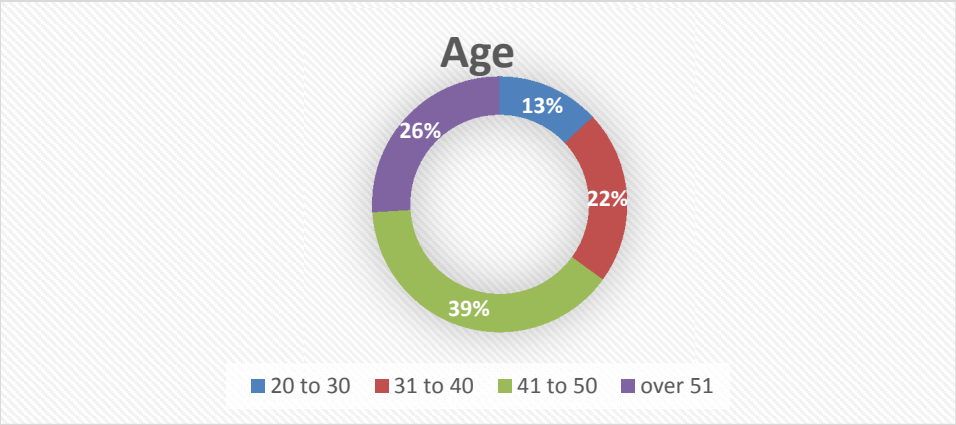

Diagram 3 - Distribution of sample group regarding the respondents' age

- Education

According to the results, 4% of the respondents had a diploma, 13% had an associate degree, 50% had a bachelor's degree and 33% have a master's degree and higher.

Table 4 – Investigating the respondents' status regarding education

Education	Frequency	Percentage of frequency
Under diploma	0	0
Diploma	2	4
Associate degree	7	13
Bachelor's degree	27	50
Master's degree and higher	18	33
Total	54	100

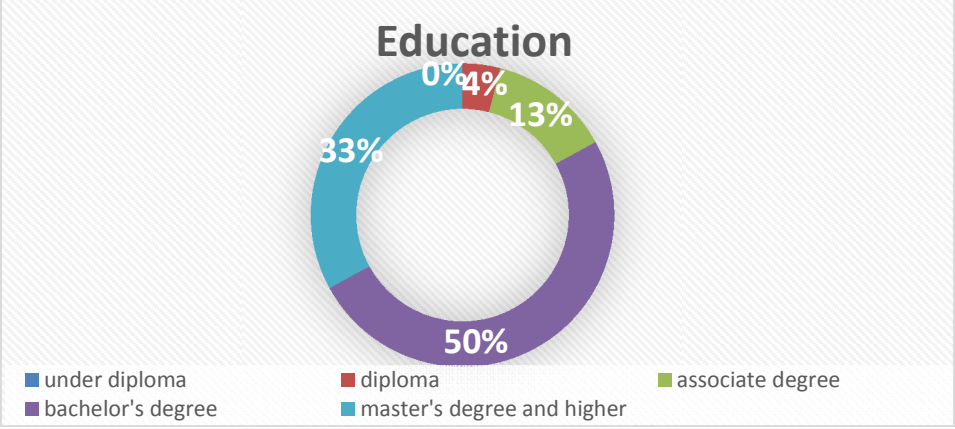

Diagram 4 - Distribution of the sample group according to the respondents' education

- Frequency distribution of research variables

In this section of descriptive statistics, we study the frequency distribution of research variables. Indexes such as: mean, standard deviation, criterion, variance, minimum and maximum are investigated.

Table 5. Distribution results of the variables of research

Variable	Mean	Variance	SD	Min.	Max.
Duration of cooperation	2.91	0.715	0.845	1	5
Remaining debt	3.07	1.211	1.100	1	5
Type of collateral	2.98	0.679	0.823	1	4.5
Account balance	2.88	0.525	0.724	1	4
Returned check	3.12	0.869	0.946	1	5
Maturing liability	2.85	0.789	0.888	1	4.5
Refund time	3.15	0.961	0.980	1	5
Financial variables of customers	2.99	0.282	0.531	1.79	4.02

3.2 Inferential Statistics

In this section, we investigate the questionnaires distributed among the statistical sample and we analyze the

information we obtain from them.

- Testing the normal distribution of variables

In order to investigate the usefulness of the research variables, we use the Kolmogorov-Smirnov test. The test hypothesis are as follows:

H0: The variable distribution is normal.
H1: The variable distribution is not normal.

Table 6. Results of S-K test for research variables

		Duration of cooperation	Remaining debt	Type of collateral	Account balance	Returned check	Maturing liability	Refund time	Financial variables of customers
N		54	54	54	54	54	54	54	54
Normal Parameters [a, b]	Mean	2.9167	3.071	2.9815	2.8827	3.1203	2.8519	3.1574	2.9978
	Std. Deviation	0.82535	1.10063	0.82395	0.72341	0.93637	0.88833	0.98010	0.53126
Most Extreme Difference	Absolute	0.162	0.132	0.123	0.140	0.119	0.191	0.193	0.069
	Positive	0.115	0.132	0.091	0.117	0.088	0.191	0.193	0.053
	Negative	-0.162	-0.121	-0.123	-0.140	-0.119	-0.134	-0.104	-0.069
Kolmogorov-Smirnov	Z	1.194	0.968	1.050	1.042	0.873	1.303	1.321	0.509
Asymp.	Sig. (2-tailed)	0.116	0.306	0.221	0.237	0.431	0.039	0.035	0.958

a.Test distribution is normal.
b.Calculated from data.

If the significance level (sig) of the Kolmogorov-Smirnov test for research variables is greater than 0.05, the zero hypothesis is accepted and has a Normal distribution with a possibility of 95%. According to the results obtained from table 6, all the variables have a normal distribution except "maturing liability" and "refund time".

- Testing the research hypotheses

If we want to test the hypothesis with a confidence coefficient of 95%, in the mean test of a community, the means are compared with the mediocrity that is 3 (3 is the average of the 5-item Likert scale). If μ is greater than 3, it is effective, and otherwise, its effectiveness is lower and the hypothesis is rejected.

- Investigating the first hypothesis of the research

"Customers' duration of cooperation with the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "duration of cooperation" on the variable "credit risk", considering that, the variable "duration of cooperation" is normal, the one-sample t-test or the mean of a community is used.

$$\begin{cases} H0: \mu \geq 3 \\ H1: \mu < 3 \end{cases}$$

Table 7. Results of a one-sample t-test for the first sub-hypothesis

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Duration of cooperation	-0.724	53	0.472	-0.08333	-0.3141	0.1474

According to Table 7, at the detection level of 5% error and 95% confidence, the value of sig is greater than 5%. Therefore, H0 is accepted, and it can be claimed that the mean scores in this hypothesis are greater and equal to 3. Considering that the mean is more than 3, it can be said that the first sub-hypothesis is accepted and:

"Customers' duration of cooperation with the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the second hypothesis of the research

"Customers' remaining debt to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "remaining debt" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used.

$$\begin{cases} H0: \mu \geq 3 \\ H1: \mu < 3 \end{cases}$$

Table 8. Results of a one-sample t-test for the second sub-hypothesis
One-Sample Test

	Test Value = 3					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Remaining debt	0.495	53	0.623	0.07407	-0.2263	0.3745

According to Table 7, at the detection level of 5% error and 95% confidence, the value of sig is greater than 5%. Therefore, H0 is accepted, and it can be claimed that the mean scores in this hypothesis are greater and equal to 3. Considering that the mean is more than 3, it can be said that the second sub-hypothesis is accepted and:
"Customers' remaining debt to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the third hypothesis of the research

"The type of collaterals provided to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "type of collatral" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used.

$$\begin{cases} H0: \mu \geq 3 \\ H1: \mu < 3 \end{cases}$$

Table 9. Results of a one-sample t-test for the third sub-hypothesis
One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Type of collateral	-0.165	53	0.869	-0.01852	-0.2434	0.2064

According to Table 9, at the detection level of 5% error and 95% confidence, the value of sig is greater than 5%. Therefore, H0 is accepted, and it can be claimed that the mean scores in this hypothesis are greater and equal to 3. Considering that the mean is more than 3, it can be said that the third sub-hypothesis is accepted and:
"The type of collaterals provided to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the fourth hypothesis of the research

"The mean of the customer's account balance affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "account balance" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used.

$$\begin{cases} H0: \mu \geq 3 \\ H1: \mu < 3 \end{cases}$$

Table 10. Results of a one-sample t-test for the fourth sub-hypothesis
One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Account balance	-1.190	53	0.239	-0.11728	-0.3150	0.0804

According to Table 10, at the detection level of 5% error and 95% confidence, the value of sig is greater than 5%. Therefore, H0 is accepted, and it can be claimed that the mean scores in this hypothesis are greater and equal to 3. Considering that the mean is more than 3, it can be said that the fourth sub-hypothesis is accepted and:
"The mean of the customer's account balance affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the fifth hypothesis of the research

"Having the experience of returned check affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "returned check" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used.

$\begin{cases} H0: \mu \geq 3 \\ H1: \mu < 3 \end{cases}$

Table 11. Results of a one-sample t-test for the fifth sub-hypothesis

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Returned check	0.935	53	0.354	0.12037	-0.1379	0.3787

According to Table 11, at the detection level of 5% error and 95% confidence, the value of sig is greater than 5%. Therefore, H0 is accepted, and it can be claimed that the mean scores in this hypothesis are greater and equal to 3. Considering that the mean is more than 3, it can be said that the fifth sub-hypothesis is accepted and:

"Having the experience of returned check affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the sixth hypothesis of the research

"Having the experience of maturing liability affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "maturing liability" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used.

$\begin{cases} H0: \mu \leq 3 \\ H1: \mu > 3 \end{cases}$

Table 12. Results of the binomial test for the sixth sub hypothesis

Binomial Test

	Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Maturing liability Group 1	≤ 3	36	0.67	0.50	0.020
Group 2	> 3	18	0.33		
Total		54	1.00		

According to Table 12, at the detection level of 5% error and 95% confidence, the value of sig is less than 0.05% and therefore, H0 is rejected. 63% of the statistical population have responses with mean greater than 3. Therefore, the seventh sub-hypothesis is accepted and:

"The duration of refunding affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the seventh hypothesis of the research

"The duration of refunding affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "duration of refunding" on the variable "credit risk", considering that, the dependent variable is not normal, the binominal test is used.

$\begin{cases} H0: \mu \leq 3 \\ H1: \mu > 3 \end{cases}$

Table 13. Results of the binomial test for the seventh sub hypothesis

Binomial Test

	Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Maturing liability Group 1	≤ 3	34	0.63	0.50	0.076
Group 2	> 3	20	0.37		
Total		54	1.00		

According to Table 13, at the detection level of 5% error and 95% confidence, the value of sig is less than 0.05% and therefore, H0 is rejected. 63% of the statistical population have responses with mean greater than 3. Therefore, the seventh sub-hypothesis is accepted and:

"The duration of refunding affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the main hypothesis of the research

"The financial variables of customers affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "financial varibles" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test of a community is used.

$$\begin{cases} H0: \mu \geq 3 \\ H1: \mu < 3 \end{cases}$$

Table 14. Results of the one-sample t-test for the main hypothesis

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Financial variables	-0.030	53	0.976	-0.00220	-0.1472	0.1428

According to Table 14, at the detection level of 5% error and 95% confidence, the value of sig is less than 5%. Therefore, H0 is accepted and it can be claimed that the mean score in this hypothesis is greater and equal to 3. Considering that the mean is greater than 3, it can be said that the main hypothesis is confirmed.

"The financial variables of customers affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

- Investigating the effect of demographic components on research variables

		Levene's test for equality of variance		t-test for equality of means						
		F	Sig.		df	Sig. (2-tailed)	Mean difference	Std. Error Difference	95% confidence interval of the difference	
									Lower	Upper
Duration of cooperation	Equal variance assumed	0.251	0.618	0.231	52	0.818	0.06660	0.28822	-0.51175	0.64494
	Equal variance not assumed			0.227	17.016	0.808	0.06660	0.26937	-0.50169	0.63388
Remaining debt	Equal variance assumed	2.015	0.162	1.824	52	0.074	0.66385	0.36398	-0.06654	1.39423
	Equal variance not assumed			2.203	20.893	0.039	0.66385	0.30140	0.03685	1.29085
Type of collateral	Equal variance assumed	0.001	0.977	1.150	52	0.255	0.31923	0.27755	-0.23772	0.87619
	Equal variance not assumed			1.153	15.600	0.266	0.31923	0.27654	-0.26822	0.90670
Account balance	Equal variance assumed	0.012	0.913	0.638	52	0.526	0.15715	0.23615	-0.33677	0.65108
	Equal variance not assumed			0.627	15.777	0.527	0.15715	0.23308	0.35874	0.67305
Returned check	Equal variance assumed	0.314	0.577	-0.595	52	0.555	-0.19133	0.32173	-0.83693	0.45427
	Equal variance not assumed			-0.549	13.172	0.592	-0.19133	0.34866	-0.93829	0.55563
Financial variables	Equal variance assumed	0.024	0.879	0.678	52	0.501	0.12227	0.18033	-0.23978	0.38332
	Equal variance not assumed			0.666	15.213	0.515	0.12227	0.18338	-0.26833	0.51287

To investigate the effect of demographic components on the variables of the research with regard to the normality or non-normality of their distribution, we use parametric or non-parametric tests. First, non-normal variables are tested, if H0 is confirmed for them, normal variables will also be tested. Otherwise, there is no need

for testing the normal variable.

- Investigating the impact of respondents' gender on research variables

To investigate the effect of male and female gender on non-normal variables, Mann Whitney's U test is used, the results of which are according to the table below.

H0: Respondents' gender does not have an effect on answering the questions of the questionnaire.

H1: Respondents' gender has an effect on answering the questions of the questionnaire.

H0: $\mu 1 = \mu 2$

H1: $\mu 1 \neq \mu 2$

Table 15: Results of Mann Whitney's U test to investigate the gender component

Test statistics a

	Maturing liability	Duration of refund
Mann-Whitey U	215.500	204.500
Wilcoxon	281.500	1150.500
Z	-0.460	-0.700
Asymp. Sig (2-tailed)	0.645	0.484

a.Grouping Variable: gender

Considering the above table, the value of sig. obtained for variables is greater than 0.05, which means that H0 and the variances are equal, therefore, this comparison implies that there is no difference between male and female in responding to the questionnaire (for non-normal variables).

Then, in order to investigate the effect of male and female on the normal variables, we use the mean comparison test of two independent societies, the results of which are as follows.

Table 16. The results of the comparison of the mean of two independent societies to investigate the gender component

Independent samples test

With respect to the above table, the amount of sig obtained in Levene's test for the variables is greater than 0.05, therefore, variances are equal. In a 2-tailed test, we consider the higher sig which is related to equal variances, it seems that its value is greater than 0.05 and this means that the assumption H0 is confirmed, so this comparison indicates that there is no difference between the male and female in responding to the questionnaire.

- Investigating the impact of respondents' marital status on research variables

To investigate the effect of marital status on non-normal variables, Mann Whitney's U test is used, the results of which are according to the table below.

H0: Respondents' marital status does not have an effect on answering the questions of the questionnaire.

H1: Respondents' marital status has an effect on answering the questions of the questionnaire.

H0: $\mu 1 = \mu 2$

H1: $\mu 1 \neq \mu 2$

Table 17. Results of Mann Whitney's U test to investigate the component of marital status

Test statistics b

	Maturing liability	Duration of refund
Mann-Whitey U	152.000	158.500
Wilcoxon	1280.000	186.500
Z	-0.329	-0.157
Asymp. Sig (2-tailed)	0.742	0.875
Exact Sig. [2*(1-tailed Sig.)]	0.762[c]	0.880[c]

a.Not corrected for ties.

b.Grouping Variable: marital status

Considering the above table, the value of sig. obtained for variables is greater than 0.05, which means that H0 is confirmed and the variances are equal, therefore, this comparison implies that there is no difference between married and single individuals in responding to the questionnaire (for non-normal variables).

Then, in order to investigate the effect of marital status on the normal variables, we use the mean comparison test of two independent societies, the results of which are as follows.

Table 17. The results of the comparison of the mean of two independent societies to investigate the component of marital status

Independent samples test

		Levene's test for equality of variance		t-test for equality of means						
		F	Sig.		df	Sig. (2-tailed)	Mean difference	Std. Error Difference	95% confidence interval of the difference	
									Lower	Upper
Duration of cooperation	Equal variance assumed	1.176	0.283	-0.516	52	0.608	-0.17781	0.34488	-0.86986	0.51323
	Equal variance not assumed			-0.626	9.303	0.527	-0.17781	0.28425	-0.81766	0.46203
Remaining debt	Equal variance assumed	3.031	0.088	0.740	52	0.463	0.33131	0.44782	-0.56731	1.22992
	Equal variance not assumed			1.129	12.897	0.279	0.33131	0.29341	-0.30307	0.96569
Type of collateral	Equal variance assumed	1.553	0.218	-0.552	52	0.583	-0.18541	0.33602	-0.85969	0.48887
	Equal variance not assumed			-0.758	10.834	0.465	-0.18541	0.24475	-0.72512	0.35230
Account balance	Equal variance assumed	0.350	0.557	0.269	52	0.641	0.13880	0.29567	-0.35449	0.73210
	Equal variance not assumed			0.209	7.295	0.694	0.13880	0.33925	-0.65688	0.93449
Returned check	Equal variance assumed	0.935	0.338	-0.922	52	0.361	-0.35410	0.38395	-1.12455	0.41635
	Equal variance not assumed			-0.746	7.053	0.480	-0.35410	0.37440	-1.47418	0.76598
Financial variables	Equal variance assumed	0.171	0.681	-0.318	52	0.752	-0.06897	0.21708	-0.50457	0.36663
	Equal variance not assumed			-0.320	7.930	0.757	-0.06897	0.21576	-0.56729	0.42935

With respect to the above table, the amount of sig obtained in Levene's test for the variables is greater than 0.05, therefore, variances are equal. In a 2-tailed test, we consider the higher sig which is related to equal variances, it seems that its value is greater than 0.05 and this means that the assumption H0 is confirmed, so this comparison indicates that there is no difference between the married and single individuals in responding to the questionnaire.

- Investigating the effect of respondents' age on research variables

In order to investigate the effect of different age ranges on normal variables, we use Kruskal Wallis test, the results of which are as the following table.

H0: Respondents' age does not have an effect on answering the questions of the questionnaire.

H1: Respondents' age has an effect on answering the questions of the questionnaire.

$$\begin{cases} H0: \mu 1 = \mu 2 = \ldots = \mu k \\ H1: \mu i \neq \mu j \end{cases}$$

Table 19. Results of Kruskal Wallis test to investigate the component of age

Test statistics a, b

	maturing liability	Duration of refund
Chi-Square	5.702	1.456
Df	3	3
Asymp. Sig.	0.127	0.692

a.Kruskal Wallis Test

b.Grouping Variable: age

With respect to the above table, the value of sig obtained for all variables is greater than 0.05, which means that H0 is confirmed and the variances are equal, so this comparison indicates that there is no difference between the different age categories in answering the questionnaire (for non-normal variables).

Then we use ANOVA test or variance analysis to investigate the effect of different age ranges on normal variables, and the results are as the following table.

ANOVA

		Sum of squares	df	Mean square	F	Sig.
Duration of cooperation	Between groups	2.786	3	0.929	1.323	0.277
	Within groups	35.089	50	0.702		
	Total	37.875	53			
Remaining debt	Between groups	3.552	3	1.184	0.976	0.412
	Within groups	60.652	50	1.213		
	Total	64.204	53			
Type of collateral	Between groups	0.976	3	0.325	0.464	0.708
	Within groups	35.006	50	0.700		
	Total	35.981	53			
Account balance	Between groups	1.393	3	0.464	0.879	0.458
	Within groups	26.419	50	0.528		
	Total	27.813	53			
Returned check	Between groups	2.363	3	0.788	0.873	0.461
	Within groups	45.104	50	0.902		
	Total	47.468	53			
Financial variables	Between groups	0.473	3	0.158	0.545	0.654
	Within groups	14.485	50	0.290		
	Total	14.958	53			

With respect to the above table, the amount of sig obtained for the variables is greater than 0.05, therefore, variances are equal. Therefore, this comparison indicates that there is no difference between the different age ranges in responding to the questionnaire.

- Investigating the effect of respondents' education on research variables

In order to investigate the effect of different education levels on normal variables, we use Kruskal Wallis test, the results of which are as the following table.

H0: Respondents' education does not have an effect on answering the questions of the questionnaire.

H1: Respondents' education has an effect on answering the questions of the questionnaire.

$$\begin{cases} H0: \mu 1 = \mu 2 = \ldots = \mu k \\ H1: \mu i \neq \mu j \end{cases}$$

Table 21. Results of Kruskal Wallis test to investigate the component of education

Test statistics [a, b]

	maturing liability	Duration of refund
Chi-Square	8.985	2.092
Df	3	3
Asymp. Sig.	0.029	0.554

a.Kruskal Wallis Test

b.Grouping Variable: education

According to the above table, the amount of sig obtained for the variable "Duration of refund" is greater than 0.05 and for the variable of "maturing liability" it is smaller than 0.05, which means that H0 is rejected and the variances are unequal. Therefore, this comparison indicates that there is a difference between the various levels of education in answering the questionnaire (for non-normal variables). Therefore, there is no need for testing the normal variables.

4. Conclusion

After processing the data by statistical tools and software, the following results were obtained that could indicate the confirmation or rejection of the research hypothesis. In order to test the hypothesis, a binominal test and one-sample T-test have been used. The obtained results are as follows.

The results of testing the first hypothesis
"Customers' duration of cooperation with the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "duration of cooperation" on the variable "credit risk", considering that, the variable "duration of cooperation" is normal, the one-sample t-test or the mean of a community is used. According to the results, sig is greater than 5%.
Therefore, the assumption H0 is accepted and it can be claimed that the mean scores in this hypothesis are greater and equal to 3.
Considering that the mean is more than 3, it can be said that the first sub-hypothesis is accepted and:
"Customers' duration of cooperation with the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
Results of testing the second sub-hypothesis
"Customers' remaining debt to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "remaining debt" on the variable "credit risk", considering that the dependent variable is normal, the one-sample t-test or the mean of a community is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig is greater than 5%. Therefore, the assumption H0 is accepted, and it can be claimed that the mean scores are greater and equal to 3 in this hypothesis.
Considering that the mean is more than 3, it can be said that the second sub-hypothesis is accepted and:
"Customers' remaining debt to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
Results obtained from testing the third research hypothesis
"The type of collaterals provided to the bank affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "type of collateral" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig is greater than 5%. Therefore, the assumption H0 is accepted, and it can be claimed that the mean scores are greater and equal to 3 in this hypothesis.
Considering that the mean is more than 3, it can be said that the third sub-hypothesis is accepted and:
"Type of collaterals provided by the customers affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
Results obtained from testing the fourth research hypothesis
"The mean of the customer's account balance affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "account balance" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig is greater than 5%. Therefore, the assumption H0 is accepted, and it can be claimed that the mean scores are greater and equal to 3 in this hypothesis.
Considering that the mean is more than 3, it can be said that the fourth sub-hypothesis is accepted and:
"The mean of the customer's account balance affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
Results obtained from testing the fifth research hypothesis
"Having an experience of a returned check affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "returned check" on the variable "credit risk", considering that, the dependent variable is normal, the one-sample t-test or the mean of a community is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig is greater than 5%. Therefore, the assumption H0 is accepted, and it can be claimed that the mean scores are greater and equal to 3 in this hypothesis.
Considering that the mean is more than 3, it can be said that the fifth sub-hypothesis is accepted and:
"Having an experience of a returned check affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
Results obtained from testing the sixth research hypothesis
"Having an experience of a maturing liability affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."
To study the effect of the variable "maturing liability" on the variable "credit risk", considering that, the dependent variable is not normal, the binominal t-test is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig of the binominal test is greater than 0.05%. Therefore, the assumption H0 is rejected. 67% of the statistical population have answers with the mean scores of greater than 3. Therefore, the sixth hypothesis is accepted and:

"Having an experience of a maturing liability affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

Results obtained from testing the seventh research hypothesis

"Duration of refunding affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "duration of refunding" on the variable "credit risk", considering that, the dependent variable is not normal, the binominal test is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig of the binominal test is less than 0.05%. Therefore, the assumption H0 is rejected. 63% of the statistical population have answers with the mean scores of greater than 3. Therefore, the seventh hypothesis is accepted and:

"Having an experience of a duration of refunding affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

Results obtained from testing the main research hypothesis

"Customers' financial variables affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

To study the effect of the variable "financial varibles" on the variable "credit risk", considering that, the dependent variable is not normal, the one-sample t-test or the mean of a community is used. According to the results obtained at the diagnostic level of 5% error and 95% of confidence, sig of greater than 5%. Therefore, the assumption H0 is rejected and it can be claimed that the mean scores in this hypothesis is greater and equal to 3.

Considering that the mean is greater than 3, it can be said that the main hypothesis is accepted and:

"Customers' financial variables affects the Credit Risk of the real customers of Omid Entrepreneurship Fund Branches of Markazi Province."

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