

## Diversification Effects on Growth and Development of Industrial Plants Producing Household Appliances

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**Abstract:** Many companies across the world have experienced some form of diversification. Many of these companies have succeeded and some have failed that many of them have known the lack of attention to different aspects of diversification as the reason of their failure. In this study, 4 main factors of cost, performance, risk and innovation are taken into consideration among different aspect affected by the implementation of diversification that factors of risk and innovation have been studied simultaneously. A researcher-made questionnaire was distributed in 4 companies manufacturing household appliances in Isfahan province for a detailed review of 3 mentioned factors. The considered statistical population was 500 persons that of these, 152 persons were selected according to the proportions in statistical population. Obtained data were analyzed by using Spss software and in both levels of descriptive statistics (including frequency, percentage, mean and standard deviation) and inferential statistics (including univariate t -test, variance analysis test and Friedman test). The findings show that diversification has been able to affect all aspects of cost increases, performance improvement, increase of risk and innovation.

**Keywords:** diversification, organizational costs, organizational innovation, organizational performance, and organizational risk

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### I. Introduction

Studies show that many large and successful companies in the world today have experienced some form of diversification in their growth. In fact, diversification, especially related diversification or vertical integration is considered as one of the key strategies for economic enterprises' growth at the stage of the life cycle of enterprises. This study explores different aspects of diversification in company's products and evaluates its simultaneous impact on cost, innovation, performance of organization and risk in organization. The subject of choosing between diversification and specialization in the company's business activities is widely taken into consideration in the recent literature on financial management. Dennis noticed that effect of industrial diversification on firm value is negative and there is a negative correlation between diversity and performance. Cruz, Hoshino, Clark and Efe show that a major drop in performance occurs after variation. Williamson stated that firm's diversity can be created due to the need to build and expand the firm's internal capital markets. Grant, Jamuin and Thomas during a study on English companies concluded that diversity has a direct correlation with firms' profits. Highland and Diltz empirically studied the firm with respect to the representation attitude. The diversified companies comprise more cash in their hands. Haley, Heron and Lie, Rahman, Limek state that there is a huge improvement in performance after variation.

### II. Problem Description

Diversification is a topic of interest to management scientists, as well as directors of factories and economic enterprises for many years. Creating diversity in productions results in creating competitive advantage and increased customer loyalty. Of course, on the other hand, diversification leads to increasing cost and require more initial capital. Creating balance between benefit and cost is an argument which causes launching diversification system to be faced with doubt. Some factories believe that specialized creating only one type of product leads to success. Some others believe that variety in products make up a larger share of the customer's shopping cart and will ultimately increase profits. In recent years, many factories in Iran have conducted both homogeneous and heterogeneous diversification. Some companies have been successful in implementing diversification, but unfortunately, many factories have been unsuccessful that of course, incomplete information and lack of attention to the dimensions of diversification are known as its reason. This study aims to study the effect of diversification on the growth and development of factories by considering its various aspects to finally reach the conclusion that whether diversification causes the competitive advantage or will only increase costs.

**Research Purposes:**

The main objective of this study is to investigate different aspects of diversification in appliance manufacturing factories in Esfahan province to create growth and development in the relevant industries. For this purpose, the following sub-objectives have been studied.

- Investigating the relationship between diversification and reduction or increase in costs.
- Investigating the relationship between diversification and organization performance improvement.
- Investigating the relationship between diversification and risk creation and innovation increase in organization.

**Research questions:**

Does diversification cause reduction or increase in costs?  
Does diversification improve the performance of organization?  
Does diversification cause risk creation or innovation increase in organization?

**Methods:**

This study is an applied research and also as library methods, literature review and field methods such as questionnaire are used in this paper, so we can say that its method is descriptive-survey.

**Statistical society:**

Statistical population in this study consists of all company, contract and official staff in administrative division of four major appliance manufacturing factories in 2013. The total population is 500 people that of these, 382 persons are male and 118 are female. 80 of them are company staff, 33 contract staff and 321 official staff.

**Sample Volume Determination:**

To determine the sample size due to the unavailability of the ratio of proponents and an opponent, the above ratio was initially calculated using 30 preliminary questionnaires and then, the sample size was estimated using Cochran formula.

$$N = \frac{(500)(1.96)(1.96)(0.2)(0.8)}{(499)(0.05)(0.05) + (1.96)(1.96)(0.2)(0.8)} = 165$$

Ratio of proponents and opponents is determined on the basis of distributing 30 questionnaires. Then, 165 questionnaires were distributed among the members of statistical sample. 152 questionnaires were returned among 165 distributed questionnaires. With researcher's emphasis on observing the ratio of company, contract and official staff, questionnaires of 23 company staff, 30 contract staff, and 99 official staff are collected.

**III. Data Collection Method:**

In this study, regarding the collection of data related to research questions, field methods are mainly used and library methods like books, journals, and ... are used to collect information related to the research literature and then content analysis are discussed.

**Validity and Reliability of Research**

In this study, face validity is used to check the validity of questionnaire. Hence, face validity depends on the judgment of the jury. It is given to a number of relevant experts and scholars, including supervisors, advisors, experts and researchers and familiars with the topic of change management and organizational participation to check the validity of this study.

In the present study, whose main instrument of data measurement is questionnaire, reliability of the questionnaire was calculated by using Cronbach's alpha. The method is used for calculating the internal consistency of measurement tools such as questionnaires or tests that measure various features. For the questionnaire of the study, 30 questionnaires were distributed among company, contract and official staff in preliminary distribution and accordingly, Cronbach's alpha (Cronbach, 2003) of whole questionnaire was calculated according to the Cronbach's alpha formula that was equal to 0.922 and thus became clear that the reliability of the questionnaire is very appropriate.

$$r_a = \frac{41}{40} \left( 1 - \frac{41.85}{408/59} \right) = 0.922$$

**Analysis of Data**

The results show that the highest mean score related to the responses in relation to the organization's cost increase is for "increase in employment rate" with an average of 4.02 and the lowest mean score of responses is for "increase in variable costs" with an average of 3.45.

The results related to the questions about performance of Organization show that the highest mean score of responses is for "operational staff's performance improvement" with an average of 4.03 and the lowest mean score is for "efficiency increase" and "determination of efficiency in various sectors," with an average of 3.38.

On the other hand the results related to the impact of diversification on innovation and organizational risks show that the highest mean score of responses is for "research - oriented spirit in the level of executives and employees" with an average of 3.96 and the lowest mean is for "risk increase in organization with the increase in the number of products" with an average of 3.44.

Univariate t-test related to question 1:

	Mean	Standard deviation	standard error	t	p
Organizational Costs	3.72	0.573	0.46	15.52	0.001

Based on the results in the table, the shown t is significant at the level of  $p \leq 0.05$ . Thus, diversification affects organizational costs more than average level.

Univariate t-test related to question 2:

	Mean	Standard deviation	standard error	t	p
Organizational Performance	3.71	0.499	0.45	17.56	0.001

Based on the results in the table, the shown t is significant at the level of  $p \leq 0.05$ . Thus, diversification affects organizational performance more than average level.

Univariate t-test related to question 2:

	Mean	Standard deviation	standard error	t	p
Organizational risk and innovation	3.72	0.576	0.46	15.42	0.001

Based on the results in the table, the shown t is significant at the level of  $p \leq 0.05$ . Thus, diversification affects organizational risk and innovation more than average level.

Paired comparison test and variance analysis:

Variance analysis of question 1:

	Mean square	F	P	Eta	Power
Sex	0.041	0.140	0.719	0.002	0.066
Work experience	0.27	0.850	0.535	0.059	0.318
Education	0.921	3.17	0.018	0.136	0.802
Type of cooperation	0.182	0.628	0.536	0.015	0.152

Paired comparison test of question 1:

Education		Mean difference	Significance level
School education	Diploma	- 0.847	0.001
School education	Associate Degree	- 0.963	0.001
School education	Bachelor	- 1.19	0.001
School education	MA and more	- 0.1.10	0.001
Diploma	BA	- 0.347	0.012
Associate Degree	BA	- 0.232	0.046

Based on the results in the table, the difference between the mean scores of staff having school education with diploma, associate degree, BA and MA and more, and diploma with MA and associate degree with MA educations has been significant.

**Analysis of Variance for the Second Question:**

Summary of the significance result of difference in staff's comments regarding the role of diversification on the performance of organization - in terms of demographic characteristics.

	Mean square	F	P	Eta	Power
Sex	0.017	0.100	0.753	0.001	0.061
Work experience	0.370	2.18	0.053	0.139	0.743
Education	1.17	6.90	0.001	0.245	0.992
Type of cooperation	0.297	1.75	0.180	0.041	0.357

Based on the results in the table, the shown F is significant about education at the level of  $p \leq 0.05$ . Thus, there is a difference between staff's comments in terms of education.

Paired comparison test of the question 2:

Paired comparison table of the mean score difference of staff's comments regarding the role of diversification on the performance of organization - in terms of education

Education		Mean difference	Significance level
School education	Diploma	- 0.783	0.001
School education	Associate Degree	- 0.958	0.001
School education	Bachelor	- 1.09	0.001
School education	MA and more	- 0.1.02	0.001
Diploma	BA	- 0.242	0.026
Diploma	MA and more	- 0.246	0.039

Based on the results in the table, the difference between the mean scores of staff having school education with diploma, associate degree, BA and MA and more, and diploma with MA and diploma with MA and more educations has been significant.

**Variance Analysis of Question 3:**

Summary of the significance result of difference in staff's comments regarding the role of diversification on the organizational risk and innovation - in terms of demographic characteristics.

	Mean square	F	P	Eta	Power
Sex	0.000	0.002	0.966	0.000	0.050
Work experience	1.15	1.15	0.337	0.079	0.432
Education	8.08	8.08	0.001	0.285	0.997
Type of cooperation	1.71	1.71	1.86	0.041	0.351

Based on the results in the table, the shown F is significant about education at the level of  $p \leq 0.05$ . Thus, there is a difference between staff's comments in terms of education.

Paired comparison test of question 3:

Paired comparison table of the mean score difference of staff's comments regarding the role of diversification on the organizational risk and innovation - in terms of education

Education		Mean difference	Significance level
School education	Diploma	- 1.18	0.001
School education	Associate Degree	- 1.30	0.001
School education	Bachelor	- 1.40	0.001
School education	MA and more	- 1.42	0.001

Based on the results in the table, the difference between the mean scores of staff having school education with diploma, associate degree, BA and MA and more educations has been significant.

#### **IV. Conclusion:**

According to the information obtained it can be argued that the highest average is for the increase in employment due to the diversification that as a result, staff has claimed that diversification causes the organizations to require additional forces more to meet the needs of production, marketing, design and development. That it results in more recruits. The obtained data indicates that the seen  $t$  is significant at the level of  $p \leq 0.05$ . Thus, diversification has a role in organizational costs more than the average level. Data related to the variance analysis of questions asked in the first question according to the features indicates that education is the only factor affecting the accountability of studied group. The results show that the greatest mean related to performance improvement of operational staff in conjunction with the implementation of the diversification in products. Diversification causes segmentation in the organization that it, in turn can have positive or negative effects. Diversification more than average level has a role in organizational innovation and organizational risk. In addition, there is a difference between staff's comments in terms of education.

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