

# Measuring brand differentiation and loyalty on brand equity

Mohadese Moradi Lalekaei<sup>1,\*</sup>, Elahe Azizzadeh Kalngestani<sup>2</sup>, Mohamamd Taghipour<sup>3</sup>

<sup>1</sup> Department of Management, Payame Noor University, Karaj 3149968143, Iran

<sup>2</sup> Islamic Azad University, Tehran 1477893780, Iran

<sup>3</sup> Sohrevardi Institute of Higher Education, Qazvin 4641334147, Iran

\* Corresponding author: Mohadeseh Moradi Lalekaei, Mohadesemoradi1369@gmail.com

---

## ARTICLE INFO

Received: 25 August 2023

Accepted: 28 September 2023

Available online: 10 November 2023

doi: 10.59400/feefs.v1i1.205

Copyright © 2023 Author(s).

Forum for Economic and Financial Studies is published by Academic Publishing Pte. Ltd. This article is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).  
<https://creativecommons.org/licenses/by/4.0/>

**ABSTRACT:** The brand is one of the most valuable assets of the brand value and is one of the most important and inimitable assets of any company. One of the effective factors in determining brand value is the image of the brand's country of origin. The purpose of the research is to examine the measurement of brand differentiation and loyalty on brand equity in the automotive industry. The dimensions of brand value in this research are brand differentiation and loyalty. The dimensions of brand value in this research are brand differentiation and loyalty. In the current research, the statistical population of all people who are exposed to the choice and use of cars in Rasht city and the sample size of this research also due to the unlimited population. Cochran's formula was used, and 282 samples were analyzed and statistically analyzed. The research results showed that brand differentiation has a positive effect on brand equity. Also, brand loyalty has a positive effect on brand equity.

**KEYWORDS:** image of the country of origin of the brand; brand differentiation; brand loyalty

---

## 1. Introduction

Today, the competition between different companies in the market has increased significantly. For every company, the brand is of particular importance. The brand is considered as the most valuable asset of any company. Brands are the children of industry and production. The artisans and producers first make the goods in the factory and then name this new child. They are embedded in people's minds. Brand, in its original and old meaning, is burning a mark on wood, leather, etc. It is said that at that time, it was a way to prove ownership and authenticity. The expansion of markets in the world has changed its shape and become a concept that has credibility and power. This power is the ability to influence the buyer's behavior. In recent years, the business environment in the world has witnessed many changes and transformations. Among these changes, the attitude of companies points from tangible assets to intangible assets; therefore, the valuation process of intangible assets is very important for companies. Due to the importance and prioritization of domestic production for the sake of patriotism, supporting national production in order to pay attention to the young and creative workforce in the production of Iranian automobiles, preventing the indiscriminate entry of foreign automobiles into the country, as well as preventing foreign exchange from leaving the country, due to the fact that Iranian automobiles create a favorable image in the Middle East. To be able to create value for the country from a political and economic point of view, the measurement of brand distinction and loyalty was investigated based on the special value of the brand.

## **2. The important and necessity of research**

The importance and necessity of conducting research are related to the importance of brand trademarks in the marketing strategies of companies and their role in attracting, maintaining, and supporting customers. Trademarks play an important strategic role in gaining competitive advantage and strategic management decisions for companies. It is effective for the domestic company to gain a larger share of the market. Unfortunately, despite more than 30 years of continuous work on the enrichment of brand knowledge in Europe and America, this concept has not received much attention in Iran. Adolescents and young adults will not be isolated from domestic products. Also, brands are at the heart of marketing and business strategy, and brand value or strong brands are one of the key factors for the success of a business. One of the most famous and important marketing concepts that is widely discussed by marketing researchers and experts today is the special value of the brand in making decisions and creating a competitive advantage for organizations and their customers.

## **3. Definitions of research terms and variables**

### **Brand**

It is a name, word, symbol, design, or a combination of them, whose purpose is to introduce the products or services of a seller or a group of sellers to customers and also distinguish their products from those of other competitors.

### **The mental image of the country of origin of the brand**

The mental image of the country of origin is an important external cue associated with branded products, especially when consumers have little familiarity with foreign products.

### **Brand equity**

Brand equity is a set of assets and liabilities associated with a brand, name, and sign that add or detract from the value provided by a product or service to a company or its customers.

### **Brand loyalty**

Loyalty to a brand is a relatively fanatical buying behavior reaction that a person finds towards the brand over time, and this behavior causes him to find a special tendency towards that brand in the process of decision-making and evaluation of the set of names he has in mind. This reaction is a function of the psychological and mental processes of the person. For products that are equal in all aspects, consumers often choose brands that they know, respect, and endorse.

### **Brand differentiation**

Brand differentiation means the unique identity of a brand in relation to other competitors and is a simple tool to increase brand recognition.

## **4. Research background**

Taghipour et al.<sup>[1]</sup> studied “Risk analysis in the management of urban construction projects from the perspective of the employer and the contractor.”

Mahboobi et al.<sup>[2]</sup> discussed “Assessing ergonomic risk factors using combined data envelopment analysis and conventional methods for an auto parts manufacturer”, occupational injuries are currently a major contributor to job loss around the world.

Taghipour et al.<sup>[3]</sup> studied “The impact of ICT on knowledge sharing obstacles in knowledge

management process (including case-study).”

Khalilpour et al.<sup>[4]</sup> studied “The impact of accountant’s ethical approaches on the disclosure quality of corporate social responsibility information an Islamic perspective in Iran.”

Mirzaie et al.<sup>[5]</sup> studied “The relationship between social bearing capacities with conflict as a result, in the perception of the visiting historical sites.”

Alamdar Khoodaki et al.<sup>[6]</sup> studied “Effect of integrated marketing communication on brand value with the role of agency’s reputation (including case study).”

Taghipouret et al.<sup>[7]</sup> studied “A survey of BPL technology and feasibility of its application in Iran (Gilan Province).”

Seddigh et al.<sup>[8]</sup> studied “Assessing the effect of FRP system on compressive and shear bending strength of concrete elements.”

Jalili et al.<sup>[9]</sup> studied “Comparative study of Khaje Rashid al-Din views on Rab-e Rashidi Islamic Utopia and Kevin Lynch ideas.”

Taghipour et al.<sup>[10]</sup> studied “Insurance performance evaluation using BSC-AHP combined technique.”

Rezvani Befrouie et al.<sup>[11]</sup> discussed “The design of high-rise building with ecological approach in Iran (Alborz Province).”

Taghipour et al.<sup>[12]</sup> studied “The identification and prioritization of effective indices on optimal implementation of customer relationship management using TOPSIS, AHP methods—Case study: Pasargad bank.”

Taghipour and Yazdi<sup>[13]</sup> studied “Seismic analysis (non-linear static analysis (pushover) and nonlinear dynamic) on cable-stayed bridge.”

Taghipour et al.<sup>[14]</sup> studied “Investigating the relationship between competitive strategies and corporates performance—Case study: Parsian Banks of Tehran).”

Taghipour and Moosavi<sup>[15]</sup> studied “A look at gas turbine vibration condition monitoring in region 3 of gas transmission operation.”

Rahmani et al.<sup>[16]</sup> studied “Providing health, safety and environmental management (HSE) program in metal mining industry (including case study).”

Taghipour and Vaezi<sup>[17]</sup> studied “Safe power outlet.”

Tarverdizadehet et al.<sup>[18]</sup> studied “Predicting students’ academic achievement based on emotional intelligence, personality and demographic characteristics, attitudes toward education and career prospects through the mediation of academic resilience.”

Azarian and Taghipour<sup>[19]</sup> studied “The impact of implementing inclusive quality management on organizational trust (case study: Education).”

Ghadamzan Jalali et al.<sup>[20]</sup> studied “Explain the relationship between intellectual capital, organizational learning and employee performance of Parsian Bank branches in Gilan province.”

Mohammadi et al.<sup>[21]</sup> studied “Investigating the role and impact of using ICT tools on evaluating the performance of service organizations.”

Abdi et al.<sup>[22]</sup> studied “Predicting entrepreneurial marketing through strategic planning (including case study).”

Arsalani et al.<sup>[23]</sup> studied “Investigating the effect of social media marketing activities on brand awareness.”

Khorasani and Taghipour<sup>[24]</sup> studied “The location of industrial complex using combined model of fuzzy multiple criteria decision making (including case study).”

Taghipour et al.<sup>[25]</sup> studied “Risk assessment and analysis of the state DAM construction projects using FMEA technique.”

Hoseinpour et al.<sup>[26]</sup> studied “The problem solving of bi-objective hybrid production with the possibility of production outsourcing through imperialist algorithm, NSGA-II, GAPSO hybrid algorithms.”

Taghipour and Ahmadi Sarchoghaei<sup>[27]</sup> studied “Evaluation of tourist attractions in Bourujerd County with emphasis on development of new markets by using Topsis model.”

Hashemi et al.<sup>[28]</sup> studied “The effect of personal factors on increasing the productivity of low-level employees in the General Welfare Department of Tehran Municipality.”

Safdarpour et al.<sup>[29]</sup> studied “The effect of government support on innovation ability (including a case study).”

Ganjali et al.<sup>[30]</sup> studied “Strategic analysis of household hazardous waste reduction.”

Taghipour et al.<sup>[31]</sup> studied “The impact of managerial factors on increasing the productivity of low-level employees (including case study).”

Ganjali et al.<sup>[32]</sup> studied “Investigating the relationship between environmental awareness and the level of education and occupation of people.”

Baghipour Sarami et al.<sup>[33]</sup> studied “Modeling of nurses’ shift work schedules according to ergonomics: A case study in Imam Sajjad (As) Hospital of Ramsar.”

Lalekaei et al.<sup>[34]</sup> studied “Measurement of the country of origin of the brand of branding and brand loyalty.”

Taghipour et al.<sup>[35]</sup> studied “Investigating the effect of intelligent ordnance on the level of learning/teaching (including case study).”

Taghipour et al.<sup>[36]</sup> studied “The study of the effect of smart schools on the level of learning-teaching in high school.”

Taghipour et al.<sup>[37]</sup> studied “The impact of motives from obtaining ISO 9001 certification on organization performance (including case study).”

Yaghoubi et al.<sup>[38]</sup> studied “Students learn and learn using the effects of smart schools.”

Taghipour et al.<sup>[39]</sup> studied “The impact of working capital management on the performance of firms listed in Tehran Stock Exchange (TSE).”

Habibi Machani et al.<sup>[40]</sup> studied “Designing a smart model for managing Iranian chain stores based on business intelligence (case study of proma chain store).”

## **5. Hypothesis**

The present research is aimed at measuring brand differentiation and loyalty to brand equity. This research was conducted to investigate the following hypothesis:

Hypothesis 1: Brand differentiation has a positive effect on brand equity.

Hypothesis 2: Brand loyalty has a positive effect on brand equity.

## 6. Society and research sample

The statistical population includes the people of Rasht city, and due to the unlimited population, Cochran's formula with an error level of 6% was used, and finally, 282 questionnaires were examined.

## 7. Research method

This research has a practical purpose and a descriptive-inferential research method in order to collect data first from library studies and then from distributed questionnaires. Due to the use of the present research questionnaire, which is a survey, the analysis and analysis of the data was done using SPS 16 and Laserl statistical software, which at the descriptive level of statistics such as mean, standard deviation, and kurtosis, but at the inferential level, Pearson's correlation coefficient tests have been used, and to determine the extent and strength of the influence of independent variables, structural equation modeling has been used based on Laserl software. And they were using Laserl software to analyze the data. It was discussed through structural equations.

### 7.1. Data collection method

In the current research, a survey questionnaire was used to collect field data. This questionnaire has a Likert scale, which includes two parts: general and specific questions. The first part of the four general questions is related to the individual's profile, which includes gender, age, employment status, and education level. Then a question that includes choosing a car brand and finally specialized questions are asked to measure the research variables.

The contribution of each component and its questions are as follows (see **Table 1**).

**Table 1.** The contribution of each component and its questions.

Row	Variable	Number of questionnaire questions	Number of questions
1	Image of the country of origin of the brand	1 to 5	5
2	Brand loyalty	6 to 8	4
3	Brand distinction	9 to 12	4

**Table 2** shows that 41.8% of the sample group are men and 58.2% of them are women.

**Table 2.** Frequency distribution and sexual percentage by gender.

Statistics gender	Frequency	Percentage
Man	118	41.8
Female	164	58.2
Total	282	100

**Table 3** shows that 43.3% of the sample was between 15 and 25 years, 9.2% between 26 and 35 years, 31.6% between 36 and 45 years, 12.1% between 46 and 55 years old and 3.9% over 56 years old.

**Table 3.** Frequency distribution and the percentage of statistical sample by age.

Age statistics	Frequency	Percentage
15–25	122	43.3
35–26	26	9.2
36–45	89	31.6
46–55	34	12.1
Above 56	11	3.9
Total	282	100

**Table 4** shows that 17.7% of the statistical sample had a diploma, 13.5% with associate degrees, 38.3% had a bachelor’s degree, 29.4% had a master’s degree and 1.1% had a doctorate.

**Table 4.** Statistical sample distribution in terms of study.

Degree statistics	Frequency	Percentage
Diploma	50	17.7
Associate degree	38	13.5
Bachelor	108	38.3
Masters	83	29.4
Ph.D.	3	1.1
Total	282	100

**Table 5** shows that 10.3% of the statistical sample were housewives, 20.9% were employees, 21.6% were retired, 24.8% were self-employed, and 22.3% were students.

**Table 5.** Statistical sample distributions in terms of employment status.

Employment status statistics	Frequency	Percentage
Housewife	29	10.3
Employee	59	20.9
Retired	61	21.6
Free	70	24.8
Student	63	22.3
Total	282	100

**Table 6** shows that 13.5% of the statistical sample were Iran Khodro, Saipa 16.3%, Mazda 19.5%, Benz 18.1%, Toyota 16.7%, and Peugeot 16.0%. **Table 7** shows the descriptive indices of the research variables.

**Table 6.** Distribution of statistical sample according to brand type.

Brand type statistics	Frequency	Percentage	Percentage	
Iran Khodro	Iranian	38	13.5	49.3
Saipa		46	16.3	
Mazda		55	19.5	
Benz	Foreign	51	18.1	50.7
Toyota		47	16.7	
Peugeot France		45	16.0	
Total		282	100	100

**Table 7.** Descriptive indices of the research variables.

Variable	Average	The standard deviation	Crookedness	Elongation
Image of the country of origin	4.29	0.44	-0.38	-0.28
Brand loyalty	3.25	0.62	-0.74	1.10
Brand distinction	27.3	74.0	-32.0	12.0

According to **Table 8**, the relationship of all variables is positive and significant at the 0.01 level.

**Table 8.** Correlation matrix of research variables.

Row	Variable	1	2	3	4	5	6
1	Image of the country of origin	1	-	-	-	-	-
2	Brand loyalty	0.21**	0.66**	1	-	-	-
3	Brand distinction	0.17**	0.51**	0.62**	1	-	-

\* $p < 0.05$ , \*\* $p > 0.01$ .

Before examining the research hypothesis, the table of values and its significance is presented in **Table 9**.

**Table 9.** *T* values and significance of each one.

The significance level	Not meaningful	0.05	0.01	0.001
<i>T</i>	Smaller 1.96	From 1.96 to 2.58	From 2.58 to 3.29	From 3.29 onwards

## 8. Research hypotheses analysis

### Hypothesis 1: Brand differentiation has a positive effect on brand equity.

The results of **Table 10** show that the direct effect of brand differentiation on brand value (0.37) is positive and significant according to the *t*-statistic of 7.54 rather than 3.29 at the significance level of 0.001.

**Table 10.** The effect of brand differentiation on brand equity.

Brand equity				
	Impact factor	<i>T</i>	The significance level	Test result
Brand differentiation	0.37	7.54	0.000	Confirmation

### Hypothesis 2: Brand loyalty has a positive effect on brand equity.

The results of **Table 11** show that the direct effect of brand loyalty on brand value (0.11) is positive and significant according to the *t*-statistic of 2.16 between 1.96 and 2.58 at the significance level of 0.05.

**Table 11.** The effect of brand loyalty on brand equity.

Brand equity				
	Impact factor	<i>T</i>	The significance level	Test result
Brand loyalty	0.11	2.16	0.04	Confirmation

The results of the research hypothesis test are in **Table 12**.



**Table 12.** The results of research hypotheses.

Hypothesis	Path coefficient	T	Test result
Brand differentiation has a positive effect on brand equity.	0.37	7.54	Confirmation
Brand loyalty has a positive effect on brand equity.	0.11	2.16	Confirmation

Hypothesis 1 of the research: the direct effect of brand differentiation on brand equity (0.37) is greater than 1.96 according to the *T*-statistic of 7.54. Therefore, the hypothesis of drug meaning is confirmed. And one unit increase in brand differentiation increases brand equity by 37%.

Hypothesis 2 of the research: the direct effect of brand loyalty on brand value (0.11) is greater than 1.96 according to the *T*-statistic of 2.16. Therefore, the hypothesis is significant and confirmed. One unit increase in brand loyalty increases the brand equity value by 11%.

Hypotheses 1 and 2 examine the dimensions of the special brand value of the brand value.

1) Manufacturers and sales agencies must establish long-term relationships with customers to increase customer loyalty. The quality of after-sales services, the presence of numerous and accessible dealerships, and the reduction in the car's sleep time when visiting dealerships are among the things that increase customer loyalty and, as a result, increase special value. Don't win.

2) By making their products unique, with credit, innovation, and high technology of their products, manufacturers can differentiate their products from other competitors through brand differentiation and attract more customers through differentiation.

3) Sales agents increase the awareness of the customers by means of brochures to increase the general awareness of the product about the product group about a specific product so that the customer remembers and recognizes the relevant brand after hearing about it.

## 9. Conclusion

The image that consumers have of a country is one of the factors that they consider in their purchasing decisions. The findings remind us of several points:

First, the image of the brand's country of origin has a positive effect on the dimensions of the brand's special value (distinction, loyalty). This indicates the importance of the brand's country of origin in the eyes of customers.

Second, the dimensions of brand equity (distinction, loyalty) have a positive effect on the formation of brand equity. Therefore, it is not surprising that a company, due to the lack of long-term relationships with customers and, as a result, the lack of customer loyalty towards the company's products, despite the good quality of the products, shares. Do not cover the market.

## 10. Suggestions for future research

1) The current research model should be tested for the scope of the research in societies with different cultures.

2) Test the model of this research on other brands and other industries and compare the results obtained with the results of this research.

3) If you want to research the brand, use other models.

4) Distribute the questionnaire of the current research model to another group that includes experts



in the automobile industry.

## Author contributions

All authors contribute to this research.

## Conflict of interest

The authors declare no conflict of interest.

## References

1. Taghipour M, Seraj F, Amir Hassani M, Farahani Kheirabad S. Risk analysis in the management of urban construction projects from the perspective of the employer and the contractor. *International Journal of Organizational Leadership* 2015; 4(4): 356–373. doi: 10.33844/ijol.2015.60284
2. Mahboobi M, Taghipour M, Ali Azadeh M. Assessing ergonomic risk factors using combined data envelopment analysis and conventional methods for an auto parts manufacturer. *Work* 2020; 67(1): 113–128. doi: 10.3233/WOR-203257
3. Taghipour M, Mahboobi M, Gharagozlou H. The impact of ICT on knowledge sharing obstacles in knowledge management process (including case-study). *Iranian Journal of Information Processing and Management* 2016; 31(4): 1049–1074. doi: 10.35050/JIPM010.2016.003
4. Khalilpour M, Kamyabi Y, Nabavi Chshmi SA, Taghipour M. The impact of accountant's ethical approaches on the disclosure quality of corporate social responsibility information an Islamic perspective in Iran. *National Academy of Managerial Staff of Culture and Arts Herald* 2018; 1: 1173–1181. doi: 10.32461/2226-3209.1.2018.178689
5. Mirzaie F, Nazari AA, Zargham Boroujeni H, Taghipour M. The relationship between social bearing capacities with conflict as a result, in the perception of the visiting historical sites. *Journal of Investment and Management* 2015; 4(6): 403–408.
6. Alamdar khoolaki M, Naami A, Taghipour M. Effect of integrated marketing communication on brand value with the role of agency's reputation (including case study) (Persian). *Journal of Process Engineering* 2019; 5(11): 30–44.
7. Taghipour M, Safari M, Bagheri H. A survey of BPL technology and feasibility of its application in Iran (Gilan Province). *Science Journal of Circuits, Systems and Signal Processing* 2015; 4(5): 30–40. doi: 10.11648/j.cssp.20150405.11
8. Seddigh MB, Beheshti SMA, Chegini H, Taghipour M. Assessing the effect of FRP system on compressive and shear bending strength of concrete elements. *International Journal of Innovative Research in Science, Engineering and Technology* 2015; 4(11): 11511–11524. doi: 10.15680/IJIRSET.2015.0411119
9. Jalili L, Ghafourian M, Toopal T, Taghipour M. Comparative study of Khaje Rashid al-Din views on Rab-e Rashidi Islamic Utopia and Kevin Lynch ideas. *International Journal of Archaeology* 2015; 3(5): 39–47. doi: 10.11648/j.ija.20150305.11
10. Taghipour M, Vosough A, Azizi D, Abdi J. Insurance performance evaluation using BSC-AHP combined technique. *Journal National Academy of Managerial Staff of Culture and Arts Herald* 2018; 1: 1158–1166. doi: 10.32461/2226-3209.1.2018.178687
11. Rezvani Befrouie A, Ghobadian V, Taghipour M. The design of high-rise building with ecological approach in Iran (Alborz Province). *International Journal of Modern Trends in Engineering and Research* 2015; 2(10): 455–464.
12. Taghipour D, Ganji F, Zolfagharijoo A, et al. The identification and prioritization of effective indices on optimal implementation of customer relationship management using TOPSIS, AHP methods—Case study: Pasargad bank. *Management* 2020; 3(4): 43–60. doi: 10.31058/j.mana.2020.34004
13. Taghipour M, Yazdi H. Seismic analysis (non-linear static analysis (pushover) and nonlinear dynamic) on cable-stayed bridge. *American Journal of Civil Engineering* 2015; 3(5): 129–139. doi: 10.11648/j.ajce.20150305.11
14. Taghipour M, Barzegar P, Mahboobi M, Mohammadi S. Investigating the relationship between competitive strategies and corporates performance—Case study: Parsian Banks of Tehran. *Management* 2020; 3(4): 13–28. doi: 10.31058/j.mana.2020.34002
15. Taghipour M, Moosavi SA. A look at gas turbine vibration condition monitoring in region 3 of gas transmission operation. *Journal of Environmental Science, Computer Science and Engineering & Technology* 2020; 9(3): 423–432. doi: 10.24214/jecet.C.9.3.42332

16. Rahamni M, Vaziri Shams S, Abedi V, Taghipour M. Providing health, safety and environmental management (HSE) program in metal mining industry (including case study). *Management* 2020; 4(3): 14–35. doi: 10.31058/j.mana.2021.43002
17. Taghipour M, Vaezi M. Safe power outlet. *Electrical Science & Engineering* 2020; 2(2): 5–10. doi: 10.30564/ese.v2i2.2464
18. Tarverdizadeh H, Taghipour M, Nezamivad S. Predicting students' academic achievement based on emotional intelligence, personality and demographic characteristics, attitudes toward education and career prospects through the mediation of academic resilience. *Scientific Journal of Education Research* 2021; 16(65): 171–186.
19. Azarian R, Taghipour M. The impact of implementing inclusive quality management on organizational trust (case study: Education). *Journal of Multidisciplinary Engineering Science Studies* 2020; 6(7): 3376–3383.
20. Ghadamzan Jalali A, Habibi Machiani H, Taghipour M, Moshtaghi S. Explain the relationship between intellectual capital, organizational learning and employee performance of Parsian Bank branches in Guilan province. *Educational Administration Research* 2020; 11(44): 87–102.
21. Mohammadi S, Taghipour M, Mahboobi M. Investigating the role and impact of using ICT tools on evaluating the performance of service organizations (Persian). *Iranian Journal of Information Processing and Management* 2021; 37(1): 1–26. doi: 10.52547/JIPM.37.1.1
22. Abdi J, Safariyan S, Usefi R, Taghipour M. Predicting entrepreneurial marketing through strategic planning (including case study) (Persian). *Educational Administration Research* 2019; 10(39): 127–146.
23. Arsalani M, Esmailkhoo H, Taghipour D. Investigating the effect of social media marketing activities on brand awareness. *Management* 2021; 4(2): 18–31. doi: 10.31058/j.mana.2021.42002
24. Khorasani Z, Taghipour M. The location of industrial complex using combined model of fuzzy multiple criteria decision making (including case study). *International Journal of Innovation Scientific Research and Review* 2020; 2(7): 268–280.
25. Taghipour M, Sharifzadeh S, Seraj F. Risk assessment and analysis of the state DAM construction projects using FMEA technique. *Trends in Life Sciences: An International Peer-Reviewed Journal* 2015; 4(2).
26. Hoseinpour Z, Taghipour M, Hassan Beigi J, Mahboobi M. The problem solving of bi-objective hybrid production with the possibility of production outsourcing through Imperialist Algorithm, NSGA-II, GAPSO hybrid algorithms. *Turkish Journal of Computer and Mathematics Education* 2021; 12(13): 8090–8111.
27. Taghipour M, Ahmadi Sarchoghaei J. Evaluation of tourist attractions in Bourujerd County with emphasis on development of new markets by using Topsis model. *Science Journal of Business and Management* 2015; 3(5): 175–189. doi: 10.11648/j.sjbm.20150305.16
28. Hashemi N, Ohadi Digesaraei D, Taghipour M. The effect of personal factors on increasing the productivity of low-level employees in the General Welfare Department of Tehran Municipality. *Journal of Multidisciplinary Engineering Science and Research* 2023; 2(6): 238–241.
29. Safdarpour S, Pourkhosravani P, Taghipour M. The effect of government support on innovation ability (including a case study). *Journal of Multidisciplinary Engineering Science and Research* 2023; 2(6): 233–237.
30. Ganjali R, Negaresh Z, Taghipour M. Strategic analysis of household hazardous waste reduction. *International Journal of Educational Foundations and Management* 2023; 11(4): 1–10.
31. Taghipour M, Safdarpour S, Taherian P, et al. The impact of managerial factors on increasing the productivity of low-level employees (including case study). *Management* 2022; 5(2): 1–9. doi: 10.31058/j.mana.2022.52001
32. Ganjali R, Ohadi Digesaraei D, Taghipour M. Investigating the relationship between environmental awareness and the level of education and occupation of people. *International Journal of Educational Foundations and Management* 2023; 11(4): 1–5.
33. Baghipour Sarami F, Bozorgiamiri A, Mououdi MA, Taghipour M. Modeling of nurses' shift work schedules according to ergonomics: A case study in Imam Sajjad (AS) Hospital of Ramsar (Persian). *Journal of Ergonomics* 2016; 4(1): 1–12. doi: 10.20286/joe-04011
34. Lalekaei MM, Taghipour M, Nazari M, Karimi M. Measurement of the country of origin of the brand of branding and brand loyalty. *Management* 2022; 5(1): 40–47. doi: 10.31058/j.mana.2022.51006
35. Taghipour M, Jafari S, Rajabzadeh Mirak Abad S, Mahboobi M. Investigating the effect of intelligent ordnance on the level of learning/teaching (including case study). In: Proceedings of the 4th Comprehensive and National Conference of Resistive Economics; 17 November 2018; Babolsar, Iran.
36. Taghipour M, Daneshfard K, Sedaghatmanesh A, Soleimani Delarestaghi S. The study of the effect of smart schools on the level of learning-teaching in high school. In: Proceedings of the 5th National Conference on Applied Economics & Management; 13 July 2018; Babolsar, Iran.
37. Taghipour M, Karimi M, Shirin M, Nikseresht H. The impact of motives from obtaining ISO 9001 certification on organization performance (including case study). In: Proceedings of the 5th National Conference Applied Economics & Management; 13 July 2018; Babolsar, Iran.

38. Yaghoubi SJ, Sedaghatmanesh A, Taghipour M, et al. Students learn and learn using the effects of smart schools. *International Journal of Management and Sustainability* 2018; 1: 36–50.
39. Taghipour M, Habibi Machiani H, Amin M. The impact of working capital management on the performance of firms listed in Tehran Stock Exchange (TSE). *Journal of Multidisciplinary Engineering Science and Technology* 2020; 7(6): 12146–12154.
40. Habibi Machani A, TalariYF, Savarrakhsh M, Taghipour M. Designing a smart model for managing Iranian chain stores based on business intelligence (case study of proma chain store). *Management* 2021; 4(1): 1–18. doi: 10.31058/j.mana.2021.41001