

Exploring effective factors on privatization, firm performance and export development: Evidence from steel industry

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ABSTRACT

Privatization means establishing a new system based on the market mechanisms and consequently making a change, alteration in different aspects of economy and is a process in which the government can examine the possibility of transferring the duties and facilities to the private sector on any level and if necessary, exerts such transfer. On the other hand, exports in industry sector can be a noticeable point for the economic growth of any country. Enhancing the exports of the steel industry of the country can have a principal role in the economic pursuit of the country's non-oil products. Such an enhancement brings about a positive effect in the efficiency of the stocks within the financial markets by developing the steel industry. Researchers of this field claim that privatization in the steel industry results in the further development of the steel stock market and exports. This paper presents a comprehensive survey on factors influencing on privatization of the firms in steel industry. The study has designed a questionnaire in Likert scale and distributed it among some experts who worked for Mobarakeh steel producer in Iran. Using principle component analysis, the survey has concluded that export activities were influenced the most by six major factors including creativity, technological limitation, opportunities and challenges, being up to date, customer orientation and financial sanction. Moreover, firm performance was influenced by two major factors of stakeholder's satisfaction and organizational culture. Finally, two factors of rationalism and market orientation influenced the most on privatization.

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1. Introduction

Privatization is a process in which the government examines the possibility of transferring the duties and facilities to the private sector on any level and if needed exerts such transfer (Seyedaliakbar et al., 2016). In fact, privatization is a trend for improving the function of the economic activities by the method of increasing the role of the market factors. The privatization policy is exerted in different countries in accordance with the economic programs and the general strategies of the respective country and since the economic plans of the countries are different and the strategies are also various, privatization is also preferred due to several reasons. The main objective of executing the privatization

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policy is yielding the economic activities to the private sector, creating a competitive organization for the desired activities with the possibility of utilizing motivation process and controlling the private sector in the economy which would be achievable through fulfilling the two issues of enhancing the efficiency and improving the sources allocation. One of the critical and sensitive aspects of the privatization issue is improving the economic status of any society. One of the ways to accomplish such objective is to pay more attention on the issue of steel exporting and the efficiency of stocks in the financial markets and the strategies to enhance it. Privatizing the governmental agencies will lead to the active exporting by means of improving optimization and the positive impact on the stocks efficiency and reduces the financial and credit limitations and from the other side increases the number of competitive exports, improves export decisions and augments the agency size.

Romero-Martínez (2010) performed an investigation and reported whether state-owned enterprises (SOEs) could increase their levels of corporate entrepreneurship after privatization. They applied agency theory to find out why SOEs yield little entrepreneurial behavior and how privatization may alter this circumstance by changing firms' systems of controls and incentives. They also applied a sample of Spanish companies for its empirical research and reported that corporate entrepreneurship could increase after privatization when companies were in highly competitive industries, either because competition was bigger after privatization or because the firm was already in a highly competitive industry. In other words, corporate entrepreneurship in privatized companies appeared to be favored by two factors, a change of ownership and competition.

Todo et al. (2014) examined whether privatizing Chinese state-owned enterprises could possibly increase exports and determine the factors generating such an effect based on firm-level data for the Chinese manufacturing sector from 2000 to 2007. They reported that privatization positively influenced on a firm's productivity, size, and decision to export, whereas they also determined that it negatively influenced on the level of a firm's long-term debt. They also determined that Chinese companies were able to export more when the productivity level, firm size, or the level of long-term debt improved. They concluded that privatization positively influenced on the likelihood that an organization would export by improving productivity and increasing firm size, whereas it negatively influenced on such a likelihood by reducing the long-term debt level of the companies. Nevertheless, a quantitative analysis disclosed that the impacts of privatization that happened through these three channels were only slight. Therefore, they concluded that the positive effect of privatization on the likelihood of exporting was mainly the result of unobservable factors, which were most likely associated with changes in attitude about the profits and risks related to privatization.

Horwitz and Currie (2007) investigated the relative failure of reform in South Africa in the context of internal South African politics. Wang and Chen (2011) investigated the effect of foreign penetration on privatization in a mixed oligopolistic market and reported that government should increase the degree of privatization along with increasing proportion of domestic ownership of multinational companies. In addition, they reported that an increase in domestic ownership of multinational companies could also increase all domestic private firms' profit and social welfare, while it could either increase/decrease public organization's profit. Ślusarczyk et al. (2013) reported that the main factors which caused steel market consolidation include mass privatization and restructuring of enterprises, liberalization of the regulations conducive to market competition, investment requires in steelworks and trends to generate free markets in world market. Todshki and Ranjbaraki (2016) performed a survey on the effects of Iran's macroeconomics variables including Gross National Product, Global Oil price, Population and domestic steel production on steel export and import over the period 1975-2011. They found positive and significant relationship between crude steel export and all mentioned variables. SeyedAliAkbar and Zaripour (2016) presented an empirical investigation to determine essential factors on development of export in Iran and determined five important factors including human resources development, productivity management, marketing management, creating competitive environment and building necessary infrastructures.

2. The proposed study

This paper presents a comprehensive survey on factors influencing on privatization of the firms in steel industry. The study has designed a questionnaire in Likert scale and distributed it among some experts who worked for Mobarakeh steel producer in Iran. The current research is a practical and applicable type of research. It is also descriptive and inferential in terms of collecting data, which describes the features of the sample and generalizes these features to the statistical population. In this study, the descriptive research has been used in survey type, because the means of collecting data (questionnaires) has been distributed and then collected in the samples of statistical population. The methods of collecting data in this research is of library and field operation kind. Thus, it can be generally stated that this study is a practical descriptive survey research of correlation type which has been analyzed by using exploratory function analysis and by the helping of SPSS application. Due to the fact that this is a case study and related to Isfahan Sepahan Mobarake steel industries, the statistical population of this study is of accessible type in sampling method including the present managers, experts and employees and the volume of the samples for explorative function analysis $5 \times q < X < 15 \times q$ and “q” stands for the number of questions in questionnaires. At first, the effective variables of the structures in the first step of Delfi were identified by the experts and then the effective variables were added from the sources including articles and the books after being collected. The common items of sources and elites were omitted and in the second step of Delfi elites, 75 effective variables of structures were ranked between the scales of 1 and 10 and 80 percent of the variables with high ranking were kept and the others were deleted and ultimately, “q” as the number of questions in questionnaires was designed equal to 60 effective variables in Likert scale between 1 and 5 and its content validity was confirmed the experts and the thesis supervisors and thesis advisors. The sample volume $n=435$ is considered between the minimum of 300 and maximum of 900. The questionnaires are distributed among the experts and managers and employees and in the final step, the questionnaires were collected and the entering of information and reforming the lost data by means of the median method were carried out (Draycott, & Kline, 1994). The questionnaire of this survey was designed in Likert scale and consist of three parts of factors influencing on exports with 31 questions, firm performance with 18 questions and privatization with 10 questions. Cronbach alphas were determined as 83, 88 and 79 percent for these items, respectively.

2.1. Personal characteristics of the participants

In our study, 300 man and 135 women participated in our survey who were all experts of Mobarakeh Steel industry. This firms is the biggest steel producer in Middle East and Northern Africa and it is the quality producer of more than 50% of Iran’s steel in all major markets including automotive, construction, household appliances, and packaging. Mobarakeh Steel operates in 7 industrial complexes and more than 20,000 people in various parts of Iran are working for this firm.

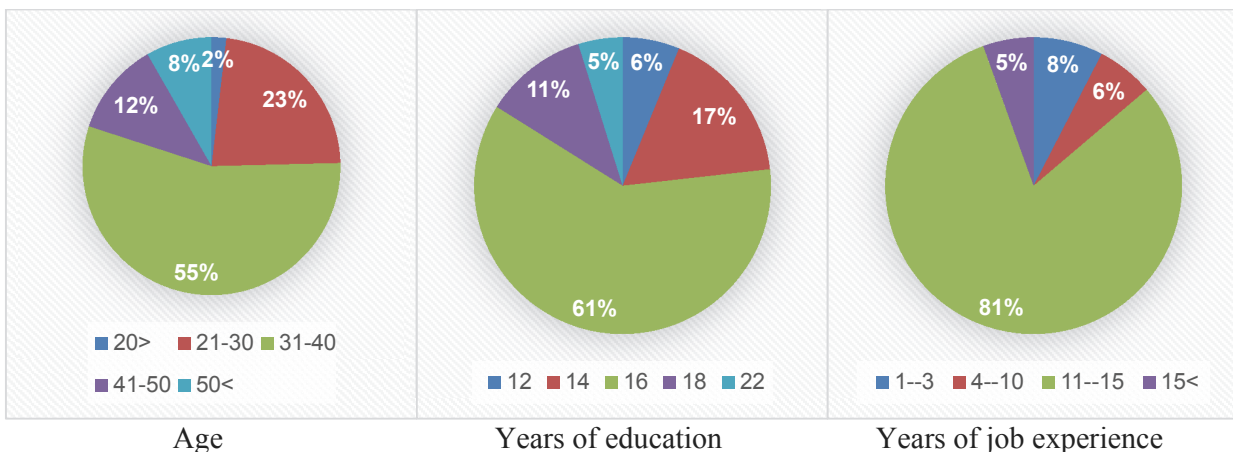


Fig. 1. Personal characteristics of the participants

As we can observe from the results of Fig. 1, 75 percent of the respondents were middle-aged people, 92% had some university educations and 86% had well over 10 years of job experience. Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test for three parts of the survey, namely, export, efficiency stocks and privatization are summarized on Table 1 as follows,

Table 1

The summary of Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test

Test	Statistics	Export	Efficiency stocks	Privatization
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.730	.870	.747
Bartlett's Test of Sphericity	Approx. Chi-Square	10516.950	2827.158	3877.743
	Df	465	66	55
	Sig.	.000	.000	.000

The proposed study of this paper uses principle component analysis (PCA) to extract the factors influencing on development of export, firm performance and privatization. Table 2, Table 3 and Table 4 demonstrate total variance explained. Moreover, Fig. 2 shows the results of Scree plot.

Table 2

The summary of PCA for factors influencing on exports

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Factor 1	7.814	25.206	25.206	7.814	25.206	25.206	4.343	14.010	14.010
Factor 2	4.087	13.183	38.390	4.087	13.183	38.390	3.646	11.760	25.770
Factor 3	2.607	8.409	46.799	2.607	8.409	46.799	2.813	9.073	34.844
Factor 4	2.145	6.921	53.720	2.145	6.921	53.720	2.540	8.193	43.037
Factor 5	1.784	5.754	59.474	1.784	5.754	59.474	2.465	7.952	50.988
Factor 6	1.392	4.491	63.965	1.392	4.491	63.965	2.231	7.196	58.184
Factor 7	1.199	3.869	67.834	1.199	3.869	67.834	1.779	5.740	63.924
Factor 8	1.096	3.535	71.369	1.096	3.535	71.369	1.718	5.543	69.467
Factor 9	1.014	3.271	74.640	1.014	3.271	74.640	1.604	5.173	74.640

Table 3

The summary of PCA for factors influencing on firm performance

Component	Total			% of Variance			Cumulative %		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Factor 1	5.958	49.647	49.647	5.958	49.647	49.647	4.217	35.141	35.141
Factor 2	1.253	10.438	60.084	1.253	10.438	60.084	2.993	24.943	60.084

Table 4

The summary of PCA for factors influencing on privatization

Component	Total			% of Variance			Cumulative %		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Factor 1	4.963	55.146	55.146	4.963	55.146	55.146	4.349	48.320	48.320
Factor 2	1.904	21.157	76.303	1.904	21.157	76.303	2.518	27.983	76.303

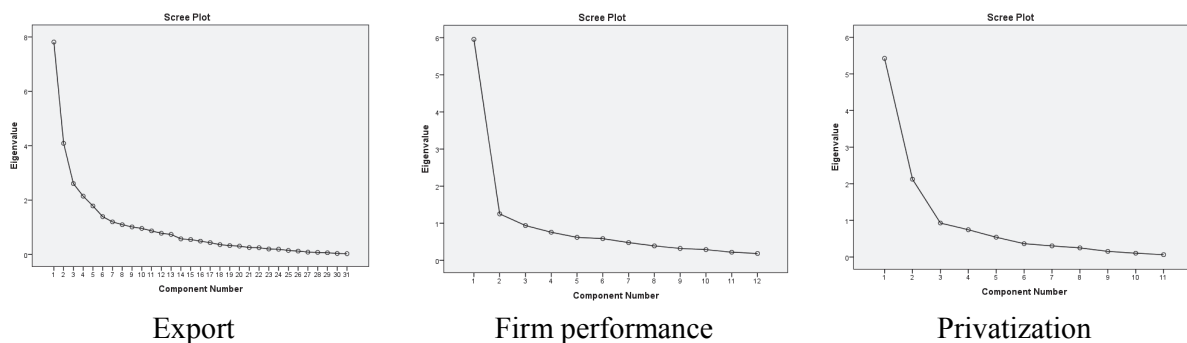


Fig. 2. The results of Scree plot for three parts of the survey

According to the results of Table 2 and Fig. 2, there are nine factors representing 75% of the changes on expert activities. Moreover, for there are two factors representing 60% and 76% of the changes on firm performance and privatization, respectively. Table 5 shows the results of PCA after rotation happens.

Table 5
The results of PCA after Varimax rotation for export activities

Variables	Component								
	1	2	3	4	5	6	7	8	9
Using the credit sale insurance	.907								
Using the transport insurance	.870								
Obtaining the ISO international license	.800								
Expending the research and development department	.622			.347					-.390
Innovation and invention	.563	-.381		.460					
Restricting the number of suppliers a result of sanctions		.841							
Transport insurance sanctions		.792							
Accepting to have connection with suppliers by means of less credit or using different brands		.623			.342				
Technology deploying new technologies sanctions	-.392	.531							.347
Technology purchasing new technologies sanctions		.518		.370					.414
Information about the technology of exporting		.499	.331	.402		.432			
Developing and updating the company's website	.409	.450			.415		.356		
Effect of the government's exporting subsidies in the development and growth of export			.715						
Commitment to management in managerial ranks			.613	.410					
Trading sanctions (trading commodities and services)			.599				.433		
Establishing the sales representation offices in the product consuming countries			.592				.426		
Financial insurance activities sanctions	.375		.560			.392	.339		
Exporting consortium	.340	-.372	.440	.342	.405				
Information about the economic events of exporting				.864					
Enhancing technology				.693					.412
Information about the level of connections and the customer's requirement	.371				.756				
Information in the direction of understanding the efficient parameters in the exporting					.712				
Advertising in the scientific and high profile international magazine		-.416	.347		.562				
Financial activities of banks sanctions						.792			
Financial currency transfer activities sanctions						.622			
Appropriate packing	.365			.419		.541			
Currency fluctuating							-.705		
Exploiting the vacant capacity of production in steel industry in order to increasing the production rate							-.595		
Advertising in the scientific and high profile international magazine								.779	
Holding international seminars inviting the chief consumers of steel								.729	
Promoting the vocational education of the staff									-.789

In addition, Table 6 presents the results of PCA after rotation for firm performance.

Table 6
The results of PCA after Varimax rotation for firm performance

Variables	Factors	
	1	2
Establishing and implementing the rewarding system	.817	
Rate of the stocks' realizably	.793	
Stability	.731	
Increasing the effectiveness coefficient of raw equipment	.688	
Increasing the efficiency rate of human resource	.684	.425
The effect of inflation rate	.643	
Increasing the efficiency rate of raw materials	.598	
Increasing the effectiveness coefficient of human forces	.558	.533
Organizational culture – social responsibility		.841
Organizational culture – competitiveness		.795
Organizational culture – protectionism	.487	.653

Finally, Table 7 shows the results of PCA for factors influencing on privatization. As we can observe from the results of Fig. 3, export activities consists of six major factors including creativity, technological limitation, opportunities and challenges, being up to date, customer orientation and financial sanction. Stakeholder satisfaction and organizational culture are believed to be the most important factors influencing on firm performance (stock efficiency) and finally, rationalism and market orientation are two important factors influencing on privatization.

Table 7
The results of PCA after Varimax rotation for privatization

Variables	Factors	
	1	2
Establishing and implementing the rewarding system	.817	
Rate of the stocks' realizably	.793	
Stability	.731	
Increasing the effectiveness coefficient of raw equipment	.688	
Increasing the efficiency rate of human resource	.684	.425
The effect of inflation rate	.643	
Increasing the efficiency rate of raw materials	.598	
Increasing the effectiveness coefficient of human forces	.558	.533
Organizational culture – social responsibility		.841
Organizational culture – competitiveness		.795
Organizational culture – protectionism	.487	.653

In summary, we present details of our findings in Fig. 3 as follows,

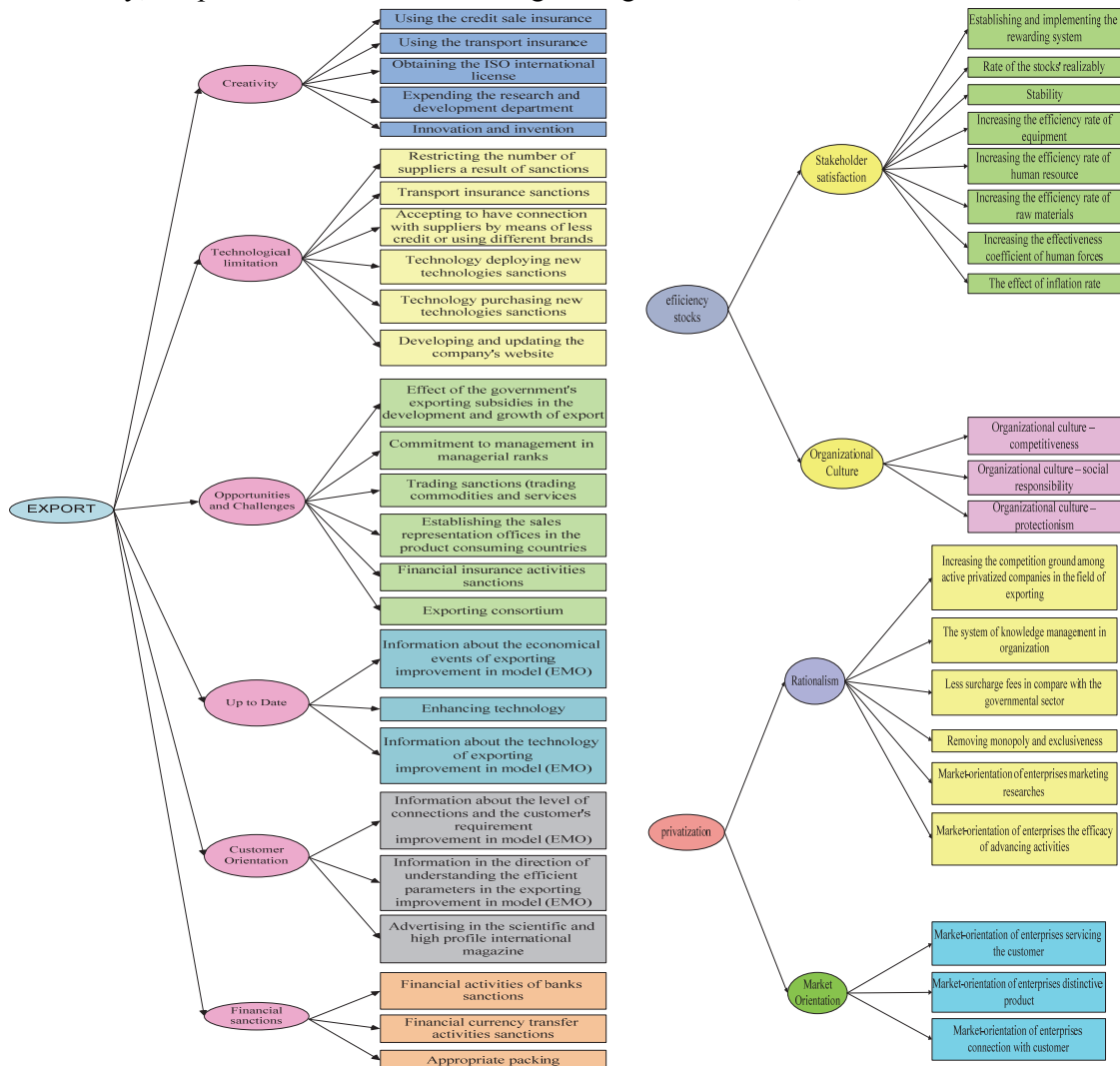


Fig. 3. The summary of factors influencing on exports, firm performance and privatization

In terms of the factors influencing on export activities, creativity is the first factor. Table 8 shows the ranking of the factors on creativity.

Table 8

The summary of the creativity factors influencing on creativity

Variables	Factors load	Rank of factors
Using the credit sales insurance	.907	1
Using the transportation insurance	.870	2
Obtaining the ISO international license	.800	3
Expending the research and development department	.622	4
Innovation and invention	.563	5

Cronbach alpha = 0.881

According to the results of Table 8, credit sales insurance is the most important factor followed by transportation insurance, ISO certificate, having a good research and development department and innovation. Technological limitation is the second factor influencing on export activities with six factors summarized in Table 9 as follows,

Table 9

The summary of the technological limitation factors influencing on creativity

Variables	Factors load	Rank of factors
Restricting the number of suppliers as a result of sanctions	.841	1
Transportation insurance sanctions	.792	2
Accepting to have connection with suppliers by means of less credit or using different brands	.623	3
Technology deploying new technologies sanctions	.531	4
Technology purchasing new technologies sanctions	.518	5
Developing and updating the company's website	.450	6

Cronbach alpha = 0.781

The results of Table 9, we can observe that limitation on the number of suppliers is the first important technological factor followed by sanction posed to Iran's transportation insurance, etc. Opportunities and challenges are the other factors influencing on export activities with six sub-factors summarized in Table 10 as follows,

Table 10

The summary of the opportunities/challenges factors influencing on creativity

Variables	Factors load	Rank of factors
Effect of the government's exporting subsidies in the development and growth of export	.715	1
Commitment to management in managerial ranks	.613	2
Trading sanctions (trading commodities and services)	.599	3
Establishing the sales representation offices in the product consuming countries	.592	4
Financial insurance activities sanctions	.560	5
Exporting consortium	.440	6

Cronbach alpha = 0.816

According to Table 10, subsidies are the most important factors followed by management commitment, trading sanction. Having a good sales representative in destination countries, sanction posed on export activities and exporting consortium. Having a reliable and good information on export activities is the other factor with three sub-factors summarized in Table 11 as follows,

Table 11

The summary of having update factors influencing on creativity

Variables	Factors load	Rank of factors
Information about the economic events of exporting	.864	1
Enhancing technology	.693	2
Information about the technology of exporting (improvement in model EM)	.499	3

Cronbach alpha = 0.729

The results of Table 11 indicate that having good information about the economic events of exporting is the most important factor followed by enhancing technological development and having reliable

information on technology for exports. Customer orientation is the fifth item in our survey with three components indicated in Table 12 as follows,

Table 12

The summary of customer orientation factors influencing on creativity

Variables	Factors load	Rank
Information about the level of connections and the customer's requirement	.756	1
Information in the direction of understanding the efficient parameters in the exporting	.712	2
Advertising in the scientific and high profile international magazine	.562	3

Cronbach alpha = 0.775

The results of Table 12 have indicated that Information about the level of connections and the customer's requirement is the most important factor followed by Information in the direction of understanding the efficient parameters in the exporting and advertising in the scientific and high profile international magazine. Finally, financial activities are the last important factors influencing on export activities with three factors summarized in Table 13 as follows,

Table 13

The summary of customer orientation factors influencing on creativity

Variables	Factors load	Rank of factors
Financial activities of banks sanctions	.792	1
Financial currency transfer activities sanctions	.622	2
Appropriate packing	.541	3

Cronbach alpha = 0.633

Stakeholder satisfaction is the first factor influencing on firm performance with eight sub-factors listed in Table 14 as follows,

Table 14

The summary of stakeholder satisfaction factors influencing on firm performance

Variables	Factors load	Rank of factors
Establishing and implementing the rewarding system	.817	1
Rate of the stocks' realizably	.793	2
Stability	.731	3
Increasing the effectiveness coefficient of raw equipment	.688	4
Increasing the efficiency rate of human resource	.684	5
The effect of inflation rate	.643	6
Increasing the efficiency rate of raw materials	.598	7
Increasing the effectiveness coefficient of human forces	.558	8

Cronbach alpha = 0.895

As we can observe from Table 14, rewarding system is the most important factor, which could please stakeholders. Organizational culture is another factor influencing on stakeholder satisfaction with three factors listed on Table 15 as follows,

Table 15

The summary of organizational culture factors influencing on firm performance

Variables	Factors load	Rank of factors
Organizational culture – social responsibility	.841	1
Organizational culture – competitiveness	.795	2
Organizational culture – protectionism	.653	3

Cronbach alpha = 0.819

According to the results of Table 15, social responsibility is the first important factor influencing the most on firm performance followed by being competitive and protectionism.

Finally, two factors of rationalism and market orientation influence on privatization. Rationalism consists of six sub-components listed in Table 16 as follows,

Table 16

The summary of rationalism factors influencing on privatization

Variables	Factors load	Rank of factors
Less surcharge fees in compare with the governmental sector	.886	1
Removing monopoly and exclusiveness	.879	2
The system of knowledge management in organization	.859	3
Increasing the competition ground among active privatized companies in the field of exporting	.828	4
Market-orientation of enterprises the efficacy of advancing activities	.815	5
Market-orientation of enterprises distribution network	.782	6

Cronbach alpha = 0.934

According to the results of Table 16, surcharge fee plays the most important role on privatization followed by creation of competition and getting rid of monopoly and knowledge management. Also, in terms of market orientation, three factors influence the most on privatization, which are listed in Table 17 as follows,

Table 16

The summary of market orientation factors influencing the privatization

Variables	Factors load	Rank of factors
Market-orientation of enterprises connection with customer	.907	1
Market-orientation of enterprises distinctive product	.882	2
Market-orientation of enterprises servicing the customer	.792	3

Cronbach alpha = 0.934

As seen in Table 16, having a good communication with customer plays the most on the privatization followed by offering distinctive product and enhancing good quality service for customer.

3. Conclusion

In this paper, we have presented a comprehensive survey on factors influencing on privatization of the firms in steel industry. The study has designed a questionnaire in Likert scale and distributed it among some experts who worked for Mobarakeh steel producer. Using principle component analysis, the survey has concluded that export activities were influenced the most by six major factors including creativity, technological limitation, opportunities and challenges, being up to date, customer orientation and financial sanction. Moreover, firm performance was influenced by two major factors of stakeholder's satisfaction and organizational culture. Finally, two factors of rationalism and market orientation influenced on privatization. The results of this survey are somehow consistent with other findings in the literature in terms of privatization (Fiorentino et al., 2009; Sheinbaum et al., 2010; Naguib, 2012).

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