Analisar os Fatores Determinantes da Eficiência do Gestor na Geração de Fluxo de Caixa Operacional

Analyze the Determining Factors of Manager Efficiency in the Generation of Operating Cash Flow

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RESUMO

De acordo com os objetivos do relatório financeiro, em particular o objetivo de administração, o objetivo deste estudo é avaliar a eficiência do gestor das empresas listadas na Bolsa de Valores de Teerã na geração de fluxo de caixa operacional com base na análise envoltória de dados (DEA) durante o período de 2013 a 2019. Nesta pesquisa, para teste de hipóteses de pesquisa, foi empregada a regressão multivariada. Os resultados da pesquisa indicaram que o nível de eficiência dos gestores na geração de caixa operacional é muito baixo e com tendência decrescente. Além disso, as evidências demonstraram que fatores como lucratividade, conhecimento financeiro do CEO e percentual de ações detidas por acionistas institucionais não têm correlação significativa com a eficiência dos gestores. No entanto, o tamanho da empresa, a alavancagem financeira, a independência do conselho e a competitividade têm correlação significativa com a eficiência dos gestores na geração de caixa operacional. Já o tamanho da empresa apresenta correlação negativa com a eficiência dos gestores e correlação positiva com os demais itens.

Palavras-chave: Eficiência dos gerentes; Fluxo de Caixa Operacional (OCF); Supervisão; Análise de Envoltória de Dados (DEA).

ABSTRACT

According to the objectives of financial reporting, particularly stewardship objective, the aim of this study is to assess the manager's efficiency of listed firms in the Tehran Stock Exchange in the generation of operating cash flow on the basis of data envelopment analysis (DEA) during the period 2013 to 2019. In this survey, for research hypotheses testing, multivariate regression was employed. The research results indicated that the level of manager efficiency in the generation of operating cash flow is very low and has a decreasing trend. Also, the evidence demonstrated that factors including profitability, CEO's financial knowledge, and percentage of shares owned by institutional shareholders have no significant correlation with the managers' efficiency. Nevertheless, company size, financial leverage, board independence, and competitiveness have a significant correlation with the managers' efficiency in the generation of operating cash flow. Meanwhile, company size has a negative correlation with managers' efficiency and a positive correlation with the remaining items.

Keywords: Managers Efficiency; Operating Cash Flow (OCF); Stewardship; Data Envelopment Analysis (DEA).

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1 INTRODUCTION

Management capability is regarded as one of the company's intangible assets. Accounting and finance literatures consider the manager's capability as his/her efficiency in the optimal conversion of company resources into revenue. Investigations conducted in management science confirm that the manager's performance is dependent on a variety of factors such as demographic characteristics, inter-organizational and extra-organizational factors (Demerjian et al., 2013).

One of the most conventional techniques to evaluate the manager's efficiency is data envelopment analysis (DEA). DEA is an efficient technique for the measurement and assessment of the efficiency of decision-making units (DMUs), which is used to evaluate and specify the relative efficiency of management performance. The studies carried out in this domain have explored the managers' efficiency in employing company resources to generate profits and sales, and stock market value (Grmanová & Strunz, 2017; Gu & Yue, 2011). Assessing the efficiency of managers in the generation of operating cash flow has not yet been examined in prior research. Cash flows resulting from operating activities are among the constituents of the company's profit and a critical indicator for evaluating the continuity of the company's activities. Moreover, taking into account that operating cash flow is less exposed to manipulation in comparison with profits, thus financial analysts regard OCF as an essential element in the assessment of the company's profitability (Habib, 2010).

Compared to accruals, operating cash flow has more potential to anticipate future cash flows. Operating cash flows enjoy the more remarkable ability for the prediction of financial health relative to other cash flows. (Nouri et al., 2020). We select data envelopment analysis to assess managers' efficiency, because this technique is a robust and flexible approach for measuring financial performance, for it takes into account numerous variables as input and output variables for evaluating efficiency at the same time. Also, DEA could offer more information compared to conventional analysis techniques (e.g., financial ratios). In this approach, the performance of each company is compared with other companies in the same industry in terms of efficiency. As the efficiency of any company is compared with the mean or median of total sample research companies in conventional analyses, we believe this is a suitable comparison. Thus, DEA could overcome the complications due to lacking a common measurement scale (Shabani and Farzipour, 2015).

With respect to the significance of operating cash flow in accounting and financial management, as well as because of the lack of enough studies to assess the managers' efficiency in the generation of operating cash flow, and with regard to the usefulness of DEA in the analysis of financial performance, this motivation arose in the authors to write the current paper. The authors of this article believe that the assessment of the manager efficiency of companies listed on the stock exchange and determination of the factors influencing it could provide helpful information to investors and financial analysts. Hence, the question of this study is what factors are affecting the manager efficiency of companies listed on the stock exchange in the generation of operating cash flow? This investigation also aimed to introduce the data envelopment analysis (DEA) technique to measure and evaluate the efficiency of managers in the generation of operating cash flow.

The contribution of this study could be enumerated as follows: First, the outcome of this study can result in the extension of the theoretical bases of research on operating cash flow in accounting and financial management. Second, accounting and financial management researchers become acquainted with data envelopment analysis techniques, which could lead to novel viewpoints concerning the application of DEA in the analysis of manager performance. Third, the current study results could offer a new approach to evaluate the performance of managers for financial analysts and investors in line with the concept of the stewardship function. Subsequently, theoretical foundations, methodology, results, and conclusions will be provided.

2 THEORETICAL FOUNDATIONS AND RESEARCH LITERATURE

2.1. Operating Cash Flow and Manager's Stewardship Function

Steward Managers in a business unit are the owners of that business unit. They are responsible for establishing a balance between their interests and owners. In other words, business unit managers must not earn interests higher than the interests of owners on the basis of this theory. Stewardship theory attempts to

encourage managers to work in line with the business unit's objectives and establish the task of accountability in the association between manager and owner (Davis et al., 1997). In the financial reporting objectives of the International Financial Reporting Standards (IFRS) Board, the presentation of useful information on the assessment of the manager's stewardship function has been insisted on (Pleger, 2020).

The Board emphasizes that information on cash flow to evaluate the business unit's capability in generating future net cash flows to be provided to users. In this respect, the amount of cash flow resulting from operations is the central metric in the evaluation of the fact that to what extent has the entity's operations generated sufficient cash flows for the repayment of loans, maintenance of the entity's operating capability, payment of dividends, and conduction of new investments (Minton et al., 2002). Indeed, the emphasis of the Financial Accounting Standards Board (FASB) from the generation and adequacy of operating cash flow after deducting dividends and other expenses is the free cash flow (FCF). Free cash flow is the amount of cash from operations that remained in the company after deducting dividends and capital expenditures. As the amount of free cash flow is more, it suggests that the entity's management in achieving the value creation has been successful. In accordance with the concept of free cash flow, the business unit management should always seek opportunities to enhance the company's value. This notion emphasizes that no new products can be manufactured and sold without creating sufficient cash; thus, the company's value will not ameliorate without enough operating cash flow. Hence, one can conclude that the concept of free cash flow has beneficial applications in evaluating the manager's stewardship function (Cheng et al., 2005).

By employing data envelopment analysis, Ton et al. (2021) realized that market conditions in the hotel industry have a substantial role in the generation of operating cash flows. In their opinion, market conditions and opportunities in establishing competitive power can significantly influence the manager's efficiency of this industry in the generation of operating cash flows. Sawarni et al. (2021), in a study entitled the efficiency of working capital management, came to the conclusion that the nature of the business activity and profitability of the company has a significant impact on the efficiency of working capital management. The evidence gained from this study suggests that the working capital (WC) management efficiency will decline with increasing the company's profitability.

As well as, they demonstrated that the capital market positively reacts to the high efficiency of companies in working capital management. Chen & Wang (2020), in evaluating the manager efficiency in financing firms in emerging and developing industries, found that the efficiency of these companies is at a low level. Besides, the results of this survey reveal that companies operating in domains such as biopharmaceutical, energy conservation, and environmental protection enjoy high efficiency in their financing. It was illustrated in this investigation that the variables of debt to asset ratio (D/A) or leverage ratio, financial costs, and cash flow ratio have a significant impact on the companies' financing efficiency. Moreover, sales growth and the net profit to asset ratio have a significant and positive correlation with the mentioned efficiency. Seth et al. (2020) evaluated the working capital management efficiency in Indian companies from 2008 to 2019. Their study's results exhibited that the efficiency of the examined companies was nearly fixed. Furthermore, they discovered that the capacity to generate internal resources, company size, gross domestic product (GDP), and interest rates have a considerable impact on the working capital management efficiency. Zeng & Jang (2019), in investigating the managers' efficiency in financing companies, represented that solely 2.4% of the companies under study have high efficiency in the financing, and the others do not have favorable efficiency. They proposed that managers should promote the structure of investments and lower their redundancy and waste redundancies to enhance efficiency in financing.

2.2. Management Capability

Management capability is one of the aspects of human capital and an integral part of intangible assets. Texts and topics associated with accounting and finance consider the manager's ability as his/her efficiency in the optimal conversion of company resources into revenue. In other words, if a manager can acquire higher output at a certain level of resources, then one can argue that the manager has the effective capability of utilizing the resources of the company. Efficient and capable managers have a better understanding of the

internal and external conditions of the business unit. They specify profitable projects through this strength and knowledge and upgrade cash flow and business unit performance by the investments in them.
Thus, managers' capability directly influences the company's profitability, cash flow, and company value (Demerjian et al., 2013). In the opinions of the authors of this paper, measuring the relative efficiency of managers in the generation of operating cash flow via data envelopment analysis (DEA) can be regarded as a criterion to assess the managers' capability in line with financial reporting objectives, particularly stewardship theory. Sima Mora (2021) examined the managers' efficiency in family companies. The results of her study indicated that the efficiency of managers in these companies would be low if the companies are managed by a family member.

In this research, she expresses that the issue which is critical for the managers of these companies is family interests, including the maintenance of family reputation, and management topics and requirement have no importance for them. Chalaki et al. (2018) regard management capability as one of the variables influencing the financial performance and continuity of business units. They realized that there was a positive and significant correlation between management capability and financial flexibility. Also, they represented that corporate financial distress declines by enhancing the managers' flexibility and capability. Jabbarzadeh Kangarlouyi et al. (2019) assessed the managers' capability of listed companies on the stock exchange by employing DEA. They found that information asymmetry and information uncertainty decreased by increasing management capability. Furthermore, the evidence of their research revealed that the capability of the manager causes the improvement of the company's ranking in timely disclosure of information. In this study, they came to the conclusion that management capability leads to information transparency. However, a deficiency in the internal controls of companies could lower the impact of management capability on the transparency of information.

3 METHODOLOGY

The population of this study included companies listed on the Tehran Stock Exchange. The time-domain of the research is from 2013 to 2019. Theoretical foundations and research data are collected on the basis of library (desk) studies. The data needed for statistical analysis are extracted from the financial statements of companies listed on the Tehran Stock Exchange from the electronic database of the Stock Exchange Organization. The testing of the hypotheses is performed based on the multivariate regression method. Besides, the statistical sample of the current study has been selected with regard to the following conditions:

1) The company has been listed on the stock exchange from 2013 onwards.
2) The company is not among specialized investment and banking companies since these companies enjoy the nature and classification of items in different financial statements.
3) The financial period of the company should be the end of March.
4) The data of the company is available.

Regarding the above circumstance, merely 121 companies had the above conditions; hence, they were selected as a statistical sample. The research model is also written as equation number 1:

$$CEO\_ERit = \beta0 + \beta1ROAit + \beta2Sizeit + \beta3LEVit + \beta4\ PMCit + \beta5CEO\_Fk\ it + \beta6BIndepit + \beta7Ins\_Sh\ it + \lambda$$

Equation No. 1

CEO_ERit = The CEO efficiency score of each company per year.

In this survey, efficiency was calculated on the basis of data envelopment analysis to the separation of each industry. To this end, the input variables of total financial facilities, total operating costs, number of employees, total fixed assets and output variables are also regarded as operating cash flow. The goal of this study is to measure the capability and efficiency of the manager in the generation of operating cash flow concerning input variables.

ROAit = Company profitability that represents the ratio of net profit to total assets of each company per year.
Sizeit = Company size that is equal to the natural logarithm of each company per year.
LEVit = Financial leverage that is the ratio of total debt to total assets of each company per year.

PMCit = Competitive ability of each company, which is measured by the ratio of sales of any company in each year to the total sales of the industry in the same year.
CEO_Fk it = CEO financial knowledge is a dummy variable with one and zero values. Whenever the CEO has an education in the domains of finance, accounting, and management, the value of it is one and otherwise it is intended zero.
BIndepit = Board independence that is obtained through the ratio of the number of non-executive board members to the total number of board members.
Ins_Sh it = Percentage of shares owned by institutional shareholders in each company per year.
λ = Remaining values of the model

3.1. Hypotheses of the Research

With respect to the objectives and theoretical bases, hypotheses of the research are formulated and written as follows:
H1: There is a significant correlation between the company's profitability and the manager's efficiency.
H2: There is a significant correlation between the company size and the manager's efficiency.
H3: There is a significant correlation between corporate financial leverage and the manager's efficiency.
H4: There is a significant correlation between the company's competitive ability and the manager's efficiency.
H5: There is a significant correlation between the CEO's financial knowledge and the manager's efficiency.
H6: There is a significant correlation between the company's board independence and the manager's efficiency.
H7: There is a significant correlation between the percentage of shares owned by institutional shareholders and the manager's efficiency.

3.2. Data Envelopment Analysis (DEA) - Common Weighting Method

Data envelopment analysis (DEA) obtains the efficiency of decision-making units (DMU) with several inputs and outputs by the assignment of weights to them as the ratio of the sum of weighted outputs to weighted inputs. Thus, each DMU can get the most ideal weights for achieving the maximum efficiency index. Thus, the efficiency index achieved is the best level of efficiency for each DMU (Wu et al., 2016; Li et al., 2013).

Suppose that there is a set of DMUs. Each *DMU*$_j$ has *m* distinct input (*i=1...m*) x_{ij} and *s* distinct output(r=1,...,s) y_{rj} Self-evaluation efficiency of DMU_d using the CCR model in DEA will be represented as follows:

$$\max \overline{E}_d = \sum_{r=1}^{s} u_{rd} y_{rd}$$

$$S.t$$

$$\sum_{r=1}^{s} u_{rd} y_{rj} - \sum_{i=1}^{m} v_{id} x_{ij} \leq 0 \quad j = 1, \dots, n \qquad (1)$$

$$\sum_{i=1}^{m} v_{id} x_{id} = 1$$

$$v_{id} \geq 0 \qquad i = 1, .., m$$

$$u_{rd} \geq 0 \qquad r = 1, \dots s$$

In which u_{rd} and v_{id} are the representations of the weights of *r*-th output and *i*-th input from DMU_d, respectively. The result of this model is the maximum efficiency $\overline{E}_d$. A set of optimal weights $v^*_{1d}, v^*_{2d}, \dots, v^*_{md}, u^*_{1d}, u^*_{2d}, \dots, u^*_{sd}$ is achieved for each DMU_d, by solving model (1). Therefore, we have a set of weights to assess the efficiency of each DMU that measures the efficiency of the DMU in the best conditions. However, this results in dissatisfaction among DMUs. It is possible that the best weight selected for a DMU is not acceptable for the other DMU. To address this problem, common weighting techniques in DEA are exploited (Hatami-Marbini & Saati, 2018). The DEA common weighting method that is employed in this study is as follows:

$$\min \sum_{j=1}^{n} \overline{E}_j - E_j$$
$$S.t$$

$$E_j = \frac{\sum_{r=1}^{s} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}} \leq 1 \ , \quad j = 1, \dots, n \qquad \textbf{(2)}$$
$$v_i \geq 0 \ , u_r \geq 0 \ \ i = 1, \dots, m; \quad r = 1, \dots, s$$

Where $\overline{E}_j$ is the efficiency gained using model (1) for $DMU_j \ (j = 1,2, \dots, n)$. Actually, this model seek a common weighting for DMUs, which has the lowest distance from their ideal efficiency. The above model can be written as follows:

$$\max \sum_{j=1}^{n} \frac{\sum_{r=1}^{s} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}}$$
$$S.t$$

$$\sum_{r=1}^{s} u_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} \leq 0 \ , \quad j = 1, \dots, n \qquad (3)$$
$$v_i \geq 0 \ , u_r \geq 0 \ \ i = 1, \dots, m; \quad r = 1, \dots, s$$

Considering that $\overline{E}_j$ is a certain value and does not affect the optimization, the objective function has been deleted. After solving this model, which is a common weighting technique, the optimum solutionsv_1^*, v_2^*,…,can be achieved, which is called the common weight, and the efficiencies of the u_s^* ,…,u_2^* ,u_1^* ,v_m^* common weight include:

$$E_j = \frac{\sum_{r=1}^{s} u^*{}_r y_{rj}}{\sum_{i=1}^{m} v^*{}_i x_{ij}} \qquad j = 1, \dots, n \qquad (\mathbf{4})$$

Hence, E_j as the efficiency score of common weighting method in this study is employed to calculate the efficiency score of companies.

3.2.1 Common Weighting Method (BCC or Banker Charnes Cooper Model)

The common weighting model presented above was CCR (Chames, Cooper and Rhodes Model). However, one can develop its BCC model. Indeed, the common weighting technique to evaluate the efficiency with the BCC assumption is as follows:

$$\max \sum_{j=1}^{n} \frac{\sum_{r=1}^{s} u_r y_{rj} + w}{\sum_{i=1}^{m} v_i x_{ij}}$$
$$S.t$$

$$\sum_{r=1}^{s} u_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} + w \leq 0 \ , \quad j = 1, \dots, n \qquad (5)$$
$$v_i \geq 0 \ , u_r \geq 0 \ \ i = 1, \dots, m; \quad r = 1, \dots, s$$

After solving the common weighting model, the optimum solutions$v_1^*, v_2^*, \dots, v_m^*, u_1^*, u_2^*, \dots, w^*, u_s^*$ are obtained, which are called the common weight, and the efficiencies of the common weight are:

$$E_j = \frac{\sum_{r=1}^{s} u^*{}_r y_{rj} + w^*}{\sum_{i=1}^{m} v^*{}_i x_{ij}} \qquad j = 1, \dots, n \qquad (6)$$

Among the characteristics of BCC common weight models is the data transfer stability. This is so that if inputs and outputs are added with a fixed number, no change can be achieved in the efficiency score. This case is favorable for financial data that contains negative data. In this way, we add the inputs and outputs that contain negative data with a fixed number so that they all become non-negative, and the initial assumption of DEA that all inputs and outputs are non-negative is established (Benicio & Soares, 2015).

4 RESULTS

4.1. Results of Descriptive Statistics

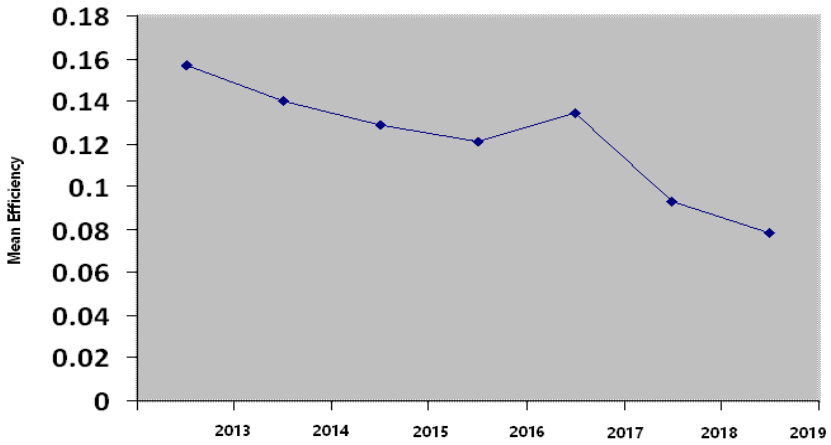
In this part, descriptive statistics of research variables are provided in Tables 1 and 2 prior to research hypotheses testing. Table 1 illustrates the descriptive statistics of input and output variables of efficiency calculations on the basis of data envelopment analysis (DEA). Besides, the descriptive statistics of the variables associated with testing the hypotheses are represented in Table 2. The evidence presented in Table 2 indicates that the mean efficiency of managers in the generation of operating cash flow during the investigation period is very low and equal to 12 percent. Moreover, chart 1 evidently specifies that the level of manager's efficiency in the generation of operating cash flow has a decreasing trend during the period of study.

Table 1. Descriptive statistics of variables associated with DEA - Figures in millions of Rials

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
Operating cash flow	312253.46	64222	1266848.53	-7600882	15426531
Total assets	4645460.89	1442777	25366518.35	14911	272945479
Operating costs	2800424.85	849183.5	9725528.26	15333	145281641
Total financial facilities	1526348.17	277784.5	5538189.84	143	81266701
Number of employees	777	367	4145.28	17	10773

Table 2. Descriptive statistics of variables associated with testing the hypotheses

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
Manager's efficiency	0.121424	0.04799	0.174264	0	1.00087
Profitability	0.121357	0.09964	0.189902	-0.78097	1.97965
Percentage of institutional shareholders	0.661512	0.708	0.218997	0	0.9945
CEO financial knowledge	0.592637	1	0.491636	0	1
Financial leverage	0.658884	0.600645	0.475986	0.03696	0.90987
Company size	14.26327	14.15567	1.363912	9.60985	19.49298
Board independence	0.740158	0.8	0.164823	0	1
Competitive ability	0.023777	0.007695	0.041485	0.00026	0.33114



Figur 1. The mean efficiency in the generation of operating cash flow in the period under study

4.2. Results of Hypotheses Testing

The results of the testing hypotheses are displayed in Table 3. The evidence of this table implies that profitability, percentage of shares owned by institutional shareholders, and CEO financial knowledge do not have a significant correlation with manager's efficiency at 95% confidence level since the significance level of these variables is more than 5%; thus, the first, fifth, and seventh hypotheses are rejected. However, because

the significance level of the variables of company size, financial leverage, board independence, and company's competitive ability is less than 5%, so one can argue that there is a significant correlation between the variables of company size, financial leverage, board independence, and company's competitive ability with manager's efficiency at the 95% confidence level. Hence, the second, third, fourth, and sixth hypotheses are confirmed. Moreover, the results of Table 3 represent that there is no critical collinearity between the independent variables of the research model since the collinearity statistic of all independent variables is close to one.

This indicates that the autocorrelation between the independent variables is so minimal. Durbin Watson statistic is equal to 1.8, which is close to 2, representing that there is no autocorrelation between the residual values of the research model. The significance level of variance heterogeneity statistic is greater than 5%. This significance level represents that there is no heterogeneity of variance between residual values of the research regression model. The F-Limer test is employed for the choice between pooled regression methods and fixed effects (FE) regression.

In this test, the acceptance of the H0 hypothesis means the model estimation by pooled regression technique. Otherwise, if H0 is rejected, the fixed effects model has superiority compared to the pooled regression model; in this case, the regression model based on the fixed effects model will be estimated. Because the significance level of the F-Limer statistic is equal to zero and less than five percent, one can argue that the research model is estimated with fixed effects. If a fixed-effects model is accepted on the basis of the F-Limer test, then it is required to employ another test called the Hausman test.

This test specifies which of the fixed effects and random effects models is more suitable. If the level of gained probability level is less than five percent in the Hausman test, it is concluded that H0 is rejected, and the model is estimated using the fixed-effects method. Nevertheless, if the probability level is more than five percent, the model is selected by the random-effects method. As the significance level of Hausman statistic is more than five percent in accordance with Table 3, so the model is estimated based on the random effects (RE) model.

Table 3. Results of hypotheses testing

Variable Name	Coefficient	Standard Deviation	t statistic	Significance level	Collinearity statistic
Fixed value	0.632851	0.075478	8.384538	0.0000	-
Profitability	-0.037071	0.027037	-1.371104	0.1708	1.096598
Percentage of shares of institutional owners	0..28509	0.025726	-1.108210	0.2681	1.043587
CEO financial knowledge	0.017749	0.11890	1.492705	0.1360	1.050016
Financial leverage	-0.028559	0.011108	-2.571117	0.0103	1.069728
Company size	-0.041031	0.004814	-8.522686	0.0000	1.151196
Board independence	0.129169	0.032138	4.019219	0.0001	1.081535
Competitive ability	0.414485	0.154307	2.683103	0.0074	1.064663
Determination coefficient:	F statistic: 5.357955 (0.0000)	Durbin-Watson statistic: 1.835273	F-Limer statistic: 7.400477 (0.0000)	Hausman statistic: 9.740035 (0.2038)	Variance heterogeneity statistic: 1.542727 (0.1493)

5 DISCUSSION & CONCLUSION

This investigation measured the manager's efficiency of companies listed on the Tehran Stock Exchange in the generation of operating cash flow on the basis of data envelopment analysis (DEA) and then evaluated the factors influencing it using multivariate regression.

The descriptive statistics' results indicated that the mean efficiency of managers in the generation of operating cash flow during the research period is very low and equal to 12%, which has a downward trend at this time. Besides, the results of testing hypotheses suggest that profitability, percentage of shares owned by the

institutional shareholders, and CEO financial knowledge have no significant effect on the managers' efficiency. This is in contradiction with the results of the study conducted by Sawarni et al. (2021).

This survey approves that variables, including the company's competitive ability, board independence, company size, and financial leverage, significantly affect the managers' efficiency in the generation of operating cash flow. The findings reveal that company size has a substantial and negative correlation with managers' efficiency. That is, as the company size becomes larger, the managers' efficiency in the generation of operating cash flow will decline. In other words, managers in large companies have no the necessary ability and capability to employ financial resources (financial facilities received), human resources (number of employees), physical resources (fixed assets), and the costs paid for utilizing these resources to generate operating cash flow relative to small companies. Moreover, the evidence of this research represents that variables such as financial leverage, board independence, and competitive ability are three variables, which have a positive influence and correlation with managers' efficiency; i.e., the efficiency will enhance by an increase in them. If the competitive ability and board independence are regarded as variables of the corporate governance system, then one can argue that the managers' efficiency in the generation of operating cash flow upgrades by increasing these two variables.

The existence of a positive association between leverage ratio and managers' efficiency can be interpreted in such a way that the managers' capability to generate operating cash flow is dependent on fiscal policies, including financial borrowing of companies. Additionally, one can realize that company managers do not have the necessary ability to generate operating cash flow without this variable. The recent results achieved from this study are consistent with the results of the research conducted by Siav et al. (2021) and Ton et al. (2021). They take into account access to borrowing and financial credit, market conditions and opportunities in the creation of competitive ability and components of the governance system as proper indicators to upgrade the managers' efficiency in financial performance. The scientific achievements of this article can be interpreted parallel to the significance of operating cash flow with respect to the financial reporting objectives. This paper demonstrated that the operating cash flow and the capability of its generation could be a proper indicator to evaluate the manager's stewardship function for achieving the objectives of financial reporting. The evidence of the current study reveals that the level of manager's efficiency in the generation of operating cash flow is very low with a declining trend.

In other words, the managers of the surveyed companies have not performed their stewardship function properly in order to maintain the interests of shareholders, creditors, and other stakeholders. Corresponding to the financial reporting objectives, this issue could offer beneficial information to economic policymakers, investors, and financial analysts. Among the other scientific achievements of this paper is that it demonstrates that the data envelopment analysis (DEA) technique to evaluate the stewardship function of managers is a helpful means to analyze the managers' efficiency for financial analysts, students, and financial and accounting researchers.

As expressed, the data envelopment analysis is a robust and flexible technique to measure financial performance, which could provide more information relative to conventional analysis approaches. The results of this study concerning the importance of DEA in the assessment of the managers' efficiency can be matched with the investigation carried out by Shabani & Farzipour (2015). They confirm that the DEA is a suitable and beneficial technique to analyze the managers' efficiency compared to traditional analyses.

5.1. Suggestions and Limitations of the Research

With regard to the research findings and evidence, policymakers and legislators in the domains of economics and capital markets are emphasized to take into consideration plans for ongoing evaluation and supervision on the managers' efficiency, particularly in large companies.

They can periodically perform the assessment of the managers' efficiency and the choice of efficient managers by employing the DEA techniques. Furthermore, because the results of this survey represent the very low efficiency of managers, so legislators and policymakers of accounting standards are suggested to take into account the issue of evaluating the managers' stewardship function in line with the financial reporting

objectives transparently and separately in the conceptual framework of financial reporting and do not combine it in the goal of the usefulness of information for decision making.

It is proposed for further studies that the technical reasons for the inefficiency of managers in companies listed on the stock exchange be explored as qualitative research. The population in this study included companies operating in the Tehran Stock Exchange, Accordingly the achieved results are assigned to these Companies and cannot actually be generalizable to all organizations and companies. It is recommended that researchers in future investigations implement the subject of this study in other organizations and manufacturing and service companies.

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