The Effect of Sales Engineering on Marketing Performance Improvement in Iran Khodro Company

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A B S T R A C T

In today's complex, dynamic, and ever changing environment, companies need to develop and adopt strategies that can help them increasingly improve their performance. This study aimed to identify and evaluate the effect of sales engineering on marketing performance improvement in Iran Khodro Company. The research type was applied with survey method and two questionnaires were used as research tools. The first questionnaire was related to sales engineering and the second questionnaire was concerning marketing performance in the organization. Cronbach's alpha coefficient was 0.952 for sales engineering and 0.936 for marketing performance. The research hypotheses were tested using structural equation modeling technique and the final model was proposed. In this model, dimensions for measuring marketing performance were properly selected and the model was approved. Factor loading of correlation between sales engineering and marketing performance was obtained 0.9 indicating high correlation between these two constructs. P-value and RMSEA were acceptable and confirmed. All of these indicators as well as other goodness of fit indices obtained from structural equation modeling indicated good fit of model with research data. This study suggested that market knowledge had an effect on the marketing performance improvement of Iran Khodro Company. Therefore, if there were a better market knowledge, marketing performance would be better and more effective. Another result was that customer knowledge had an effect on marketing performance improvement. As a result, if there were more customer orientation, customer relationship, and customer knowledge, the performance improvement and more sales would be ensured and the sales force could have a positively strong and long-term relationship with customers and help them have better sales and market.

INTRODUCTION

Today, organizations must be operated in a competitive environment with amazing changes. In such circumstances, managers do not have much opportunity to control all environmental factors and they should spend most of their time and energy to identify the internal and external environment of the organization and delegate other tasks. Employees are able to handle assigned tasks when they have necessary skills, knowledge, and competency and well recognize organizational goals. The marketing plan is a tool that can help management in this area [8].

In today’s complex, dynamic, and ever changing environment, companies need to design and adopt strategies that can help them increasingly improve their performance. Since in such a competitive environment, companies are able to survive that are capable of competition and keep pace with the changing and dynamic conditions of competitive market. The analysis and comparison of observed performance with past trends, competitors and industry average provides a good feedback for future decisions and activities. That is why one of the main goals of all companies over time has been continuous improvement of performance [5].

Launching manufacturing and investment activities is always accompanied by research and scientific planning. In large companies, prior to manufacturing operations, research and marketing team begins its activities for the feasibility of product acceptability and market need. In addition, in situations where produced goods are not sold or do not have an appropriate market in competition with similar products, research and marketing group is required to take an action and conduct necessary planning and studies to obtain information about market and product positions. All individual and group activities for the marketing of a product must be
deliberated and formulated in the certain forms and activities without studying and planning must be eliminated. Thus, in the marketing of any product, the product plan must be prepared carefully and available to managers for necessary decision-makings. Performance evaluation is a process that all organizations are obliged to do it. Organizations may do this completely, systematically or too fast; however, organizations must conduct performance evaluation for improvement [10].

Most companies do not take step on the acceptable levels of efficiency and continuous improvement that they satisfy and in a broader scope of companies with low yields, they are trying rationally to improve their poor performance by improving organizational standards and approving changes in the organization. Most organizations spend their energy on unnecessary elements that are easily visible and tracking. For being more efficient and effective their businesses compared to other competitors, many managers assume that they must split the front line of their business and surpass the competitors. These managers spend a lot of time and money to prepare plans that will differentiate them from their competitors. This managerial view creates ambitious and visionary managers. Company’s consultants provoke this ambition but this finally leads to distract employees’ attention, organizational embezzlement, and senior management’s frustration. As noted, most organizations fail to improve their performance and or acquiesce to the current situation. Sales or market share is a sensitive measure of how customers pay attention to goods or services. Besides, if the value proposition changes for a customer, sales and market share are also influenced [1].

Sales engineering is not too long that has been proposed in the literature, consequently in our country, it is very young and less than ten years old. Earlier years, this was raised in Europe that in many occasions, companies had trouble in selling special and customized goods. The reason was quite clear. The seller did not have enough skill in asking customer and understanding his/her need, nor could the customer explain well his/her needs and provide sufficient information. Therefore, an extensive research project was carried out in 23 European countries, which lasted about 12 years. Ten thousand sales inventories of industrial and engineering goods were studied and about 35000 sales meetings were evaluated. Sales engineering as an emerging knowledge can be considered the result of technological development of human societies’ knowledge, the diversity of products, technical similarities of goods, and close competition between different companies in recent decades [2].

Using systematic approaches, the organization will be able to take steps to improve the weaknesses and achieve organizational goals with the maximum use of capabilities and strengths [4].

Most of items found in technical products market are goods that the seller requires extensive technical knowledge i.e. only with the standard technical specifications of such goods, the buyers are not persuaded to purchase, repurchase, and become a repeat customer. Therefore, recognizing the importance of sales engineering as a written document based on the specified dimensions is essential for achieving goals and effective marketing performance. On the other hand, despite the highly importance of sales engineering in the organizational success, no academic study based on scientific research has not been yet done on the effects of sales engineering on the organization.

Describing the application methods of marketing resources and achieving marketing objectives, sales engineering is helpful to improve the company’s performance. It is hoped that companies and institutions take steps with sales engineering to improve their marketing performance. Hence, this study is sought to answer the question whether sales engineering has an effect on improving companies’ marketing performance.

Research method:

Since this study aim to use existing knowledge to demonstrate a structural relationship and helps managers make decisions in a particular area, in terms of purpose it is an applied research. Library and field methods such as questionnaire are used for data collection. The population is composed of Iran Khodro Co’s managers and supervisors. Cochran formula is also used for sampling that based on calculations the study sample size is estimated 372. In this study, questionnaire is used to collect primary data.

Besides the Delphi questionnaire, which is used for initial screening and identification of main components, two questionnaires are used for data collection. The first questionnaire is related to sales engineering. To develop this questionnaire, first sales engineering dimensions are identified. Therefore, three components are determined including product knowledge, market knowledge, and customer knowledge. Some items or measures are developed to assess each of these latent variables. The developed items are the study observable variables. Finally, a questionnaire consisting of 13 questions is developed. The second questionnaire is related to organization’s marketing performance. To develop this questionnaire, first marketing performance measurement dimensions are also identified. Therefore, three components are determined as main dimensions of marketing performance improvement including sales promotion, market share development, and market management improvement. Some items or measures are developed to assess each of these latent variables. These items are the study observable variables. Finally, a questionnaire containing 14 questions is developed. In this study, by distributing 25 questionnaires in a pilot study, Cronbach’s alpha coefficient is 0.952 for sales engineering and 0.936 for marketing performance. Therefore, the reliability of both questionnaires is very satisfactory.
Statistical methods used in this study can be divided into two inferential statistics and descriptive statistical methods. Descriptive statistical methods such as frequency distribution tables and mean values have been used to investigate and describe the general characteristics of the respondents. The inferential statistics methods are also explained briefly below. SPSS and LISREL software are used for data analysis.

**Results:**

**Confirmatory Factor Analysis:**

As noted, to evaluate the model, first confirmatory factor analysis is used to assess the relationships between latent variables and their measurement items. Confirmatory factor analysis measures the factor structure of the scale. In this study, two scales are used for data collection. Both of these scales are validated using confirmatory factor analysis. The factor analysis results of marketing performance measurement indicators are presented in table 1.

![Factor analysis and structural model of marketing performance measurement components](image_url)

**Fig. 1:** Factor analysis and structural model of marketing performance measurement components.

**Table 1:** Factor loadings of evaluation indicators of each dimension.

<table>
<thead>
<tr>
<th>IFI</th>
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<th>RMSEA</th>
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<th>Fit index</th>
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<td>Calculated values</td>
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According to the results of figure 1, factor loading in all cases is higher than 0.6 indicating a reasonable correlation is between latent variables (dimensions of each main construct) and observable variables. For evaluating the significance of relationship between variables, t-test statistic or t-value is used. Based on the results of table 1, at 5% confidence level, the factor loading of evaluation indicators of each dimension is higher than 1.96 indicating the correlations are significant. Therefore, confirmatory factor analysis suggests that the scale designed for marketing performance measurement has enough validity.

**Product knowledge has an effect on the marketing performance improvement:**

Three latent variables are used to measure sales engineering. Some items are also identified to measure each latent variable. The mean of measurement items of each dimension is determined; therefore, each marketing performance dimension is entered into the model as an observable variable. Four observable variables are also used to measure the latent variable “increased sales”. As presented in figure 2, the factor loading of each item is higher than 0.6 suggesting the correlation is highly desirable. The factor loading between product knowledge and marketing performance is determined 0.60 indicating that product knowledge has a significant effect on the marketing performance.
Fig. 2: Structural equation modeling of factor “product knowledge and marketing performance”.

Some goodness of fit indices are used to determine the model’s fitness which are presented in table 2. Since RMSEA is less than 0.1, the model has a good fitness. Other goodness of fit indices are also acceptable.

Table 2: Goodness of fit indices of structural model.

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<th>IFI</th>
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<td>0.97</td>
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<td>0.069</td>
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<td>2.83</td>
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Market knowledge has an effect on the marketing performance improvement:

Another variable for sales engineering evaluation is market knowledge. Five items or observable variables are used for assessing latent variable “market knowledge”. Three latent variables are also used for assessing “marketing performance”. Some items are also identified for evaluating each latent variable. The mean of measurement items of each dimension is determined; therefore, each marketing performance dimension is entered into the model as an observable variable. The factor loading of each item is presented in figure 3. The factor loadings are higher than 0.6 suggesting that the correlation is highly desirable. In figure 4, the factor loadings when calculating t-value indicate the significance of results. The correlation between marketing performance and market knowledge is 0.71 representing that market knowledge has a significant effect on the marketing performance. T-value is 7.85 indicating that the correlation is significant.

Fig. 3: Structural equation modeling of factor “market knowledge and marketing performance”.

Here, some goodness of fit indices are also used to determine the model’s fitness which are presented in table 3. Since RMSEA is 0.009 and less than 0.1, the model has a good fit. Other goodness of fit indices are also acceptable.
**Table 3:** Goodness of fit indices of structural model.

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<tr>
<th>Fit index</th>
<th>CMIN/DF</th>
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**Customer knowledge has an effect on the marketing performance:**

Six items or observable variables are used for assessing the latent variable “customer knowledge”. As presented in figure 4, the factor loading of each item is higher than 0.6 suggesting that the correlation is highly desirable. The factor loadings when calculating t-value indicate the significance of results. The correlation between marketing performance and customer knowledge is 0.75 indicating that customer knowledge has a significant effect on the marketing performance. T-value is 6.49 representing that the correlation is significant.

**Fig. 4:** Structural equation modeling of factor “customer knowledge and marketing performance”.

Here, some goodness of fit indices are used to determine the structural modeling fit of hypothesis 3 which are presented in table 4. Since RMSEA is 0.081 and less than 0.1, the model has a good fit. Other goodness of fit indices are also acceptable.

**Table 4:** Goodness of fit indices of structural model.

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<th>Fit index</th>
<th>CMIN/DF</th>
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<th>RMSEA</th>
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**Research final model:**

The final model that is validated using LISREL software is presented in figure 5. The model that is drawn based on LISREL output displays the factor loadings of measuring each marketing performance dimension. In each hypothesis, the factor loadings of t-value statistic indicate the significance of correlations. In figure 5, the factor loadings are higher than 0.6 representing that these dimensions for evaluating marketing performance are selected properly and the model is verified. The factor loading of correlation between sales engineering and marketing performance is 0.9 indicating high correlation between these two constructs. The factor loading of t-value statistic is 9.22 indicating that the correlation is significant.

**Discussion and conclusion:**

The compliance of research results with practical principles requires the consistency of other researchers’ findings. In this section, given the literature that is associated with research variables, the result analysis is explained and finally conclusions and suggestions are offered.

Most organizations spend their energy on unnecessary elements that are easily visible and tracking. For being more efficient and effective their businesses compared to other competitors, several managers assume that they must split the front line of their business and surpass the competitors. These managers spend a lot of time and money to prepare plans that will differentiate them from their competitors. This managerial view creates ambitious and visionary managers in the organization. Company’s consultants provoke this ambition but this finally leads to distract employees’ attention, organizational embezzlement, and senior management’s
frustration. As noted, most organizations fail to improve their performance and or acquiesce to the current situation.

According to researcher studies, the effects of market knowledge, product knowledge and customer knowledge on marketing performance improvement have not been yet investigated and further research is required. In this section, the research findings and comparison with similar and opposed studies are discussed.

Given the research results, product knowledge had an effect on marketing performance improvement in Iran Khodro Company. This finding indicated that there was a significantly positive relationship between product knowledge and marketing performance. The better and more product knowledge was the better marketing performance would be. This finding is consistent with Johnston and Marshall [6] and Tybout et al [11] studies which considered product knowledge as an important factor of marketing improvement. However, our results are inconsistent with Tackseung et al [12] findings.

In a study, Matuszewski and Miller [9] suggested that product knowledge was able to increase repeat sales model in new product measurement index in the market. This study also suggests that market knowledge can fully affect marketing performance improvement in Iran Khodro Company. Therefore, the more market knowledge is the more effective and better marketing performance is. Production does not only create wealth and reduce unemployment but also if manufacturers and entrepreneurs do not make a change in their own marketing system, they are faced with difficulties in selling their products, and they cant achieve their goals. However, many manufacturers state that they do not have commercial and sales department and are not much aware of marketing techniques. This is such a problem that small businesses are particularly faced and they do not enough information from the existing markets.

The research findings is consistent with Johnson and Marshall [6], Matuszewski and Miller [9], and Tybout et al [11] studies. They found that the more market knowledge was the more marketing performance improvement would be. Lindgreen [8] found that managers’ perception of adopting strategy was in some part of sales i.e. certain behaviors such as customer orientation and market knowledge.

Another result of this study was that customer knowledge had an effect on the marketing performance improvement of Iran Khodro Company. Therefore, the more customer orientation, customer relationship, customer knowledge was the more performance improvement and sales could be ensured and the sales force could have strongly long-term and positive relationships with customers and help them have better sales and market. Many companies assume that they well know customers and their needs but it is likely that they achieve other results after examining customers’ status. This result is consistent with Brinckmann et al [5] and Karlsson et al [7] results.

Therefore, retaining existing customers and repeat customer strategies are of particular importance in today’s marketing. In current competitive market, this has caused customer orientation is considered as a matter of principle compared the past, since this marketing makes sense customer demand. Hence, the companies’ main objective should be to attract and retain customers. By meeting customer needs, managers to continue their own economic life and engage in long-term planning and increase their success.

REFERENCES