

## Research Paper

# Performance Evaluation for Dairy Products Supply Chain in Rural Areas of Kermanshah Country

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## ABSTRACT

The purpose of this study is to evaluate the performance of dairy products supply chain in rural areas of *Kermanshah* country. The statistical population of the study is about 638 people and consists of three groups, including the employees of Bisotun Milk Factory, sellers of dairy products, and dairy farms in *Kermanshah*. Based on the Krejcie & Morgan (1970) table, the sample population is calculated at about 240 people. Data collection is carried out by a researcher-made questionnaire. Three experts from the department of rural development of Ilam University verified the validity of the questionnaire, and its reliability is determined to be 0.847 using the Cronbach's alpha coefficient. Data were analyzed using the F test, one-way analysis of variance, correlation coefficient, and regression using SPSS 20 software. The results of the research indicate that variables of information flow, coordination among a network's members, marketing and sales, customer satisfaction, and transportation are in good condition. Based on the results of the regression and F test, variables of information flow and coordination, marketing and sales, customer satisfaction, and transportation have a significant effect on supply chain performance, while the two variables of cost and flexibility were not in desirable condition. Therefore, it is suggested that the supply chain should adopt appropriate strategies for better survival and widespread use and incorporate various processes, such as lower costs and greater flexibility in the business environment, which will improve the performance of the supply chain.

### Key words:

Performance of supply chain, supply chain, Dairy products, *Kermanshah*

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## Extended Abstract

### 1. Introduction

**I**n the present era, supply chain management is considered as one of the underlying foundations of business im-

plementation in the world. Supply chain management is responsible for integrating organizational units throughout the supply chain. It coordinates the flow of materials and information to meet the demands of end customers as it aims to improve the competitiveness of the supply chain. Supply chain management means integrating key business processes from the final customer to the primary

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suppliers, which provide the products, services, and information. In terms of economic structure, *Kermanshah* province is based on agriculture and animal husbandry. Therefore, creating suitable fields for the expansion and improvement of livestock capability of the province are significant. Therefore the purpose of this study is to investigate factors affecting the performance of dairy products supply chain in rural areas of *Kermanshah* country.

## 2. Methodology

The purpose of this study is to apply a quantitative approach to evaluate factors affecting the performance of dairy products supply chain in rural areas of *Kermanshah*. The statistical population of the study is about 638 people and consists of three groups, including the employees of Bisotun Milk Factory, sellers of dairy products, and dairy farms in *Kermanshah*. Based on the [Krejcie & Morgan \(1970\)](#) table, the sample population is calculated at about 240 people. Data collection is carried out by a researcher-made questionnaire. Three experts from the department of rural development of Ilam University verified the validity of the questionnaire, and its reliability is determined to be 0.847 using the Cronbach's alpha coefficient. Data were analyzed using the F test, one-way analysis of variance, correlation coefficient, and regression using SPSS 20 software.

## 3. Results

The results showed that the Kolmogorov–Smirnov test was not significant for all variables. Therefore, it can be concluded that the study variables have a normal distribution. The results of the research indicated that the variables of information flow and coordination between network members, marketing and sales, customer satisfaction, and transportation are in good condition. The results of the correlation coefficient showed that there is a significant relationship between the variables of information flow and coordination between network members, marketing and sales, customer satisfaction, transportation, cost, and the flexibility of supply chain performance. For comparing the average of supply chain performance among the studied groups, the results of the one-way analysis of variance and F analysis showed that there was a significant difference between the two groups in supply chain performance at 1% error level and 99% confidence ( $P = 0.004$ ,  $F = 5.560$ ). Therefore, the opinions of the factory staff, sellers of and dairy farmers are different in terms of performance. Based on the results of regression and F test variables of information flow and coordination, marketing and sales, customer satisfaction dairy products, and

transportation have a significant effect on supply chain performance, while the two variables of cost and flexibility were not in desirable condition.

## 4. Discussion

Based on the results of the study, the average performance supply chain variable among sellers of dairy products was higher than that of the studied groups. This suggests that supply chain performance among dairy dealers has been in a favorable position. According to the results of the study, the average cost variable among the factory employees was higher than the studied groups, which indicates that the cost among the factory staff was not favorable. However, there is not any research on the cost dimension. Therefore, for a better supply chain, the strategy adopted by the supply chain should involve various processes for delivering products at a lower cost to customers. Based on the results of the study, the mean flexibility variable was not significant among none of the studied groups. This suggests that the flexibility variable was not in desirable condition and little research has been done on the flexibility dimension. Considering the importance of these indicators, policymakers and managers should pay more attention to the most important factors affecting supply chain performance that guarantee the highest efficiency and effectiveness of supply chain performance.

## 5. Conclusion

Therefore, it is suggested that the supply chain should adopt appropriate strategies for better survival and wide-spread use, which incorporate various factors, such as lower costs and greater flexibility in the business environment, and improve the performance of the supply chain. Given that production has the most direct impact on the supply chain, it is suggested to response fast and deliver the ordered products on time.

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## Conflict of Interest

The authors declared no conflicts of interest