Estimating The Value Added of Marketing Dairy Products in Nineveh Governorate for The Year 2023

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Abstract

This study deals with the typical value of marketing dairy products in Nineveh Governorate for the year 2023, calculating costs, revenues and profits, and diagnosing the challenges and problems of marketing dairy products. (18) questionnaires were distributed to a random sample of marketers in Nineveh Governorate for the production season 2023, indicating that the average revenues per ton of dairy products amounted to (3,000,000) dinars/ton, and that the average gross value added per ton was estimated at (511,260,383.720) dinars/ton, and the average net value added per ton amounted to (510,730,703.488) dinars/ton, and the average total costs per ton amounted to (10,496,168.895) dinars/ton, while the average profit per ton amounted to (1,619,186.046) dinars/ton. *The profits were calculated based on the costs of purchasing dairy products only, without taking into account the rest of the costs, because the lease is not only dedicated to selling dairy products, but also to selling other products. The marketing of dairy products in the governorate faces many restrictions, the following are some of the restrictions that were identified in the context of this study: The absence of dairy producers' cooperatives and marketers in the regions, lack of adequate market information, lack of cold storage facilities, frequent power outages, marketing of adulterated dairy products, etc., to address the shortcomings associated with current marketing arrangements, encourage the formation of dairy producers and marketing cooperatives, establish and improve market information exchange systems, develop mechanisms for coordinated implementation of product and market standards, and take into account stakeholders, and enhance product diversification to meet market needs. Factories should be close to traders' shops to reduce costs and facilitate the marketing process. The analysis of the results also showed that there are several marketing channels through which milk and its derivatives are disposed of, and the marketing process begins from the breeder, as it is sold directly to consumers, factories, retailers, or wholesalers, so the study recommended that local dairy companies should adopt an advanced marketing strategy, and the need to update food laws and legislation to ensure consumer protection from commercial fraud and marketing deception .

Keywords: Value chain, dairy products, marketing, average costs.

Introduction

The value chain is considered a systematic way to look at the series of activities performed by the institution, so that it can be used to understand the current and potential sources of advantage that the institution achieves over its competitors [13.[

The concept of the value chain focuses on two main matters: identifying activities that add value, identifying activities that do not add value. The value chain analysis of an organization is a set of interconnected activities [24]. The connections between these activities represent important sources of

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competitive advantage and provide opportunities to achieve the common ideal of these activities, the term "value" refers to the value that is achieved for the customer at the end of providing the service. The value chain analysis is defined as a complete set of activities necessary to bring products or services from their conception to the various stages of production, delivery to end consumers and final disposal after use [20]. Effective value chain analysis gives a hint of the organization at a particular point in time while value chain mapping depicts the various steps a product goes through from raw materials to final markets [8]. The value chain is a series of activities where products pass through all activities in order and some value is added at each level of activity to the best way to store and transport their products to the market with a good profit margin [18]. The value-added chain of dairy products is meant to be a set of successive stage operations in the process of producing, manufacturing and marketing dairy products, and includes all activities that add additional value at each link in the chain [4], with an explanation of all the active actors involved and their roles across the stages of the studied chain, which is the sequence of events from production to manufacturing, then to marketing and consumption [17.[

Through the previous definitions, we concluded an analytical study conducted by a specialized team to determine the functions of products or services and determine the current value of those functions at the lowest cost, by creating creative solutions without affecting quality or performance [9.[

Among the previous studies in this field is the study of (Sarka et al., 2017) on "Value Chain Analysis of Cassava in Wolaita Zone, Snnpr, Ethiopia", the study aimed to identify the actors in the cassava value chain and their functions, develop a value chain map for cassava in the study area, and identify strategies for value chain development and market development. The study recommended that building farmers' capacity in agricultural practices such as spacing between orchards, using improved cassava varieties and comprehensive farm management is essential for developing the cassava value chain and improving cassava production system [23.[

In the study of (Kabeta, 2020) on "Analysis of Mango Value Chain: The Case of Gambella and Itang Special districts of Gambella National Regional State of Ethiopia", the study aimed to assess the actors and their roles, identify the mango market channel and analyze costs and margins along the channel, in the study areas. The study recommended improving the input supply system, training farmers, increasing the quality of market information, providing guidance on how to use the appropriate market outlet to reduce costs and maximize profit margins, improving productivity and sales volume of agricultural products, establishing infrastructure, providing extension and credit services, strengthening linkages between actors in the mango value chain and strengthening supporting institutions [19.[

In the study of (Rabiaa, 2021) on "An Economic Study Of Value Added In The Manufacture Of Dairy And Its products - A case study in Al-Sharqia Governorate", which aims to estimate the value-added chains of all manufacturing and production links in order to identify the most important problems and obstacles surrounding this industry and propose appropriate solutions for them by adopting the research, statistical, descriptive and quantitative method. The study

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recommended training workers in this industry due to its importance in providing job opportunities and income for a large number of rural families, granting government incentives to farmers of this crop and providing agricultural production requirements with the aim of expanding its cultivation and production [22.[

In the study of (Albathah, 2024) on "Evaluation of Value Chain Efficiency for Broiler Chickens in Qalyubia Governorate", the study aimed to evaluate the efficiency of broiler production and marketing in Qalyubia Governorate. The study highlights the critical challenges faced by producers and traders such as fluctuating selling prices, low consumer demand, and exploitative pricing practices. To improve efficiency, this research provides valuable insights into the broiler poultry industry in Qalyubia Governorate, highlighting areas for improvement to enhance production efficiency, profitability, and consumer access to affordable poultry [2.[

In the study of (Hassan et al., 2024) on "Value Chain Analysis of Gum Arabic Case (Study of Kordofan region-Sudan)" aimed to analyze and prepare a detailed value chain that clarifies all the parties controlling the operations within the value chain of this commodity in all its aspects. The research provides a complete analysis of the value chain of gum arabic, starting from the producer and reaching the final consumer. This study recommends the necessity of increasing gum arabic nurseries to increase productivity, and working to provide intensive protection for forests [15].Dairy products are considered important foods that protect humans from diseases because they contain many nutrients, vitamins and minerals that the human body needs. They are also sources of complete and balanced healthy food, and they occupy a significant position in all animal and agricultural sectors. Nineveh Governorate in northern Iraq is considered one of the regions that produce traditional local dairy products such as butter, ghee, yogurt, cheese, qaymar, etc. Despite the importance of marketing as one of the pillars of development, as the availability of an efficient marketing system provides incentives for the development of local production.

The importance of the research lies in the profits achieved by marketing, as the presence of a wholesaler and a retailer leads to the addition of other services that accompany the product, which leads to lower costs and better profits. The aim of the research is to estimate the costs of production,, marketing, revenues, profits and the value added of dairy products, identify strengths and opportunities, enhance them and reduce weaknesses and threats. A questionnaire form was designed for this purpose, and (18) questionnaires were distributed to dairy product marketers in Nineveh Governorate for Marketing season 2023. The research is based on the hypothesis that there is a relative importance to marketing dairy products, and this research attempts to overcome these problems with the aim of achieving value-added chains in Dairy Products Marketing dairy products and maximizing the economic return from them.

Materials and methods The research relied on descriptive analysis of the theoretical aspect of the value and value-added chain, and quantitative analysis to calculate costs, revenues and profits, and calculate the most important criteria for value added for marketing dairy products. The study was conducted in Nineveh Governorate, and 18

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questionnaires were distributed to a random sample of shops that buy processed dairy products such as cheese, qaymar, and yoghurt and sell them to consumers.

Analysis method

The analysis method included descriptive, quantitative and analytical steps, and this methodology relied on the following mathematical formula:

Value added = (production value - production input value) [7.[

The value-added criterion is one of the criteria that measures the amount of addition achieved by the project or the extent of its contribution to achieving an addition to the farm's income, and through it the total and net value added resulting from the project is calculated, as in the following equations: [10[

Gross value added = production value at market price - production input value.

Net value added = Gross value added - Depreciation [3.[

The study also relied on a set of economic criteria, including calculating each of the following:

-1 Average variable costs are calculated as in the following equation:

Average variable costs = (Variable costs) / (Number of units produced) [16.[

-2 Average fixed costs are calculated as in the following equation:

Average fixed costs = (Fixed costs) / (Number of units produced) [5.[

-3 Average total costs are calculated as in the following equation:

Average total costs = (Total costs) / (Number of units produced.(

Or (Variable costs + Fixed costs) / (Number of units produced.(

-4 Average revenues are calculated using the following equation:

Average revenues = (Total revenues) / (Quantity sold) [12.[

-5 Average profits are calculated using the following equation:

Profits = Total revenues - Total costs [1.[

-6 The average gross value-added is calculated using the following equation:

Average gross value-added = Average net profit + Average labor costs [21.[

-Average net profit = (Profits) / (Production quantity.(

-Average labor costs = (Labor costs) / (Production quantity.(

-7 Profit to value added ratio = (Profits) / (Value added.(

-8 The ratio of value added to production value = (Value added) / (Production value) [6[

Results and Discussion

First: Estimating the total cost items for dairy products:

The total cost items include both production costs (variable and fixed) for dairy products in Nineveh Governorate for the year 2023 as in Table (1.(

-1 Variable production costs :

the costs that change with the change in production volume. It is clear from Table (1) that the average cost of hired labor per ton was (669694.767) dinars/ton, the average cost of purchasing dairy products per ton was (1380813.953) dinars/ton, the average cost of water and electricity per ton was (546470.930) dinars/ton, the average cost of fuel and oils per ton was (1384680.232) dinars/ton, the average cost of maintenance and repair per ton was (718851.744) dinars/ton, and the average cost of guarding the rented property per ton

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amounted to (39104.651) dinars/ton, and the variable costs per ton of dairy products amounted to (4739616.279) dinars/ton .

-2 Fixed production costs:

These are the costs borne by the producer whether he produces or not. Table (1) shows that the average cost of family labor per ton of marketing dairy products amounted to (2213168.604) dinars/ton, the average rental cost per ton was (2490380.813) dinars/ton, and the average cost of depreciation per ton was (529680.232) dinars/ton. Depreciation is the gradual and continuous decline in the value of agricultural assets or the value of fixed assets as a result of erosion over time.

The average cost of alternative opportunities per ton was (523322.965) dinars/ton, and the average fixed costs per ton was (5756552.616) dinars/ton.

Total costs: The sum of both fixed and variable costs. Table (1) shows that the average total costs per ton of dairy products amounted to (10,496,168.895) dinars/ton, and the marketed quantity amounted to (172) tons.

Table (1): Variable, fixed and total costs of marketing dairy products in Nineveh Governorate Marketing season2023.

Production cost items	Sample costs (dinars)	Average per ton (dinars)	Relative importance of costs (%)	Relative importance of the total (%)
Cost of hired labor	115,187,500	669694.767	14.129	6.380
Cost of purchasing dairy products	237,500,000	1380813.953	29.133	13.155
Cost of water and electricity	93,993,000	546470.930	11.529	5.206
Cost of fuel and oil	238,165,000	1384680.232	29.215	13.192
Cost of maintenance	123,642,500	718851.744	15.166	6.848
Cost of guarding the rented property	6,726,000	39104.651	0.825	0.372
Total variable costs	815,214,000	4739616.279	%100	45.155
Cost of family work	380,665,000	2213168.604	38.446	21.085
Cost of depreciation	91,105,000	529680.232	9.201	5.046
Cost of rentals	428,345,500	2490380.813	43.261	23.726
Opportunity costs	90,011,550	523322.965	9.090	4.985

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Total fixed costs	990,127,050	5756552.616	%100	54.844
Total costs	1,805,341,050	10496168.895		%100

Production quantity (tons) = 172
Source: Prepared by the researcher based on the questionnaire.

Second: Revenues and profits for marketing dairy products:

Revenues are defined as the financial flows resulting from selling the commodity at the market price, when revenues exceed costs, they are considered profits. Table (2) shows that the average revenue per ton for marketing dairy products amounted to (3,000,000) dinars/ton, while the average profit per ton at the sample level amounted to (1,619,186.046) dinars/ton, profits were calculated based on the costs of purchasing dairy products. Table (2) shows that the revenues achieved were greater than the costs of purchasing dairy products only, without taking into account the rest of the costs because the rented property is not only dedicated to selling dairy products, but also selling other products. The product achieved varying profits, and the profit depends on several factors, the most important of which are the marketing method, reducing its costs so that this does not affect productivity or quality, and its ability to sell its products at a higher level and price with the sample levels that are marketed to local traders.

Table (2): Costs, revenues and profits for marketing dairy products in Nineveh Governorate for the production season 2023.

Production cost items	Sample costs (dinars)	Average per ton (dinars)
Variable production costs	815,214,000	4739616.279
Fixed production costs	990,127,050	5756552.616
Total production costs	1,805,341,050	10496168.895
Revenues	516,000,000	3000000
Profits	278,500,000	1619186.046

Source: Prepared by the researcher based on the questionnaire .

Third: The gross and net value added of marketing dairy products :

This criterion is considered one of the most important criteria used in evaluating projects, as the achieved value added represents the increase in national income, and the greater the size of the value added of the project, the greater the project's contribution to generating national income. It is clear from Table (3) that the average gross value added per ton was estimated at (511260383.720) dinars/ton, and the average net value added per ton was estimated at (510730703.488) dinars/ton. The Profit to value added ratio criterion of dairy products was calculated, and this criterion indicates the importance of profits as one of the elements of the value added from the gross value added achieved by the farm, and it amounted to (0.003) for each of the total sample and one ton of dairy products. The

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value-added ratio criterion to the production value was also calculated, and this criterion shows the importance of the value added to the production value, and it amounted to (0.990) at the level of each of the total sample and one ton of dairy products .

Table (3) The gross and net value added of marketing dairy products in Nineveh Governorate for the production season 2023.

Economic criteria	Sample costs (dinars)	Average per ton (dinars)
Gross value added	87,936,786,000	511260383.720
Net value added	87,845,681.000	510730703.488
Average gross value added	_____	4502049.418
Average net profit	_____	1619186.046
Profit to value added ratio	0.003	0.003
Ratio of value added to production value	0.990	0.990

Source: Prepared by the researcher based on the questionnaire.

Fourth: Strengths, weaknesses, opportunities and threats facing dairy product marketers: (SWOT) Analysis:

It is a descriptive analytical method through which the factors and variables that represent the value chain and its strengths and weaknesses are identified, analyzed and evaluated, and the organization's external environment is analyzed, including its opportunities and threats. The word "SOWT" is an abbreviation for the components of the internal environment represented by strengths and weaknesses, as well as the factors of the external environment represented by the opportunities and threats that appear in each link. It is used to evaluate the organization's performance and ability to expand and compete [14.[

It includes:

-1 Internal factors, including strengths and weaknesses.

-2 External factors, including opportunities and threats [11.[

Through the interviews conducted by the researcher with dairy product traders and marketers, and

questionnaire information for the production season 2023 in Nineveh Governorate, the most important points were reached, as shown in Table (4.(

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Table (4)- (SWOT) Strength, weakness points, opportunities and threats

Strengths	Weaknesses
	1- Lack of distribution outlets and failure to take advantage of marketing opportunities. 2- Failure to separate the cost of delivery from the cost of milk. 3- High transportation costs and high oil prices are the main reason for the high cost of transportation.
1- Availability of modern means of communication such as mobile phones and social media. 2- Ease of marketing traditional dairy products among rural people through acquaintances, relatives and neighbors, especially within the same village. 3- Direct dealing with the consumer, thus saving time, effort and transportation costs.	4- Lack of attention to transportation timings. 5- High rental costs. 6- Intense competition in the dairy marketing sector where competitors must compete with each other to obtain a high return. 7- Lack of awareness of marketing strategies. 8- Monopoly and exploitation of traders during disasters and crises. 9- Low income of rural breeders and manufacturers due to recession in marketing products. 10- Lack of cold stores in the governorates and the small number of daily marketing vehicles for the governorates.
Opportunities	**Threats**
1- Marketing opportunities for pure milk and other value-added products such as curd and yogurt are at the highest level. 2- Maintaining documents and accounting system in the right way and as a result, controlling activities such as budgeting and forecasting can be used to get profits at the lowest cost. 3- They have the right strategy for milk collection where they appoint competitors as milk collectors in the morning and evening with payment	1- Lack of cooperation between the producer and the marketer. 2- Weak contractual relations between dairy producers, manufacturers and marketers. 3- Resorting to deferred sales when crises occur. 4- Increased market disruption. 5- Moving towards imported products due to their low prices.

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based on kilometers.
4- They have proper marketing strategy as marketing strategy and training are provided by the company's R&D department.
5- They have infrastructure facilities.
6- Possibility of future expansion of marketing systems.
7- Availability of distribution outlets linked to foreign markets.
8- Possibility of opening export markets to market products with the availability of necessary support for purchasing machinery and production and manufacturing equipment.

Source: Prepared by the researcher based on personal interviews and questionnaire.

Conclusions

Dairy production represents an opportunity to create job opportunities in Nineveh Governorate (farmers, transporters, veterinarians, vaccinators, agricultural food producers, etc.). The results obtained showed a high percentage of fixed costs from the total production costs. Shop Rental Costs came in first place, and the value added is still low and its benefits are not equal among the actors.

Recommendations

Establishing centralized regular markets for the sale of milk and its derivatives in places close to consumer locations and that the buying and selling of milk and its derivatives take place under government control devices that monitor the buying and selling prices, providing distribution outlets linked to external markets, and following up on scientific research in the field of marketing milk and its derivatives in all areas of the governorate.

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