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The structure of production and marketing costs and economic indicators for table eggs in Baghdad and some central governorates for the year 2022

Nagham R. Muhammad^{1,2}, Firas I. Rhaim³, and Osama K. Jabara⁴

¹Department of Agricultural Economics and Extension, College of Tikrit, Tikrit University, Iraq

²Department of Soil Sciences and Water Resources, College of Agriculture, Al-Qadisiyah University Iraq

³Department of Agricultural Economics and Extension, College of Tikrit, Tikrit University, Iraq

⁴Department of Agricultural Economics, College of Agricultural Engineering Science, University of Baghdad, Iraq

Correspondence email: Nagham.mohmmad@qu.edu.iq

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ABSTRACT

The objective of this research is to quantify profit margins, marketing expenses, and the effectiveness of marketing strategies for table eggs in the central governorates of Iraq. This is achieved through a questionnaire targeting three distinct tiers within the marketing process: the product dealer, wholesaler, and retailer. The findings revealed that approximately 66.25% of the consumer's payment is allocated to the producer, which serves as a key metric for assessing marketing effectiveness. The producer's revenues were about 1,443.24 dinars per carton of 30 eggs. The wholesaler earned around 342 dinars per carton, while the retailer's profits amounted to approximately 275 dinars per carton. These figures highlight the significance of the marketing margin components between the producer and the consumer. Retailer marketing expenses were prioritized, constituting about 36.97% of the marketing margin. The second largest expense was related to the product itself, accounting for around 22.09%. Wholesaler earnings contributed approximately 15.32%, while retailer earnings were about 12.32%. Transportation expenses, which are crucial for logistics, made up roughly 0.80% of the marketing margin. The marketing efficiency of table eggs produced at scale was approximately 65%, while the second measure accounted for 56%. This indicates a high level of marketing efficiency for table eggs in the region. The study also proposed solutions, emphasizing the need for proper transportation mechanisms, including cooling systems, to minimize damage and loss during marketing. Additionally, meeting agricultural marketing and production needs with reasonable pricing and high quality is vital for reducing production and marketing costs.

هيكل تكاليف الإنتاج والتسويقية والمؤشرات الاقتصادية لبيض المائدة في بغداد وبعض المحافظات الوسطى لعام 2022

*نغم رحمن محمد ، فراس ارحيم ابراهيم وأسامة كاظم جبارة
كلية الزراعة / جامعة القادسية / العراق
كلية الزراعة / جامعة تكريت / العراق
كلية علوم الهندسة الزراعية / جامعة بغداد/العراق

المستخلص

هدف البحث لقياس الهوامش والتكاليف التسويقية والكفاءة التسويقية لبيض المائدة في المحافظات الوسطى في العراق من خلال استمارة الاستبانة للمستويات التسويقية الثلاث في المسلك التسويقي لتاجر المنتج وتاجر الجملة وتاجر التجزئة . وتبين من نتائج البحث ان نصيب المنتج مما يدفعه المستهلك قد بلغ نحو (66.25%) ويعد من مؤشرات الكفاءة التسويقية المرتفعة ، أما ارباح المنتج كانت قد بلغت نحو (1443.24 دينار / طبقة) بالإضافة الى ارباح تاجر الجملة فقد بلغت نحو (342 دينار / طبقة) و ارباح تاجر التجزئة بلغت نحو (275 دينار / طبقة) من تقدير الأهمية النسبية لبند الهامش التسويقي بين المنتج والمستهلك كما تبين أن الأهمية النسبية لتكاليف التسويقية لتاجر التجزئة قد جاءت بالمرتبة الاولى فقد بلغت نحو (36.97%) من بنود الهامش التسويقي بين المنتج والمستهلك ، أما المرتبة الثانية كانت من نصيب الأهمية النسبية لتكاليف التسويقية التي يتحملها المنتج وقد بلغت نحو (22.09%) من بنود الهامش التسويقي بين المنتج والمستهلك وتليها المرتبة الثالثة التي كانت من نصيب الأهمية النسبية لارباح تاجر الجملة وقد بلغت نحو (15.32%) من بنود الهامش التسويقي بين المنتج والمستهلك تليها الأهمية النسبية للأرباح تاجر التجزئة والتي بلغت نحو (12.32%) والمرتبة الاخيرة كانت للأهمية النسبية لتكاليف النقل وقد بلغت نحو (0.80%) من بنود الهامش التسويقي بين المنتج والمستهلك ، أما الكفاءة التسويقية لبيض المائدة المنتج حسب المقياس (1) بلغ نحو (65%) والمقياس الثاني كان قد بلغ نحو (56%) مما دل على ارتفاع الكفاءة التسويقية لبيض المائدة المنتج في المحافظات الوسطى بين المقياسين وتوصل البحث الى العديد من التوصيات والتي من أهمها توفير وسائل نقل البيض المائدة من أماكن الإنتاج الى أماكن التسويق وان تكون مزودة بوسائل التبريد لتقليل نسبة التلف والفقد التي تحدث خلال الخدمات التسويقية والعمل على توفير مستلزمات التسويق الزراعي ومستلزمات الانتاج ان تكون ذات اسعار مناسبة ونوعيات جيدة لتقليل تكاليف الانتاج والتسويق الزراعي .

الكلمات المفتاحية : الكفاءة التسويقية ، الهوامش التسويقية ، التكاليف التسويقية

INTRODUCTION

Poultry initiatives in Iraq have seen many phases of growth and decay. The majority of poultry ventures, particularly those focused on table eggs, ceased operations after 1990 due to the implementation of an economic boycott on Iraq. The poultry sector saw repercussions following 2003. The quantity of hatcheries and their available capacity saw a reduction of 90%. The broiler breeding fields significantly declined their functional capability, with a loss of 70%. The incidence of massacres was reduced by 81%. The decline in hatching and table eggs output surpassed 82% for both categories (Al-Badawi, 2016). The Ministry of Agriculture has implemented a program to restore the poultry sector to minimize the substantial harm it has suffered. The objective of this certification was to offer chicken goods to consumers at affordable costs while also assuring profitable returns for farmers by offering competitively priced feed and hatching eggs. The progress in the poultry industry was short-lived, as it saw a collapse and subsequent decline during the occupation of Iraq in 2003.

The majority of poultry fields were plundered, with most of their contents being stolen, resulting in the cessation of production for most projects. Furthermore, the official policy facilitated the expansion of Iraqi markets to include chicken goods, namely table eggs. This resulted in substantial detriment to farmers (Agha, 2014). Efficient marketing activities are crucial for the distribution of table eggs, guaranteeing that consumers receive eggs of high

quality at affordable costs. It is necessary to analyze the marketing effectiveness and constituents of table eggs manufactured by private enterprises (Mustafa, 2016). The protein derived from table eggs is considered one of the most superior forms of protein. Therefore, it is crucial to have effective marketing strategies to distribute table eggs, ensuring they are delivered to consumers in optimal condition and at affordable costs. The marketing philosophy is founded around the objective of fulfilling the needs and wants of consumers. The necessity to discover a marketing system arose due to the advent of agricultural specialization and the establishment of interdependent agricultural and industrial regions.

The marketing of table eggs is regarded as a crucial phase because of the wide range and diversity of marketing techniques involved. These factors impact marketing expenses, consumer pricing, product excellence, and trash volume. Hence, it is imperative to thoroughly examine the entire spectrum of the local marketing process for farm-produced table eggs. Ensuring competitiveness in the export of table eggs is challenging due to the inadequate commodity supply (Al-Hawari, 2016). conducted an analytical study on the imports of economic shocks on Iraq . Agricultural imports , Discussion (Madlul , 2022).

MATERIALS AND METHODS

Primary data: Obtained from a questionnaire designed for the different marketing levels (producer - wholesaler - retailer). Primary data was collected through direct meetings and direct field visits to owners of fields producing table eggs, wholesalers, and retailers for the year (2022). Data was collected from producers using the comprehensive inventory method, whose number reached (170) producers in the central Iraqi governorates. The data was also collected using a comprehensive inventory method at the level of wholesale merchants, whose number reached about (70) merchants in the wholesale market in the Jamila area in Baghdad and the rest of the central governorates. As for the retailer, it collected (50) questionnaires distributed in the regions of the central governorates. Quantitative and descriptive analysis methods and mathematical formulas were also used to reach results that serve the research objectives. Through numerous studies to estimate margins, marketing costs, and marketing efficiency, a set of conclusions and recommendations were reached to achieve the research objectives.

Marketing margins

The importance of studying the marketing margin is because, through it, it is possible to determine the share of both the producer and the intermediaries in the price paid by the consumer and the size of the marketing margin depends on several factors, the most important of which are: (Al-Azhari, 2001).

1. The extent of production's multiple stages until it reaches the final consumer.
2. The costs of the marketing process include storage, refrigeration, preservation and transportation expenses.

Methods of measuring marketing margins

To measure the marketing margin, it is necessary to know the payments to the various marketing bodies for their marketing services provided to consumers, i.e. the costs and profits of

the services necessary to deliver agricultural products to the consumer in the place, time, and in the form that the consumer desires. These are called marketing margins (Al-Dabbagh, 2014).

The specialized efficiency reflects the ability of the farm to use the sieves in optimal proportions according to the prices of these sieves and the technology used. (Manar S.Hamad&Maher.M.Shabib,2024).

The development of marketing margins on farms (Al-Diouhi, 2002).

1. **Absolute marketing margins:** - Defined as the difference between the purchase and selling prices, expressed in monetary units such as the dinar. Absolute marketing margins = selling price – purchasing price.
2. **Relative selling marketing margins:** - (Relative selling marketing margins = consumer price – product price / consumer price x 100)
3. **Purchasing relative marketing margins:** - (Purchasing relative marketing margins = consumer price – product price/product price x 100).

Marketing costs

It determines the portion of the price the ultimate customer pays that is attributed to the product. Elevated marketing expenses can indicate a decline in marketing efficacy, whereas the converse holds true if such expenses diminish. (Moussa, 1998).

Marketing margins = marketing costs + profits, marketing margins = marketing costs - losses

Thus, marketing costs can be distinguished (Yassin, 2008).

- **Marketing fixed costs:** - These are the costs that do not change in total about the number of marketed units and are not usually related to the quantity of goods during their marketing journey.(Hassa,Thamer Zanzal,2022)
- **Marketing variable costs:** These include those costs related to the quantity of goods, and they are costs that increase with the increase in marketed production. From them, the average variable cost per marketed unit is calculated.

Marketing efficiency

Marketing efficiency is measured using several criteria, the most important of which is the marketing margins for both the wholesaler and the retailer during the different stages of the market.

Methods of measuring marketing efficiency

Economic metrics and indicators are studied to judge the efficiency of the marketing system for agricultural products and measure the consumer benefit of the outputs of marketing operations. Some measures of marketing efficiency (Ismail, 2002).

Marketing value added: Due to the difficulty of measuring consumer benefit, it must be linked to some measurements, such as marketing value-added, which can be measured by the difference between the prices charged by the primary producer and the prices paid by the final consumer.(Mdloul, 2022) .

Price spread and the farmer's share of consumer payments: The decrease in the farmer's share prompts the consumer to show the inefficiency of the marketing system. The reason is not providing a direct measure that can be used to measure marketing efficiency.(Mahjoub, Aladdin,2021) .

Using mathematical equations to measure the efficiency of the marketing system

The efficiency of the marketing system can be measured by comparing the ratio between the total costs and the marketing costs using the following scale .(Badawi , Nour Latif ,2015) : -

$100 \left(\frac{\text{marketing costs in total}}{\text{marketing of the product (productivity + marketing) in total costs}} \right) - 100 = \text{marketing efficiency.}$

Economic structure of the market

Marketing and markets are not the same thing and must be distinguished. Marketing includes all the legal, physical, and economic services necessary to make products from the farm available to consumers in the form and amount desired by consumers (Rajab, 2016).

Facilitating marketing functions

It facilitates the performance of marketing functions so that other (reciprocal) marketing functions are not accomplished (Naima, 2019).

The risks facing those responsible for agricultural marketing functions are divided into:

- **Physical risks:** This type of risk occurs through the sudden occurrence of changes in the nature of the marketed goods, such as damage, fire, exposure to theft, or loss. Market Risks: This type of risk results from changes in marketed prices.(Rahim,2021).
- **Manufacturing functions:** - Using chemicals to preserve the commodity through manufacturing prevents the surplus from being damaged. Thus, providing goods for consumption for extended periods also leads to price stability to balance demand and supply, increasing total consumption (Khamra, 2016).

Elements of the Agricultural Marketing Mix

There are three levels of produced goods (Clash, 2017):

- 1- The essence of the product: It means the sum of the benefits that the product provides to satisfy the needs and desires of the consumer.
- 2- Tangible product: This means tangible forms of marketing, including packaging, shape, quality, and other distinctive characteristics.
- 3- Product augmentation services: These include installation, warranty, after-sales service, delivery, and installation sales.

RESULTS AND DISCUSSION

The fixed and variable costs of table eggs produced in the producers' fields were studied through data obtained from the producers' questionnaire to highlight the importance of each item of these costs. The variable costs were divided into the costs of production requirements, which include (fodder, bedding, medicines and vaccines, rented labor, fuel and oils, water, and electricity). As for the fixed costs, they were divided into (wages for family work and field rent). Through the data, production costs were extracted for one layer containing (30) eggs. The reason for extracting the costs per layer, not per egg, ton, or kg. It deals with locally produced eggs for producers, wholesalers, and retailers. It is the box that contains (12) egg cartons (30) eggs. As for the consumer, he is dealt with one egg carton that contains (30) eggs. Table (1) shows the total costs of production.

Table (1) The items of fixed production costs for table eggs and their relative importance

Items	value in dinars (for one yera)	C
Field rent	845.9	99.8
Family business	1.18	0.13
the total	847.08	100

Source: - Collected by the researcher based on data from the product questionnaire

From the data in the table above, the rent for the poultry field ranked first among the items of fixed production costs. The relative importance reached about (99.8%), while family work ranked last among the items of fixed production costs. The relative importance reached about (0.13) due to the absence of field owners from work and dependence on foreign workers.

Table (2) Variable production cost items for table eggs and their relative importance

items	(Value in dinars (per layer	% Relative importance
Fodder	552.92	32.2
Cost of chicks	265.75	15.48
Hired work	341.07	19.86
Maintenance	143.58	8.36
Fuel and oils	138.13	8.04
Medicines and vaccine	111.11	6.47
The mattress	59.94	3.49
electricity	51.20	2.98
water	52.98	3.08
total	1716.68	100

Source: - Collected by the researcher based on data from the product questionnaire

From the data in the table above, the variable production cost of feed ranked first. Its percentage amounted to about (32.2%) of the variable production cost items. Rented work comes next, with a percentage estimated at (19.86%). Followed by the cost of chicks (15.48%). As for maintenance, fuel, and oils, their percentages reached (8.36% and 8.04%), respectively. As for litter and water, their percentages were about (3.49% and 3.08%), respectively. The lowest percentage was for electricity, with a percentage of about (2.98%) due to the lack of electricity supplied to poultry fields and reliance on generators.

Table (3) Items of the total production costs of table eggs and their relative importance

Tems	Value in dinars (for one layer)	% Relative importance
Fixed production cost items	847.08	33.04
Variable production cost items	1716.68	66.95
total	2563.76	100

Source: Collected by the researcher based on tabular data for fixed and variable cost items

From the data in the table above, the total production cost of one egg carton amounted to about (2563.76) layers/dinar. The variable cost items came in first place. It amounted to about (66.95%) of the total costs. The last place was for fixed production costs items, which amounted to about (33.04%) of the total total costs. The poultry fields suffered a major setback after 2003 due to the cessation of financial and technical support and the accompanying exposure to the Iraqi market. In addition to the dumping policy, high production costs, and weak legislation and laws that protect the national product. Then, this production developed relatively to restore government support, albeit in a limited way, through what was known as the Iraqi government's agricultural initiative 2008 and an increase in the amounts allocated for lending by the Agricultural Cooperative Bank.

1- The reality of the experience of the study sample of poultry farm owners studied in the central governorates for the year 2022.

Years of experience are one of the important indicators for improving the performance of field owners in order to maximize production within a certain cost or reduce the cost within a certain production quantity. It was found that (44.11%) of the categories of poultry farm owners had years of experience from (1-5) years, while another category of poultry farm owners reached (45.88%), which represents the highest level of the study sample, and they had experience from (6- 10) years, and therefore the study was characterized by good experience, and this is what appeared from its good productivity. As for the categories of poultry field owners who have experience from (11 - 15) years, their percentage was (7.05%). As for the last category, which is (16 or more) years, their percentage was the lowest. It amounted to about (2.94%), which represents the lowest limit. As shown in Table (4)

Table (4) Years of experience for the study sample of poultry farm owners in the central governorates for the year 2022

Years of Experience	Preparing producer categories for poultry field owners	Relative importance %
5 - 1	75	44.11
10 - 6	78	45.88
15 – 11	12	7.05
And more 16	5	2.94
The total	170	100

Source: Prepared by the researcher based on the data of the questionnaire form (product questionnaire).

We note from Questionnaire No. (2) the wholesale markets in the central governorates (Baghdad, Babylon, Diwaniyah, Holy Karbala, Al-Muthanna, Wasit, Al-Najaf Al-Ashraf, and Baqubah). Which included main and sub-markets. Table (5) indicates the preparation of questionnaire forms for the study sample, in which the main relative importance was greater in Baghdad Governorate and then the sub-markets in the other governorates.

Table (5). Number of wholesaler questionnaire forms collected from some areas of the central governorates for the year 2022.

Name of the governorate	Number of questionnaire form	Relative importance%
Baghdad	31	38.75
Babylon	12	15
Diwaniyah	11	13.75
Holy Karbala	9	11.25
Double	2	2.5
Wasit	3	3.75
Al-Najaf Al-Ashraf	3	3.75
Baqubah	9	11.25
The total	80	100

Source: - Collected by the researcher based on the data of the questionnaire form (wholesaler)

It is observed from the questionnaire operations for the markets of retailers in the central governorates, which included the markets of the districts and districts of Baghdad Governorate, and the rest of the governorates, as Table (6) indicates the preparation of questionnaire forms for the study sample, in which the relative importance was according to each governorate. We note (34%) in Al-Diwaniyah Governorate. It was followed by Baghdad Governorate with a percentage of (26%), and the rest of the governorates (Al-Najaf Al-Ashraf, Babylon, Al-Muthanna, Holy Karbala, and Baqubah) the percentages reached (6%, 4%, 4%, 3%, 2%, 1%) respectively and according to the table) 6).

Table (6). Number of retailer questionnaires collected from some areas of the central governorates for the year 2022.

Relative importance%	Number of questionnaire form	Name of the governorate	C
26	13	Baghdad	1
8	4	Babylon	2
34	17	Diwaniyah	3
4	2	Holy Karbala	4
8	4	Double	5
6	3	Wasit	6
12	6	Al-Najaf Al-Ashraf	7
2	1	Baqubah	8
100	50	The total	

Source: - Collected by the researcher based on the data of the questionnaire form (3)

Second: Economic indicators of the marketing efficiency of table eggs in the central governorates

1- **Prices at the product level:** - Through the product questionnaire, it was revealed that the prices for table eggs per carton are as follows: -

- A. Product prices at the farm gate amounted to about (4007) dinars/carton during the data collection period.
- B. The price of the product in the wholesale market (the price at which the egg producer is sold to the wholesaler). The average amounted to about (4500) dinars/carton during the data collection period.

The price of the product at the farm gate = the prices of the product in the wholesale markets - the production and marketing costs borne by the producer

$$(493) - (4500) = (4007) \text{ Dinar/ layers}$$

2- Prices at the wholesaler level: Through the questionnaire form for wholesalers (central governorates), it was found that the average price for table eggs reached about (4900) dinars/carton during the data collection period.

3- Prices at the retailer (consumer) level: - As for retail prices, through the questionnaire form for retailers, it was found that the average prices for table eggs at the retailer (consumer) level amounted to about (6000) dinars/carton during the data collection period shown. In the following table:-

Table (7) Average prices at marketing levels KD/class

Marketing levels	the prices
Product price at field level	4007
The price of the product in the wholesale market	4500
Wholesaler	4900
Retailer	6000

Source: Collected by the researcher based on the questionnaire form (producer, wholesaler, and retailer).

Distribution of marketing shares for the producer, wholesaler and retailer

The marketing shares for the different marketing levels are extracted from the data in table (5) as follows:

- 1- The producer's share of the consumer's dinar: The producer's share of the consumer's dinar is estimated based on the prices of the product's price level at the farm gate and the wholesale market, as follows: The wholesaler's share of the consumer's dinar: Through the data in table (5), it was found that the merchant's share of The average total amount of dinars consumed for table eggs reached (6.66%), as it was calculated according to the following formula:-

A- Farm section prices based on consumer dinars of product share = (dinars/class farm section on product prices)/(class/dinars retail prices) x 100

$$= 4007/6000 \times 100 = 66.78\%$$

B-Wholesale market in the product price based on the consumer dinar of the product share = (dinar/tier wholesale market in product prices)/(tier/dinar retail prices) x 100

$$= (4500)/(6000) \times 100 = 75\%$$

- 2- The retailer's share of the consumer's dinar: - As for the retailer's share of the consumer's dinar for table eggs, the average was about (18.33), which was calculated according to the following formula:-

Wholesale dealer share=(JD/stratified wholesale prices - JD/tier product prices)/(JD/stratretail prices) x 100

$$= (4900-4500)/6000 \times 100 = 6.66\%$$

- 3- The intermediaries' share of the consumer's dinar = the wholesaler's share + the retailer's share

Wholesaler dealer share = (JD/stratified retail prices - JD/stratified wholesale prices)/(JD/stratified retail prices) x 100

$$= (6000-4900)/6000 \times 100 = 18.33\%$$

4- The intermediaries' share of the consumer's dinar = the wholesaler's share + the retailer's share

$$\%18.33 + \%6.6 = 24.99\%$$

Table (8) Distribution of shares between the producer, wholesaler and retailer of consumer dinars

Distribution of shares	% Relative importance
Producer share based on farmgate price	66.78
Product share based on price in the wholesale market	75
Wholesaler's share	6.66
Retailer's share	24.99

Source:- Collected by the researcher based on the questionnaire form for the producer, wholesaler, and retailer.

The data in the table above shows that the share of the product has increased, reaching about (66.25%). This pays the consumer on a farm-gate basis. While the share of the product based on price in the wholesale market amounted to about (75%). In both cases, the producer's share of the consumer's pay increased. This is one of the indicators of the high marketing efficiency of marketed table eggs. The study sample goes through a marketing path, starting with the producer, then the wholesaler and the retailer until it reaches the final consumer. It is noted that the study sample is sold directly from the producer to the final consumer. Consequently, marketing efficiency increases due to the higher share of the product the consumer pays.

Second: Estimating the marketing margins between the marketing stages for table eggs in the central governorates of Iraq for 2022.

Marketing margin is defined as the difference between the price paid by the final consumer and the price received by the producer. In other words, it is the difference between the retail price (the consumer) and the absolute price received by the producer or in its relative form. Therefore, the marketing margins for a specific commodity include the costs of performing marketing services such as transportation, storage, sorting, grading, packaging, selling (commission), transfer, etc., in addition to the profits obtained by the intermediaries (Al-Faraji, 2015, p. 153) and include: -

1- The marketing margin between the wholesaler and producer stages (at the field level)

Regarding the absolute marketing margin between the two stages, starting with the producer and wholesaler of table eggs, the average amounted to about (925) dinars/carton, as it was calculated according to the following formula:

The absolute marketing margin between the wholesaler's price and the producer (field level) = wholesale price - product price.

As for the relative marketing margin for this stage, it amounted to about (14.88%), as it was calculated according to the following formula: -

Relative marketing margin = (JD/stratified wholesale prices - JD/product tier prices)/(JD/retail tier prices) x 100

$$= (4900-4007)/(6000) \times 100 = 14.88\%$$

- 2- **The marketing margin between the stages of the retailer and the wholesaler:** - The average absolute marketing margin between the stages of the retailer and the wholesaler was about (1100) dinars/carton, which was calculated according to the following formula.

The absolute marketing margin between retail and wholesale price = retail price – wholesale price

The average relative marketing margin between the stages of retailer and wholesaler amounted to about (18.33%) dinars per carton, as it was calculated according to the following formula: -

$$\text{Nabisi Marketing Margin} = (\text{JD/stratified retail prices} - \text{JD/stratified wholesale prices}) / (\text{JD/stratified retail prices}) \times 100$$

$$= (6000-4900)/6000 \times 100 = 18.33\%$$

- 3- **The marketing margin between the retailer and producer stages averaged about (1993) dinars/carton, as it was calculated according to the following formula:**

The absolute marketing margin between the retail price and the product = retail price – product price

$$\text{Dinar/ lager} = 4007-6000 = 1993\%$$

The average relative marketing margin between the retailer and producer stages reached about (33.75%), which was calculated according to the following formula:

$$\text{Wholesale dealer share} = (\text{JD/stratified product prices} - \text{JD/stratified retail prices}) / (\text{JD/stratified retail prices}) \times 100$$

$$= (6000-3975)/6000 \times 100 = 33.21\%$$

Table (9) Marketing margins between the different stages of table eggs in the central governorates: one dinar/class

Marketing margins					
Wholesale - product		Segmentation - sentence		Retail - product	
Absolute dinar/class	relative	Absolute dinar/class	relative	Absolute dinar/class	relative
893	15.41%	1100	18.33%	1993	33.21%

Source: Collected by the researcher based on previous mathematical information and rates
The absolute marketing margin between the retail price and the product = retail price – product price

The average relative marketing margin between the retailer and producer stages reached about (33.75%), which was calculated according to the following formula:

Table (6) shows the calculations for the relative importance of marketing margins between different marketing levels. The average marketing margin between the producer and the wholesaler was about (925) dinars/carton, and its relative importance was about (15.41%) of the retail price. The marketing margin between the wholesaler and the retailer amounted to about (1,100) dinars/carton, with a relative importance of about (18.33%) of the retail price. As for the marketing margin between the producer and the retailer, the average amounted to about (2025) dinars/carton, with a relative importance of about (33.75%) of the retail price.

Third: Estimating the marketing costs of table eggs in the central governorates during the study period.

The marketing paths that table eggs pass through, starting from the producer until they reach the final consumer, are (producer → wholesaler → retailer → consumer). Through this approach, several marketing operations are conducted on table eggs. There are several costs for these operations that are borne by those who carry out them during these marketing methods, as follows: -

The first level: The marketing costs borne by the producer between the producer and the wholesale market

1- Packing and grading: - One carton in which the eggs are placed contains (30) eggs. Eggs are placed in boxes, each box containing (12) cartons. The average costs for packaging and grading, based on the data obtained from the product questionnaire, were as follows:

- a. The average cost of one box was about (41.69) dinars/one carton.
- b. The average cost of empty dishes was about (69.59) dinars per carton.
- c. **The cost of the tapes:** - The price of the tapes reached (1500) dinars after placing the cartons inside the boxes. It is closed manually using adhesive tapes, sufficient for 40 boxes. Thus, the average amounted to about (6.12) dinars/carton.
- d. **The worker's wage:** - The wage of the one worker who collects the eggs in the boxes is estimated at (550,000) dinars/month; thus, the average wage becomes about (172.97) dinars/carton.
- e. **Missing quantities:** Some egg damage occurs from production fields to wholesale markets during the packing and grading operations. It is estimated at approximately two cartons during transportation. Thus, the average loss and damage amounted to approximately (9.16) dinars/carton during the product questionnaire.

Table (10) Paragraphs of packing and grading costs for table eggs at the product level in the central governorates: one dinar/layer

Cost paragraphs Packing and staging	Value in dinars	Relative importance%
Fund cost	41.69	13.91
Cost of dishes	69.59	23.23
Cost of tapes	6.12	2.04
Cost of workers	172.97	57.74
The amount of loss and damage during transportation	9.16	3.05
the total	299.53	100

Source: Collected by the researcher based on the product questionnaire

2- Location transformation costs: Location transformation costs include the transfer of eggs from the producer to the wholesale market, which includes the following:

- A. Loading cost: The product questionnaire found that the average loading cost was about (1500) dinars per box, while for one carton the average was about (88.8) dinars/carton.

- B. Transportation cost: - Through the product questionnaire, the transportation cost for one carton was estimated at approximately (64.09) dinars/carton. This included transportation fees for the distance travelled, with a minimum of (20,000) dinars and a maximum of (80,000).
- C. The value of the lost quantity: - The average cost of the lost and damaged quantities of table eggs during transportation operations from the production fields to the wholesale market and for one carton in each operation was approximately (4.13) dinars/carton from the producer to the wholesale market, which the producer bears.

Table (11) Spatial transformation paragraphs for one layer of table eggs KD/layer.

Spatial transformation paragraphs	Value in dinars	Relative importance%
Loading and unloading cost	125	64.69
Transportation cost	64.09	33.16
The value of the lost quantity	4.13	2.13
the total	193.22	100

Source: Collected by the researcher based on the product questionnaire

Total marketing costs = total spatial conversion costs + total fatigue and gradual costs incurred by the product. $299.53 + 193.22 = 492.75 \approx 493$ Dinar/ lager

The second level: Marketing costs between wholesale and retail markets

Marketing costs mean the costs incurred by the wholesaler in the wholesale market and the commission on the product price. It is considered a percentage of the selling price, which is estimated at approximately (400) dinars/carton. In addition to the loading fee, which is estimated at approximately (18) dinars per carton. As for the marketing costs borne by the wholesaler, which include a group of items obtained from the wholesaler's questionnaire, shows that the average cost of marketing operations borne by the wholesaler amounted to about (287) dinars/carton. As for the quantities sold daily, the average amounted to about (7000) boxes. As for the average costs of marketing operations during a month in wholesale stores, they amounted to about (2,010,000) dinars, distributed among the costs previously mentioned. Thus, the average monthly marketing operations costs borne by the wholesaler in the wholesale market were calculated according to the following formula:

Wholesaler level on marketing operations costs average = (marketing operations costs average)/(quantities sold average)

=(other wages + workers wages + electricity wages + worker wages + shop rent)/(average quantities sold)

= (850000 + 550000 + 50000 + 200000 + 360000) / 7000

=2010000/7000 = 287 cans/dinar = 287/12= 23.92 ≈24 layers/dinar

Total marketing costs borne by the wholesaler = loading fees + transportation fees + marketing operations costs borne by the wholesaler.

The third level: Marketing costs between the retail market and the consumer

The retailer purchases table eggs from the wholesale market and sells to the consumer. The retailer bears these costs. It includes a set of items obtained from the retailer's questionnaire form from several places in the central governorates (retail sales). The costs incurred by the retailer in his store include (rent, water, electricity, workers' wages, and other fees). The average costs of marketing operations at the retailer level amounted to about (825) dinars/carton. The average cost of marketing operations during one month amounted to about (990,218.13) dinars. As for the average quantities sold per month, it amounted to about (100) cartons, as they were calculated according to the following formula: -

$$\text{Retail Dealer Level on Marketing Operations Average Costs} = (\text{Marketing Operations Average Costs}) / (\text{Average Quantities Sold})$$

$$\text{Other wages} + \text{electricity wages} + \text{worker wages} + \text{shop rent} / \text{average quantities sold}$$

$$= 981629 + 52.93 + 25.09 + 8511.11 / 100$$

$$= 990218.13 / 100 = 9902 \text{ boxes/dinar}$$

$$= 9902 / 12 = 825 \text{ layers/dinar borne by the retailer}$$

Extract the profits of the producer, wholesaler and retailer.

It is necessary to know the profits of producers and intermediaries within marketing routes. The higher the profits for producers compared to the profits of intermediaries while maintaining a certain level of marketing services, the more this indicates the efficiency of the marketing system and vice versa. The lower the producers' profits compared to intermediaries' profits, the more this indicates the inefficiency of the marketing system. Consequently, there were problems in the marketing system, and the profits of producers and intermediaries were extracted through the results obtained, as follows: -

$$\text{Product profits} = \text{product price (at the field level)} - \text{production costs}$$

$$= 4007 - 2563.76 = 1443.24 \text{ dinar / layers}$$

$$\text{Wholesaler profits} = \text{wholesale price} - (\text{product price in the wholesale market} - \text{total costs borne by the wholesaler})$$

$$= 4900 - (4500 + 58) = 4900 - 558 = 342 \text{ layers / dinar}$$

$$\text{3- Retailer profits} = \text{selling price} - (\text{wholesale price} + \text{total marketing costs borne by the retailer})$$

$$= 6000 - (4900 + 825) = 6000 - 5725 = 275 \text{ layers/dinar}$$

Table (12) Distribution of profits between the producer, wholesaler and retailer KD/layer

Distribution of profits	Value in dinars	Relative importance%
Product profits	1443.24	70.05
Wholesaler profits	342	16.86
Retailer profits	275	13.56
the total	2060.24	100

Source: Prepared by the researcher based on the questionnaire form for the producer, wholesaler, and retailer

- 1- Product profits = product price (at the field level) - production costs.
- 2- Wholesaler profits = wholesale price - (product price in the wholesale market - total costs borne by the wholesaler).
- 3- Retailer profits = selling price - (wholesale price + total marketing costs the retailer bears).

From the data in the table above, it was found that the profits of the producer of table eggs increased, which amounted to about (69.57%) of the total profits, which amounted to about (2028) dinars/carton. As for the average profits of the wholesaler, it amounted to about (16.86%) of the total profits. As for the retailer, average profits reached about (13.56%) of the total profits. Thus, the high producer profits compared to the middlemen's profits are evidence of the efficiency of the prevailing marketing system for table eggs in the central governorates. Thus encouraging producers to continue the production process.

Estimating the relative importance of marketing margin items between product price and consumer price

Estimating the relative importance of marketing margin items is an important calculation between different marketing operations levels to know which items are more important and which represent the highest percentage of marketing margins. Thus, we must study the reasons for the increase and seek to reduce them, considering maintaining the level of marketing services without change.

The relative importance of the marketing margin items between the product price (at the field level) and the consumer price was estimated according to the following formula:

- 1- Transportation costs relative importance = $(\text{transportation costs})/(\text{absolute marketing margin}) \times 100$
- 2- The importance of the product borne by the marketing costs = $\text{the product's marketing costs} / \text{the absolute marketing margin} \times 100$
- 3- The relative importance of the marketing costs borne by the wholesaler = $(\text{Wholesale dealer marketing costs})/(\text{absolute marketing margin}) \times 100$
- 4- The relative importance of the retailer's marketing costs = $(\text{retailer marketing costs})/(\text{absolute marketing margin}) \times 100$
- 5- The relative importance of wholesaler profits = $(\text{Wholesale dealer profits})/(\text{Absolute marketing margin}) \times 100$
- 6- - The relative importance of retail dealer profits = $(\text{retail dealer profits})/(\text{absolute marketing margin}) \times 100$

The relative importance of marketing margin items was extracted through the data used in the previous tables between the product price and the consumer price, as in the following table: -

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Table (13) The relative importance of marketing margin items between the product price and the consumer price

items	Value JD / Relative	Importance Layer%
Marketing costs incurred by the product	493	22.9
Marketing costs for the wholesaler	278	12.46
Retailer's marketing costs	825	36.97
transportation fees	18	0.80
Profits for the wholesaler	324	15.32
Profits for the retailer	275	12.32
the total	2231	100

Source: Collected by the researcher based on the results and previous formulas

The data in the table above showed that the relative importance of the retailer's marketing costs ranked first with a rate of (36.97%). The second place was the marketing costs borne by the producer, which amounted to an estimated percentage of (22.09%) of the items for the marketing margin between the producer and the consumer. Followed by the third place is the relative importance of the wholesaler's profits, with an estimated rate of (15.32%). The fourth place is the relative importance of the wholesaler's marketing costs, with an estimated rate of (12.46%). Followed by profits for the retailer at an estimated rate of (12.32%). Finally, the relative importance of transportation costs is estimated at approximately (0.80%) of the marketing margin items.

Fourth: Measuring the marketing efficiency of table eggs produced in the central governorates for the year 2022

Measuring marketing efficiency is one of the final stages of studying the efficiency of the marketing system for goods. There are a number of indicators and methods for measuring marketing efficiency, which were previously discussed in the study's theoretical framework (Chapter Two). We will rely on the use of mathematical equations to measure this efficiency through the results obtained, which are represented by production costs, marketing costs, and marketing margins for table eggs according to the following formulas: -

1- Measuring the marketing efficiency of table eggs for the study sample through the relationship between the total marketing costs and the total costs (productivity and marketing) of the marketed product.

Through this measure, marketing margins are not included. Thus, the law becomes composed of marketing and production costs according to the following formula:

$$\text{Marketing efficiency} = 100 - \{((\text{marketing costs total})/(\text{productivity, costs, and marketing}))\} \times 100$$

The result shows an increase in the marketing efficiency of this measure based on the indicators used, which are the marketing and production costs of the marketed product.

$$\text{Marketing efficiency} = 100 - \left\{ \left(\frac{\text{marketing costs total}}{\text{productivity, costs, and marketing}} \right) \right\} \times 100$$

$$= 100 - \left(\frac{1376}{2563.76} \right) \times 100 = 65\%$$

2- Measuring marketing efficiency through another measure using marketing margins and production costs

In this measure, marketing margins were introduced instead of marketing costs. As the marketing margin = marketing costs + profits and losses, it is expected that this indicator will decrease due to the introduction of profits according to the following formula: -

$$\text{Marketing efficiency} = 100 - \left\{ \left(\frac{\text{marketing margins}}{\text{productivity, costs, and margins}} \right) \right\} \times 100$$

$$= \left(\frac{1993}{1993 + 2563.76} \right) \times 100 - 100 = 56\%$$

The results showed a decrease in marketing efficiency within this measure compared to the previous measure, which amounted to about (65%). Thus, the more intermediaries' profits increase, the more marketing efficiency decreases.

Table (14) Measuring the marketing efficiency of table eggs in the central governorates for the year 2022)

Marketing efficiency	percentage %
Measuring marketing efficiency (1)	65
Measuring marketing efficiency (2)	56

Source: Collected by the researcher based on the results and previous formula

It was shown through the results obtained to measure marketing efficiency that there is an increase in measuring the marketing efficiency of table eggs produced in the central governorates for the year 2022 (all sources show that whenever the marketing efficiency rises above 50%, it indicates the efficiency of the marketing system for the goods studied). This was confirmed when calculating the producer's share of the consumer's dinar, which was high, in addition to the increase in the producer's share of what the consumer pays. This means higher marketing efficiency. Thus, we deny the research hypothesis, which states that marketing efficiency decreases and that the increase in marketing efficiency is due to decreased profits for intermediaries.

CONCLUSIONS

- 1- A study of the marketing margin showed that the relative importance of the absolute marketing margin between the product price and the retail price represents a percentage of about (33.75%) compared to the marketing margins for agricultural and vegetable commodities. It is considered a low percentage due to the low profits of intermediaries (wholesale and individual). This is due to the characteristics that characterize animal production.
- 2- An increase in the producer's share of the consumer's dinar. It reached about (66.25%). This indicates an increase in the marketing efficiency of table egg projects in the central governorates within the producer share index. This is paid by the consumer, as the higher the share of the product the consumer pays indicates the efficiency of the marketing system.
- 3- The average marketing efficiency of table eggs in the central governorates according to the laws used to measure them reached about (65%) according to the first scale and about (56%) according to the second scale. We conclude from this that the marketing efficiency

of marketing table eggs in The central governorates of the study sample. This indicates the efficiency of the marketing system for table eggs in the central governorates of the study sample.

- 4- From the results obtained by measuring the relative importance of the marketing margin items, it was found that the relative importance of the marketing costs borne by the product amounted to approximately (22.09%) of the marketing margin. It is concluded from this that the marketing costs borne by the product are high when compared to the marketing costs borne by the parties to the marketing operations. The other.

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