TJAS
Tikrit Journal for Agricultural Sciences

Marketing economics and determining the factors affecting the marketing efficiency of the tomato crop in Tikrit district for the 2022 production season

Firas Ibrahim Rahim

Department of Economics and Agricultural Extension, Faculty of Agriculture, University of Tikrit, Republic of Iraq

*Correspondence email: firas.ibrahim@tu.edu.iq

ABSTRACT

This manuscript aims to determine the marketing costs, the marketing margin, measure marketing, and study the factors which affecting them for the crop for the crop, a random sample of [65] farmers (10%) of the research community of (650) who produced tomato Crops from the cultivated area was 448 dunums for the study population and 168 dunums for the sample Tikrit District for the 2022 production season , Salah al-Din Province, were selected. As for wholesalers, it reached (36), in addition to (42) retailers ., the production costs of the product amounted to approximately [189.269], while the marketing costs of the product reach to approximately [48.800] dinars per ton. Per ton, as the study showed, the merchant's profits increased from the margin, as the first deserved an average of a quarter [150.300] dinars/ton, but the merchant's profit amounted to about [76.500] dinars/ton, but the producer's profits amounted to about [126.931] dinars/ton. But the factor influencing the marketing impact is that the results achieved by independent change are proportional to what this requires from an economic and statistical standpoint. (The cost of equipment and supplies, the cost of copying and downloading, the cost of transportation, marketing centers) is linked in a manner commensurate with the marketing specifications.The researcher recommended working to raise the marketing efficiency of the tomato crop, either by reducing the costs of marketing job performance or increasing the value of marketing benefits.

اقتصاديات التسويق وتحديد العوامل المؤثرة في الكفاءة التسويقية لمحصول الطماطة في قضاء تكريت للموسم الإنتاجي 2022

فراس ابراهيم رحيم

قسم الاقتصاد والإرشاد الزراعي، كلية الزراعة، جامعة تكريت، جمهورية العراق

الخلاصة

يهدف هذه البحث إلى تحديد تكاليف التسويق، والهامش التسويقي، وقياس التسويق، ودراسة العوامل المؤثرة في محصول الطماطم اذ تم اختيار عينة عشوائية مكونة من (65) مزارع بنسبة (10%) من مجتمع البحث البالغ (650) وبلغت المساحة المزروعة (448) دونم لمجتمع الدراسة و(168) دونم للعينة ينتجون محصول الطماطم في محافظة صلاح الدين/ قضاء تكريت للموسم الانتاجي 2022. اما تجار الجملة بلغ (36) فضلاً عن جمع (42) تجار التجزئة ، بلغت تكاليف إنتاج المنتج ما يقارب [189.269]، فيما بلغت تكاليف تسويق المنتج ما يقارب [48.800] دينار للطن الواحد. ، كما بينت الدراسة، زيادة أرباح التاجر عن الهامش، إذ استحق الأول متوسط [150.300] دينار/طن، أما ربح التاجر فقد بلغ نحو [76.500] دينار/طن، أما أرباح المنتج وبلغت حوالي [126.931] دينار/طن. أما بالنسبة لأهم المتغيرات المؤثرة على الكفاءة التسويقية فقد أشارت النتائج التي تم الحصول عليها أن الصيغة الخطية في المتغيرات المستقلة هي الأفضل وفق المعايير الاقتصادية والإحصائية. ويمكن ملاحظة أن (تكاليف الصناديق وأكياس التعبئة، تكاليف التعبئة والتحميل، تكاليف النقل، ومسافة المركز التسويقي) ترتبط بحجم الكفاءة التسويقية في علاقة عكسية. أما تكاليف الإنتاج ومتغير الخبرة في الزراعة ترتبط بعلاقة مباشرة مع مقدار الكفاءة التسويقية، وهذا يتفق مع منطق النظرية الاقتصادية. وأوصى الباحث بالعمل على رفع الكفاءة التسويقية لمحصول الطماطم إما عن طريق خفض تكاليف الأداء الوظيفي التسويقي أو زيادة قيمة المنافع التسويقية.

الكلمات المفتاحية: التسويق، كفاءة التسويق .العوامل المحددة للكفاءة.

INTROUCTION

Tomato is one of the important and economic crops for the Iraqi citizen, which gives a rewarding income to the farmer due to its daily consumption by the family, whether it is fresh or processed. Agricultural marketing is the main factor in whether any crop will continue to be produced (Zanzal, and Yusuf, 2022). Therefore, attention to this aspect is considered one of the important matters that take a large part in preparing programs and plans for the success of the agricultural marketing process. Growing vegetables is considered an important activity with good economic returns by following scientific principles(Alzobaee, and Al-Samurai,2024). Any economic shock in the economy of some countries creates dynamic and interactive trends in the process of economic development in times of recession, widespread unemployment, and high

poverty (Madlul, et al 2023)The marketing margin of the studied crops. (Rahim, and Ahmed, 2021)Agricultural marketing is an applied branch of the agricultural economy that is concerned with the marketing activities that take place on agricultural products from production to delivery to the consumer (Salam et al., 2011). It also knows the place where one or more sellers offer commodities, and it is possible that there is an alternative or competing offer for this commodity at the same time. (kieth and Eric, 2000) Agricultural marketing is the process that includes all marketing exchanges, strategies, activities, job centers and marketing institutions (Al-Sahn and Abbas, 2004). There are several approaches to the study of agricultural marketing, the most important of which are the functional, organizational,(Al-Jabali.2000) commodity and analytical approaches This is done by studying approach and observing the targeted marketing of agricultural products from the production stage until they reach the place of marketing (Al-Luhaibi, 2021) .Services and products are easily exchanged with others and value is built between them(Kotler , 2018) Through the concept of marketing margin, the problems facing the marketing stages are understood. (Saud al-juwani, F. H. 2023) Marketing services appear to experience a greater increase in demand when income levels rise compared to a relatively smaller increase in demand for agricultural products. the marketing margin increases with the increase in income for the producer. Hence, the importance of marketing margin increases with the growth of the economic structure.(Rahim, et al,2023) . Measuring the marketing margin is the beginning of finding the marketing costs incurred by goods and products from the place of production to the place of consumption and through the marketing market (path) until they reach the end of the marketing path. (Al-Dabagh, 2014). Then, a study of marketing efficiency, which requires Track commodity prices in the commodity marketing path in the same period so that the results of estimation and measurement are accurate and objective. (Altamimi, and Bakr,2023)Also, through the use of standard and mathematical formulas in the analysis, to know the factors affecting marketing efficiency. The research problem is that high marketing profit leads to inefficiency in marketing of tomato cultivation due to increase in marketing cost and intermediate profit. To address this issue, it is necessary to study the marketing process from the start of production until the raw produce reaches the consumer's table, and to track the marketing channels of the produce. The research objectives can be determined through, tracking the commodity marketing behavior of the tomato crop in the study area, determining marketing costs and marketing margin under study in Tikrit district, and finding Marketing efficiency and the

most important factors affecting tomato cultivation. The research was based on the assumption that the farmers of the study sample do not use production elements and costs in quantities in which marketing efficiency is achieved

MATERIAL AND METHODS:

Data sources and analysis method: The researcher relied on the following data.

1- Data was obtained in the field from Tikrit District, where (3) first questionnaire forms were prepared for farmers, wholesalers, and especially for retailers. Data is one of the methods of quoting primary data and the method of random sampling through personal experiences and with the help of the Department of Agriculture using questionnaire form(Hamad and Shabib2024). [Farmers, wholesalers, retailers]. Standard model for factors affecting tomato crop marketing. For factors that affect efficiency, the least squares method (OLS) is used to conduct multiple regression analysis on multiple variables. (Production costs,costs of boxes and packing bags, packing and loading costs, transportation costs, experience in the agricultural sector).Marketing) and then choose the optimal choice for production. (Jassam et al., 2022) Producers need to know the cost of a typical unit of production, the cost of an additional statistical unit of total value produced divided by quantity produced, average fixed cost (fixed cost divided by quantity produced), and average variable cost (variable cost divided by quantity produced) (Yassin, 2007) Therefore, the average total cost is the sum of the variable cost and the average fixed cost, and it can be formulated as followsAverage total cost = average fixed costs + average variable costs . (Mankiw and Hakes,2012)

Statistical and measurement methods and economic standards were used, which included (production costs, marketing costs, absolute margin, relative margin, revenues and profits) and to determine the factors most influencing the marketing efficiency of tomato crops. A standard model was built that included five independent variables:

$Y = B_0 - B_1X_1 - B_2X_2 - B_3X_3 - B_4X_4 + B_5X_5 + B_6X_6 + U_1$

Y = Marketing efficiency

X_1 = Production costs dinars /ton

X_2 = costs of boxes and packing bags, dinars /ton

X_3 = packing and loading costs dinars /ton.

X4= transportation costs costs dinars/ton.

X5=Marketing center dimension / distance / meter.

X6 =Experience in agriculture / number of years

1- Secondary data: This data included a variety of information obtained from libraries through continuous follow-up with and from the relevant departments.

RESULTS AND DISSCUSION

Estimation of total production cost of tomato crops in Tikrit region. The concept of costs means the costs of marketing operations and services, and the costs of sorting, storing, classifying, and selling retail or wholesale. Research and analysis of marketing costs is one of the most important areas of marketing research(Idris K.H. 2018). Reducing all types of marketing costs without reducing outputs is often considered an important indicator of marketing efficiency (Al-Bakri,2005). A group of farmers were identified in the Tikrit district and the villages of the district through direct personal interviews with producers with the help of some agricultural division employees. Where the average production costs per dunam were calculated, as well as the average productivity per dunam, and Table (1) Shows the average cost of production per dunum. Where the average fixed production costs per dunam was [287.921] dinars / dunam, and the average variable production costs per dunam was [620.82] dinars / dunam. As for the average productivity costs on a per ton basis, the value was [189.269] dinars/ton, As the table indicates (1).

Table (1): Variable cost items per dunum of tomato crop in the Tikrit region for the production year 2022.

Average variable costs	Costs dunum	Costs per ton	Percentage
Automated work	62.4	15.10	11.68
hired work	188	40.20	31.10
Seeds	59.11	12.24	7.91
Chemical fertilizers	35.7	6.77	5.24
Organic fertilizers	116	23.12	17.88
Pesticides	30.1	6.95	5.37
fuel and electricity	61.4	16.93	13.10
maintenance expenses	22	5.41	4.18
Other expenses	22	4.58	3.54
the total	620.82	129.29	100

Source: The researcher found it by calculating it using the questionnaire

Table (2): Fixed cost items and the relative importance of tomato yield per dunum and ton for the production year 2022

Fixed costs	costs dunum	costs per ton	percentage
Land rent	6.000	1.250	2.08
Extinction	11.300	2.35	3.92
capital interest	5.621	1.171	1.95
family business	265.000	55.208	92.05
the total	287.921	59.979	100

Source: The researcher found it by calculating it using the questionnaire.

Table (3): Total costs and percentage per dunum and ton of tomato crop.

Type of costs	costs dunum	costs per ton	percentage
variable costs	620.82	129.29	68.31
Fixed costs	287.921	59.979	31.69
Total cost items	908.741	189.269	100

Source: The sources were The researcher found it using a table (1,2).

Table (4): Average total cost of production, average productivity per dunam, income per dunam, and average production cost per ton of tomatoes.

the crop	Average total costs per dunam / in dinars	Quantity of dunum (.(production (tons	Production costs per ton (dinar)
Tomato	908.741	4.8	189.269

The sources were The researcher found it using a table(3)

Items for the costs of marketing operations for the tomato crop in Tikrit district for the 2022 agricultural season**:**

Farmers: Farmers, as producers and sellers, are considered the primary link and mainstay of agricultural marketing. (Rahim,2023) and among the costs incurred by the agricultural producer are:

1- The cost of the packages: Packaging costs are one of the major marketing costs. These packages may be old (used more than once), and then their price will be lower than if they were new and not previously used. Note that they A plastic box for packaging, traded and purchased by a wholesale farmer and used more than once, The cost for one box is (1000) dinars and (25) kg, per ton of crop. The researcher calculated it according to the duration of use for the productive season, which was estimated at 35%, about 3 years. The cost for the box was 325 dinars. or 13,000 dinars per ton. And by [26.64%] in terms of the relative importance of marketing costs.

2- Packing and loading fees: The packing costs are the process that comes after harvesting, this is one of the preparatory steps before the fruit is washed, sorted, graded, and shipped to market Packing is done on the farm using custom containers where farmers load the crop for sale to wholesalers. This is [7600] dinars/ton, or [15.57%] Of the relative importance of marketing cost

3- Transportation costs: Transportation fees vary according to the means of transportation, length of distance, quantity of load, market conditions and cost per ton during transportation tomatoes is 25.000 dinars for a 2-ton car, as a percentage of total sales costs as follows of [51.23].

4- Market commission fees: The entry fees commission is estimated by the load and the size of the car. The maximum is [3200] dinars for a (A-2) ton car. It is called entry fee and depends on the size of the car and the payload. As shown in Table (5), it accounts for [6.56%] of total marketing costs.

Table (5) : The marketing costs of the tomato crop for the production year 2022.

Costs for marketing items	Cost per ton (dinar)	percentage
The cost of the packages	13000	26.64
Loading packing fees	7600	15.57
transportation fees	25000	51.23
Market commission fees	3200	6.56
total summation	48800	100

Source: The researcher found it by calculating it using the questionnaire.

Profit of product: Profit of producer (farm) = income - (production costs + selling costs). (Alzubaidi and Almullah, 2022).

Table (6): Product prices and profits per ton of tomato crop in the Tikrit region for the 2022 agricultural season.

the crop	Production cost Dinar/ton	Marketing expenses Dinars/ton	Marketing and production costs: dinars/ton	Revenue per ton	Profit is dinars /ton	Price in dinars/kg		
						Hash	Sentence	Farm
Tomato	189.269	48800	238.069	365000	126.931	630	451	365

Source: - The calculation was made using the values of the two tables (4,5).

The table above indicates the total production costs and sales costs are as follows [238.069] and the revenue per ton of the tomato crop amounted to [365.000], The producer's profit per ton of crop was [126.931].

Table (7): Items of marketing costs for wholesale and retail traders of the tomato crop in Tikrit District for the production year2022

the crop	Marketing costs for wholesalers are dinars / ton	Marketing costs for retailer's dinars / ton
Tomato	9500	28700

Source: The calculation was made using the values of the two tables (4,5.6).

t appears from the above table that the marketing costs for wholesalers amounted to [9500] dinars / ton, which included store wages, electricity, workers, and other costs borne by wholesalers. As for the marketing costs for retailers, they amounted to [28.700] dinars / ton, which includes the costs of shop rent, water, electricity, workers' wages, transportation, and sorting. And grading and other costs borne by the retailers of the tomato crop.

The marketing share of the consumer dinar on producers, wholesalers and retailers :

1- Producers' Share to Consumers' Dinar Regarding the producers' share to consumers' dinar of tomato crop, the average share of producers was about [57.93%].
2- Wholesaler Share to Consumer Dinar For the wholesaler share to consumer Dinar from the crop, where the share of wholesalers was an average [13.65%].
3- Retailers' share of the consumer dinar: - For the retailers' share of the consumer dinar for each tomato crop, the average was about [28.41%].

4- Brokers' share of the consumption amount the intermediary's share of the consumer's dinar amounted toshare of intermediaries in the tomato crop is about [42.06%], Table [8] shows.

Table (8): Dividing the share of the consumer dinar from the crop (tomatoes).

the crop	Price in dinars/kg			Consumer Dinar to divide			
	Farm	**Sentence**	**Hash**	**Product share %**	**Share of wholesalers%**	**Retailer Share %**	**Share of Brokerage %**
tomato	365	451	630	57.93	13.65	28.41	42.06

Source: The researcher calculated it through the questionnaire.
Calculating the selling margin for the tomato crop: Margins are the part of the consumer's expenses that he pays in the market and represent the difference between themthe consumer gets of goods and services and what the producer gets. (Camilla.m, 2014).

Marketing margin studies are one of the main criteria for determining the efficiency of marketing activities and the marketing margin or price spread, in addition to identifying marketing differences and the factors that influence them, as well as identifying marketing problems, (Al-Obaidi and Thamer,2018) It is between what the consumer pays and the price he receives for the product (Alwardi,.et al, 2024). Include:

1- Sales margins between wholesalers and growers the margin between the farmer and the wholesaler: The margins between wholesalers and growers of tomatoes were about [86] dinars/kg in absolute value. For the relative sales margins between the two levels of wholesalers and producers, they were about [19.06%] dinars/kg, respectively.

2- Sales margins between wholesalers and retailers: The margin between wholesale and retail: The absolute value of the margins between wholesalers and retailers was approximately [179] dinars/kg per kg of (tomatoes). The relative sales margin between wholesalers and retailers was approximately [39.68%] dinars/kg of (tomatoes).

3- Margins for sales between the retailer and the wholesaler: The margin for the producer and retail stages reached 265 dinars/kg of tomatoes. The relative margin reached [42.06%] dinars/kg, Table [9] shows.

Table (9): The sales margin at each stage of tomato sales.

Study product	Margin of the marketing process					
	Wholesale – Producer		Wholesaler - Farmer		Farmer - retailer	
	absolute	Relative	absolute	Relative	Absolute	relative
	86	19.06	179	39.68	265	42.06

Source: Calculation was made using the values of table (8)

Table (10): The profits of producers, wholesalers, and retailers of tomato crop per ton in Tikrit district.

Product profits / dinars per ton	Profits of the wholesaler / dinars per ton	Retailer profits / dinars per ton
126.931	76.500	150.300

Source: The calculation was made using the values of the two tables (7,8.9).

The above table shows that the profits of retailers were the highest, amounting to [150.300] dinars per ton, followed by profits of the producer about (126,931) dinars per ton, while wholesalers amounted to [76.500] dinars per ton.Measuring Marketing Efficiency studied tomato crop in the Tikrit area. Marketing efficiency is an economic method that measures the performance of the marketing process. Marketing efficiency represents an important goal for producers, consumers and society in general (Zaidan & Khater, 2013). Based on the analysis of information provided by marketing research specialized in the general electronic marketing environment, which in the end should help in achieving marketing commitment.(Al-Sumaidaie , et al ,2010).

Table (11) : tomato prices, margins, costs, and marketing efficiencies in the Tikrit area.

the crop	Ton production costs .(dinar/ton	Price received by farmers .(dinar/ton)	Consumer price per ton .(dinar/ton	Absolute marketing margin (dinar / .(ton	Marketing costs (dinar/ton)	Selling cost + production cost, dinars/ton	Marketing efficiency
tomato	189.269	365.000	630.000	86	48800	238.069	63.45

Source: Calculation was made by the researcher from data in Table (7,8.9).

Results of the scale model and analysis of variables determining the marketing efficiency of the tomato crop.

Multiple regression analysis using the method of least squares (OLS) on the factors affecting marketing efficiency revealed that all variables significantly affect It was at the level of importance (1%) and (5%) for economic efficiency

$$Y = 92.23 + 0.0004X_1 - 0.005X_2 - 0.007X_3 - 0.006X_4 - 0.122\,X_5 + 0.031X_6$$

$t = (199.61) (15.204) \quad (-7.257) \quad (-9.509) \ (-10.736) \ (-3.031) \quad (4.585)$

$$R^2 = 0.75 \qquad F = 90.045 \qquad D.W = 2.015$$

Table (12) : Results of statistical analysis of the relationship between Marketing efficiency of tomatoes in Tikrit and factors affecting it

variables	Co-ff	S.E	t.s	P.v
Constant	92.23	0.462	199.61	0.000
X1	0.0004	2.950	15.204	0.000
X2	− 0.005	0.000	-7.257	0.000
X3	−0.007	0.000	-9.509	0.000
X4	−0.006	0.000	-10.736	0.000
X5	−0.122	0.040	-3.031	0.002
X6	0.031	0.006	4.585	0.000
$R^2 = 0.75$		$F = 90.045$		$D.W = 2.015$

Source: By the researcher using the outputs of the statistical program Eviews 12.

According to the data, Interpreting the results of the variables of the model used [75%] Change for marketing efficiency with the remainder being [25%] to other factors not considered. The high value of [F] test at [90.045] indicates the model as a whole is significantly significant at a [1%] level. Autocorrelation was examined [D.W]. Tests have shown that this model does not have this problem. issue with a value of [2.015], falling within the acceptable range. Heteroskedasticity was tested with the Breusch-Pagan-Godfrey test, revealing the model does not have issues with variance homogeneity with an F value of [1.82]. Multicollinearity was also checked using the VIF test, confirming that the model does not have problems with multiple linear correlation with a VIF value of = [2.663]. This is in line According to economic theory, there is statistical significance at the level of significance [1%]. This is because an increase in the cost of production, in turn, leads to an increase in the quantity of production, which has a positive impact on marketing efficiency. When the cost increases by one unit, one will lead to an increase in marketing efficiency [0.0004] For the variables box and packaging cost, Sign of variable is negative, indicating that the explanatory variable has an inverse relationship with marketing efficiency, its coefficient reaches [-0.005], At the t-value level, it is a statistic [1%] and the test [7.257], which shows that a one-unit increase in these

costs leads to a reduction in the marketing efficiency of the [0.005%], with parameter values [- 0.007] through [0.005%] for variable packaging and loading costs. It reflects a negative Relationship to marketing efficiency and is economically consistent. logic, since a one-unit increase in packaging and loading costs results in a decrease in marketing efficiency [0.008%]. This variable is statistically significant with an (R) value of [9.509] and at the importance of [1%]. The transportation fee factor had an inverse relationship with marketing efficiency. It indicates statistical significance at the level of significance [1%]. This indicates that the distance of the marketing center from the farmer producing the tomato crop leads to a decrease in marketing efficiency. For changes in experience in agriculture, see which indicates the number of years of service in agriculture, which explains the relationship with efficiency. Marketing has a positive relationship, which reached [0.031], and the indication is consistent with economic theory, and the value of (t) appeared, which indicates a statistically significant degree to a large degree. The level [1%] According to the mere old man, an increase of one unit in years of experience increases efficiency as follows [0.031%].

CONCLUSIONS

Rising prices for production materials and services and the lack of government support have raised the cost of production borne by farmers. Absolute sales margins for wholesalers and retailers Because of the difference in the price of the crop between wholesale markets retailers who did not have a sales function, resulting in a profit of about [179] dinars/kg. In addition, the relative sales margins for both crops were the wholesaler and retailer stages each lost about [39.68%] dinar/kg and their profits were higher. The reason that the middleman's share was high and close to the farmer's share of the consumer's dinar share is because they do not provide services and marketing costs compared to the costs and services provided by the farmer. The marketing efficiency of the tomato crop was low when they reached the average [63.45%], respectively, resulting in undesirable negative effects affecting the marketing of the crop internally. As for the influencing factors (The costs of the box, the packing bag, the load, transportation fees, and the distance from the place of sale), these are inversely correlated with the sales efficiency volume. It is clear from the above that the retailer (individual) achieves three times the profit of the wholesaler per ton and more than the producer per crop. This requires the supervisory authorities in the Directorate of Agriculture and the Economic Committees to set

economic profit margins not to exceed the wholesaler's profit in support of consumer prices per kilogram.

REFRANCES:

AL-Dabagh, J. M. J. (2014). Economics of Agricultural Marketing. Part One, First Edition, Dar Al-Murtada for Printing and Publishing, Baghdad, Iraq.

Alhammad, Z., & Awaideh, M. (2023). Exploring the Role of Dates Value Chains in Enhancing Food Security in Jordan. *Research Journal of Agriculture and Biological Sciences*, *15*(1), 1-6. http://dx.doi.org/10.22587/rjabs.2023.15.1.1

Al-Jabali, Mahmoud Ali and Al-Samarrai, Qusay Mahdi, (2000), Cost Accounting, Al-Wael Publishing House, first edition, Amman, Jordan

Al-Lahibi, Firas Ibrahim Arhim (2021) The economics of marketing the wheat crop in Iraq for the 2018 production season (Salah al-Din Governorate as a model) PhD thesis, Department of Agricultural Economics and Extension, College of Agriculture, University of Tikrit.

Al-Nimrawi, K. H. M., & Rahim, F. I. (2023, December). Fish Marketing in Salah Al-Din Governorate for the 2022 Productions (Tikrit District as a Model). In IOP Conference Series: Earth and Environmental Science (Vol. 1262, No. 10, p. 102007). IOP Publishing. DOI:10.1088/1755-1315/1262/10/102007

Al-Obaidi, A. M. M. (2018). An Economic to Market Some Vegetables Crops at Salahaddin Province (AI-Alam District Applied Model) Season of Agricultural (2016-2017). Atheer Myaser Muhsin Al-Obaidi and Hassan Thamer Zanzl Al-Samarrai. Journal Tikrit Univ. For Agri. Sci. Vol, 18(3).

Al-Sahn, Mohamed Farid, Abbas, Nabila, (2004). Principles of Marketing, Faculty of Commerce, Alexandria University, University Press House

Al-Sumaidaie, Mahmoud Jassim and Al-Taie, Hamid and Al-Alaq, Bashir and Al-Qurm, Ihab Ali, (2010), Modern Marketing, Dar Al-Yazouri for Publishing and Distribution, Amman, Jordan

Altamimi, A., & Bakr, U. T. (2023). Determining the optimal size of production and measuring the specialized efficiency in grape production farms in Diyala Governorate-Iraq for the season 2021: Determining the optimal size of production and measuring the specialized efficiency in grape production farms in Diyala Governorate-Iraq for the season 2021. *Tikrit Journal for Agricultural Sciences*, *23*(4), 117-135. . https://doi.org/10.25130/tjas.23.4.11

Alwardi, H. J. M., Ali, S. H., & Abd Al Majeed, A. T. (2024). Measurement the Producting Efficiency and Marketing Efficiency of Okra Crop (Covered) in Baghdad Governorate for the Season 2022. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *9*(1), 22. DOI: https://doi.org/10.26668/businessreview/2024.v9i1.4230

Alzubaidi, E. F., & Almullah, A. M. (2022). Estimating the added value of wheat crop production in Nineveh Governorate for the agricultural season 2019-2020. Mesopotamia Journal of Agriculture, 50(4), 76-89. https://doi.org/10.33899/magrj.2022.134996.1187

Alzobaee, M. M., & Al-Samurai, H. T. (2024). Estimating the economic efficiency of potato varieties grown in the fall season 2021 (Baghdad Governorate-Al-Nasr and Al-Salam district-an applied model). Tikrit Journal for Agricultural Sciences, 24(1), 193-205. https://doi.org/10.25130/tjas.24.1.16

Arhaeem, F. A. (2018). The Views of Agricultural Employees in The Directorate of Agriculture of Kirkuk-Iraq-Towards The Obstacles of Agricultural Extension Communication and Its Relation to Some Variables Firas Abraheem Arhaeem. *Journal Tikrit Univ. For Agri. Sci. Vol*, *18*(3).

Hamad, M., & Shabib, M. M. (2024). Estimating the levels of technical and economic efficiency of yellow corn crop farms in Kirkuk Governorate-Hawija district (a model) For the production season 2022 AD. Tikrit Journal for Agricultural Sciences, 24(1), 263-275. https://doi.org/10.25130/tjas.24.1.21

Camilla. M. , (2014). Stochastic frontier Models university of Salento , development of economic and mathematics – statistics" , GLDE

Idris K.H. (2018) , marketing efficiency of sheep milk and its Derivatives in the Middle Area (Homs & Hama) Syrian journal of Agricultural research 5(1) .

Jassam, Q. T., Ali, E. H., & Ghaylan, M. S. (2022). Estimating Factors Affecting Wheat Marketing Efficiency Using Tobit Model. *Iraqi Journal of Agricultural Sciences*, *53*(4), 941-949. DOI: https://doi.org/10.36103/ijas.v53i4.1606

Kieth,R.&Eric,(2000),the Marketing Revolutions Edited by stevend,shaw and C.my Feron Gih, in Marketing in business Management the Macmillon

Kotler, P. Keller, K. L. Ang, S. H., Tan, C. T. & Leong, S. M. (2018). Marketing management: an Asian perspective. London: Pearson..

Madlul, N. Hameed, H. F. Yaseen, T. S. & Sulaiman, M. A. (2023). An economic and econometric study of the response of agricultural investment to economic shocks in Iraq for the period [2004q1-2020q4]: Agricultural Economy. Tikrit Journal for Agricultural Sciences, 23(4), 192-207. DOI: https://doi.org/10.25130/tjas.23.4.15 **.**

Mankiw,N.G & Hakes,D.R.(2012).Study Guide Principles of Macroeconomics, Sixth Edition, Soth-Western, Cengage Learning Acadimic Resource Center, South western United States.

Mohammed , I. F. & Irhaim. F.l.(2023) . Economic study of the marketing efficacy of broilers in Nineveh Governorate for the 2021 production season Al-Hamdaniyah district as a model   http://dx.doi.org/10.21931/RB/CSS/2023.08.02.45

Rahim, F. I. **(**2023**).** The economics of marketing the apricot crop and measuring marketing efficiency and the factors affecting it in Salah al-Din-Al-Alam District as a model for the 2022 production season doi 10.58928/ku24.15101

Rahim, F. I., & Ahmed, J. S. (2021). Marketing and Value Chain analysis for the Marketing loop of the wheat crop in Salah Al-Din Governorate of Iraq for the Agricultural Season 2018. *Plant   Archives*, *21*(1),   1178-1182. https://doi.org/10.51470/PLANTARCHIVES.2021.v21.S1.185

Rahim, F. I., Abdullah, M. K., & Madlul, N. S. **(2023).** The Economics of Marketing the Cucumber Crop in Salah al-Din Gover-norate, Tikrit district, as a model for The Summer Production Season 2021.

http://dx.doi.org/10.21931/RB/CSS/2023.08.04.53

Salam, Walid Yehia, Wasfia Mahmoud El-Sayed and Ayman Abdel-Qawy Shelani (2011) Agricultural Marketing, Ministry of Higher Education, Books Sector, Arab Republic of Egypt, Agricultural Reference Blog

Saud al-juwani, F. H. (2023). Analysis of value chains and added value for the production and marketing of the tomato crop in Salah al-Din Governorate for the year 2021 (Al-Ishaqi-a model). *Journal of Kirkuk University for Agricultural Sciences*, *14*(3). doi: 10.58928/ku23.14332

Shiaa, M. M., & Arhim, F. I. (2023). Estimation of technical efficiency levels using the Data Envelope method (DEA) for wheat crop cultivars farms in Diyala Governorate for the produc-tion season (2020-2021). Ann. For. Res, 66(1), 4519-4528. DOI:10.21931/RB/CSS/2023.08.04.67

Yassin, Mahmoud Mohamed, and others, (2007), Introduction to the Science of Agricultural Marketing, Al-Rawda Press, Damascus, Syria.

Zanzal, H. T., & Yusuf, A. J. (2022). Marketing efficiency of the tomato crop in Iraq for the year 2020 (Salah al-Din Governorate as a model and application). Tikrit journal for agricultural sciences, 22(2), 13-19. https://doi.org/10.25130/tjas.22.2.2

Zidan, Ali Ghaidan, Khater, Saadoun Farag, (2013). Measuring the productive and marketing efficiency of the field pistachio crop in Diyala Governorate, Diyala Journal of Agricultural Sciences, Volume 5, Number 2