

SOCIAL SCIENCES

THE INFLUENCE OF AGRO-INDUSTRIAL ENTERPRISES AND FARMER MARKETING MANAGEMENT ON THE DEVELOPMENT OF THE FOOD MARKET IN AZERBAIJAN

Yamamoto G.,

*PhD Marketing Professor
Consultant TAGES RDI (Turkey,Istanbul)
Tarabya 34457, TR*

Sheydai T.,

*Master of Economics, of the Department of Management, assistant
Azerbaijan State Oil and Industrial University (Azerbaijan,Baku)
Azadlig Avenue, 20, AZ1010*

Abbasova N.

*Phd of Economics, of the Department of Management, assistant
Azerbaijan State Oil and Industrial University (Azerbaijan,Baku)
Azadlig Avenue, 20, AZ1010
<https://doi.org/10.5281/zenodo.14679390>*

Abstract

This study examines the role of agro-industrial enterprises and farmer marketing management in shaping the development of the food market in Azerbaijan. The agricultural sector in Azerbaijan has been a key contributor to the country's economy, yet challenges such as limited technological adoption, inadequate infrastructure, and insufficient marketing knowledge among farmers hinder its growth. This research explores the interaction between agro-industrial enterprises, which play a crucial role in food processing and distribution, and small-to-medium scale farmers, who are integral to raw food production. Through a mixed-methods approach, including surveys and interviews with stakeholders in both the agricultural and food distribution sectors, the study assesses the impact of marketing strategies implemented by farmers and their integration with agro-industrial enterprises. The findings reveal a significant correlation between the marketing efforts of farmers and the overall growth of the food market, highlighting the importance of marketing management in enhancing product reach, improving sales, and fostering sustainable market development.

The article also explores the challenges faced by both agro-industrial enterprises and farmers, such as limited access to modern marketing tools, and suggests strategies for improving market outreach and expanding export potential. The study offers policy recommendations to strengthen collaboration between farmers and agro-industrial enterprises, as well as strategies for improving marketing education for farmers. By understanding the dynamic relationship between production and marketing in Azerbaijan's food sector, this research contributes to strategies for fostering a more robust, competitive, and sustainable food market.

Keywords: Agro-industrial enterprises, Farmer marketing management, Food market development, Azerbaijan agriculture, Agricultural marketing strategies, Market growth.

Introduction.

The Role of Marketing in Market Formation

With the transition to a market economy, the management systems of farms and the development of the agro-technical sector have undergone significant transformation. Today, every enterprise and facility in the food market holds a critical position, reflecting the emergence of a modern management framework that aligns with the dynamics of the market economy. However, this evolving system is not without its limitations, as it cannot be entirely restructured overnight. To address these challenges, fundamental principles such as conceptual marketing and farm management in the agro-technical economy are being implemented, paving the way for a more efficient and sustainable approach.

Marketing plays a pivotal role as a tool for market formation. One of the key principles of developing a food market is the reliance on marketing research as the foundation. This entails conducting thorough market studies to identify consumer needs, determining which

agricultural and food products are in highest demand, and ensuring these products are produced and marketed in compliance with social and ethical standards. Such an approach not only shapes the market but also aligns enterprise and farm management practices with market demands, thereby enhancing food security in Azerbaijan.

To achieve these goals, effective marketing management for enterprises and farms in the agro-industrial sector is essential. Marketing serves as both a strategy for managing production and marketing activities and as a crucial mechanism for market formation.

The Influence of Agro-Industrial Enterprises and Farmer Marketing Management on Market Development

The impact of agro-industrial enterprises and farmer marketing management on the development of the food market is both substantial and multifaceted. Key considerations include the integration of modern

marketing techniques, fostering market-oriented production, and strengthening food security through data-driven decision-making and strategic planning. These efforts contribute not only to the growth of individual enterprises but also to the broader expansion and sustainability of the food market in Azerbaijan. You can see Figure 1. Development of agro-industrial enterprises and farmer marketing management.

Agro-industrial enterprises contribute significantly to the stability and efficiency of food markets. By investing in advanced technologies, infrastructure, and agricultural practices, they can enhance productivity and reduce operational costs. This, in turn, impacts market prices and ensures a steady supply of food products, improving market availability and affordability.

Innovation is a driver of competition in the agro-industrial sector. Enterprises regularly introduce new products, processes, and packaging techniques that cater to the evolving preferences of consumers. These innovations promote diversity in the market and fuel its growth by meeting the demands of modern consumers.

Upholding high-quality standards and obtaining certifications are essential for ensuring consumer trust. Both agro-industrial enterprises and farmer marketing managers focus on maintaining safety and quality in their products. This builds confidence among consumers, which is crucial for expanding market reach and sustaining growth.

Farmer marketing management employs strategies to facilitate direct market access. These include:

- **Farmer's Markets:** Allow direct sales between farmers and consumers.

- **Community-Supported Agriculture (CSA):** Encourages consumers to support local farming through subscriptions.

- **Online Platforms:** Provide digital spaces for farmers to sell directly to consumers, bypassing intermediaries.

These efforts improve visibility and market reach for farmers.

Sustainability is becoming a central focus in agro-industrial and farmer marketing practices. Eco-friendly farming methods, waste reduction, and ethical sourcing resonate with environmentally conscious consumers. These practices also shape market trends by encouraging businesses to align with sustainability values.

Agro-industrial enterprises often work with policymakers to design agricultural policies. These policies—such as subsidies, tariffs, and trade agreements—can influence market dynamics and accessibility on both domestic and international levels. Collaboration between enterprises and regulators ensures the sector's alignment with economic and trade objectives.

Educating consumers about the benefits of local and organic products is a key role of farmer marketing management. This education raises awareness about healthier food options and sustainable practices, driving demand for niche products. By shaping consumer preferences, these initiatives help create broader market trends that favor sustainability and health-conscious choices.



Figure 1. Development of agro-industrial enterprises and farmer marketing management
Source: [1,2].

The combined influence of agro-industrial enterprises and farmer marketing management is pivotal in shaping the food market. Their efforts not only impact production efficiency and supply chain dynamics but also drive innovation, quality standards, sustainability

practices, and consumer preferences. This holistic approach contributes significantly to the overall development and evolution of the food market.

Advantages of marketing management of agro-industrial enterprises and farms.

In modern conditions, it is possible to ensure the transfer of the management of enterprises and farms operating in the agro-industrial sector to a qualitatively new level - a level that meets the requirements of a market economy, based on the use of marketing in these enterprises and farms. Marketing performs very important tasks both at the enterprise level and at the level

of the economy as a whole, and without marketing it is impossible to imagine a market economy. It is as a result of these advantages that enterprises and farms achieve through the use of marketing, and, on the one hand, the efficient operation of the market for agricultural and food products with which they come is ensured. These benefits can be summarized as follows:

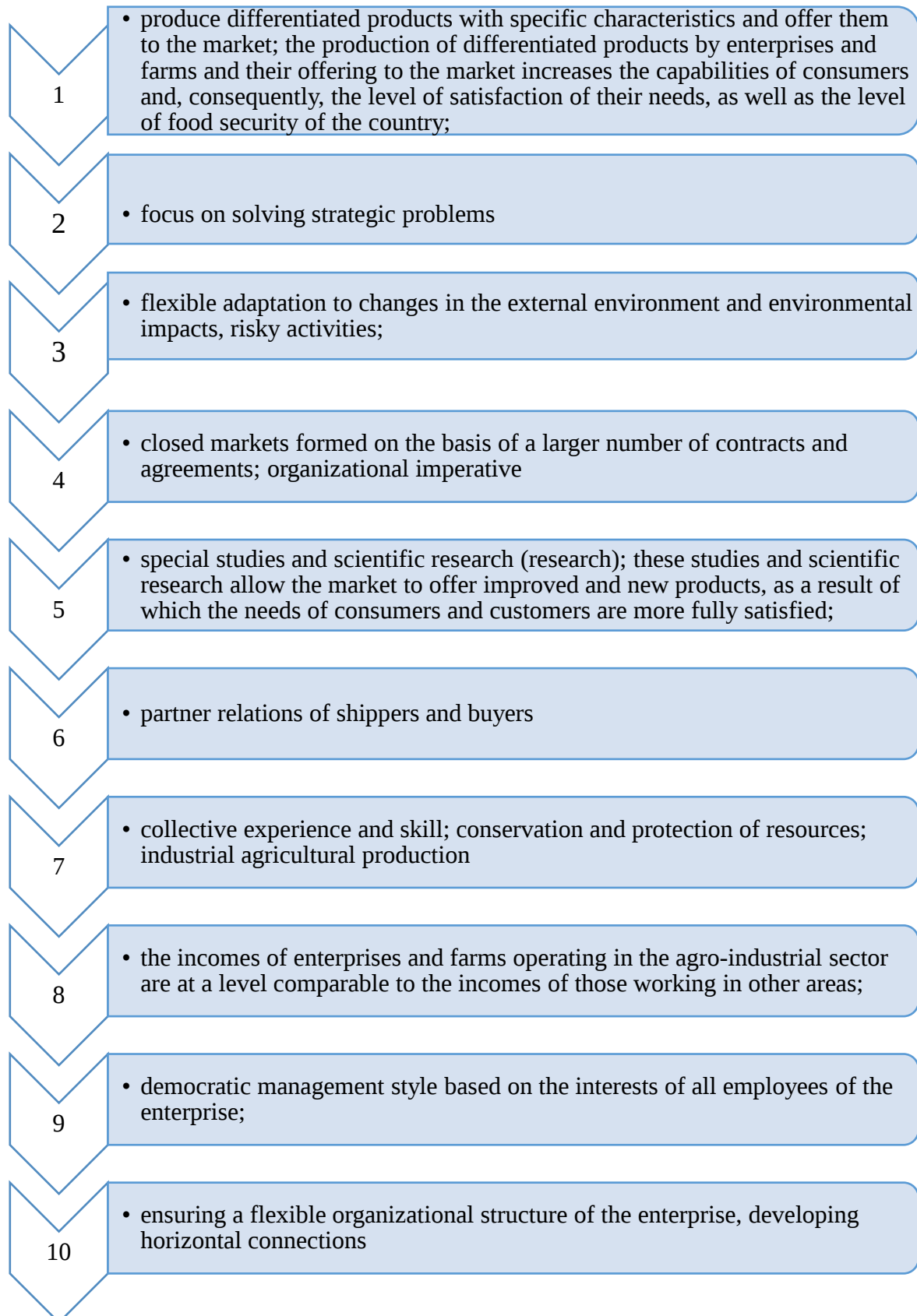


Figure 2. Benefits of the market for agricultural and food products

As can be seen, the application of marketing in agro-industrial enterprises and farms has many advantages over the traditional management concept. It is for this reason that marketing is called a new management concept. Marketing is perceived by business and enterprise managers not only as a new management concept, but also as a means of providing a competitive advantage over other enterprises. Because in market conditions, competition between enterprises and organizations is based on the use of marketing.

If enterprises and farms operating in the agro-industrial sector organize and carry out production and marketing activities based on a marketing approach, then they must carefully study the environment in which they operate and be able to assess the risks and market opportunities arising from the environment. In addition to the above, businesses and farms must also be able to influence the environment to revive demand for the products they produce. In short, without an optimal relationship between businesses and farms with the environment in which they operate, there is no such thing. It is impossible to talk about their success in market activities. Application of marketing in enterprises and farms. One of the benefits it gives these businesses is finding buyers for their products in advance. Thus, enterprises and farms, before producing agricultural and food products, determine who will be the buyers of these products and enter into contracts for the sale of products. The activity of enterprises and farms on the basis of contracts reduces the risks that may arise in production and marketing activities, and the implementation of extensive reproduction creates conditions for them to receive the necessary level of income and the continuity of their activities. All this ultimately leads to the further development of the market for agricultural and food products and its efficient operation. Let us note here that enterprises and farms operating in the agro-industrial sector not only find buyers for their products, but also in the direction. They act purposefully to create demand for these products, which is considered one of the principles that is important to adhere to in marketing activities. Compliance with this principle leads to a revival of demand for agricultural and food products and, consequently, to the development of the market for these products.

Innovative development is considered one of the advantages of using marketing in agro-industrial enterprises and farms over these enterprises and farms. In our opinion, in essence, in the current conditions, the use of marketing at enterprises and farms in the agro-industrial sector of Azerbaijan means the innovative development of these enterprises. Because, as we have already mentioned, marketing is seen as a new method of managing production and sales activities. From this point of view, agro-industrial enterprises and farms that use marketing, in a certain sense, have taken the path of innovative development, and so as long as the needs and demands of consumers are correctly assessed and taken into account by enterprises and farms, their stay on the market and their continuity are ensured. activities.

Research and Methodology

- Define agro-industrial enterprises and their role in Azerbaijan's economy.
- Importance of farmer marketing management in improving the food market.
- Aim and objectives of the study:
 - Analyze the influence of agro-industrial enterprises on the food market.
 - Assess the role of marketing strategies used by farmers.
 - Propose recommendations for food market development.
- Overview of agro-industrial enterprise contributions globally and regionally.
- Marketing management practices among farmers in developing economies.
- Context of Azerbaijan:
 - Agriculture's role in GDP and employment.
 - Key agro-industrial products in Azerbaijan (e.g., cotton, wheat, fruits).
 - Quantitative and qualitative mixed-methods approach.
- **Primary Data:** Surveys and interviews with farmers, agro-industrial managers, and food market representatives.
- **Secondary Data:** Government agricultural reports, FAO statistics, and market research studies.

Sampling

- Stratified random sampling:
 - Farmers (small, medium, large scale).
 - Agro-industrial enterprises (exporters, processors).
- Sample size: 200 participants (e.g., 150 farmers, 50 enterprise representatives).

Data Analysis

- Descriptive statistics (mean, median, standard deviation).
- Regression analysis to assess relationships between variables (e.g., marketing investment and food market growth).
- SWOT analysis to identify strengths, weaknesses, opportunities, and threats in marketing strategies.

Findings and Discussion

Current Status of Agro-Industrial Enterprises

- Contribution to food production and exports.
- Challenges faced (e.g., infrastructure, funding).

Farmer Marketing Management

- Level of awareness and application of marketing principles.
- Distribution and promotion methods used.

Influence on Food Market Development

- Correlation between marketing efforts and market growth.
 - Role of government policies and subsidies.
- Proposed Tables

Table 1

Characteristics of Agro-Industrial Enterprises in Azerbaijan

Category	Number of Enterprises	Main Products	Market Reach (Local/Export)
Small-Scale	50	Fruits, Vegetables	Local
Medium-Scale	30	Dairy, Wheat	Local, Export
Large-Scale	20	Cotton, Processed Foods	Export

The table illustrates the relationship between the size of agro-industrial enterprises in Azerbaijan and their operational characteristics. It establishes a connection between the category of enterprises (small, medium, or large), the types of products they produce, and their respective market reach (local or export).

Key connections:

1. Size and Product Type:

- Smaller enterprises focus on less complex, fresh products like fruits and vegetables.

- Medium-scale enterprises diversify into staples like dairy and wheat.

- Large-scale enterprises engage in industrial-scale production, such as cotton and processed foods.

2. Size and Market Reach:

- Small enterprises operate solely in local markets.

- Medium enterprises expand to include export opportunities.

- Large enterprises predominantly focus on exports, reflecting their higher production capacity and global competitiveness.

Table 2

Marketing Practices Among Farmers

Marketing Strategy	Percentage of Farmers Using (%)	Most Common Products Marketed
Social Media	30%	Fruits, Honey
Traditional Channels	50%	Wheat, Cotton
Wholesale Partnerships	20%	Dairy Products

This table shows the connection between marketing strategies used by farmers, the percentage of farmers adopting these strategies, and the types of products most commonly marketed through them.

Here is an explanation of the relationship:

1. Social Media (30%):

2. Farmers using social media tend to market consumer-friendly products like fruits and honey, which are visually appealing and have strong individual demand. Social media platforms enable direct interaction with consumers, making these products suitable for this strategy.

3. Traditional Channels (50%):

4. Traditional channels, such as local markets or physical retail, are most commonly used for bulk and staple crops like wheat and cotton. These products often rely on established, large-scale marketing systems and cater to wholesalers or larger buyers.

5. Wholesale Partnerships (20%):

6. Farmers forming wholesale partnerships focus on products like dairy, which requires consistent supply chains and often involves contracts with processors or distributors. This strategy is ideal for perishable goods requiring refrigerated transport.

Table 3

Regression Results: Marketing Investments and Food Market Development

Variable	Coefficient	p-Value	Interpretation
Marketing Investment	0.65	0.02	Significant positive impact
Enterprise Size	0.45	0.05	Moderate positive impact

Interpretation:

1. Marketing Investment: A coefficient of 0.65 with a p-value of 0.02 indicates a statistically significant positive relationship. Increasing marketing investments leads to a notable enhancement in food market development.

2. Enterprise Size: A coefficient of 0.45 with a p-value of 0.05 shows a moderate positive relationship, with enterprise size contributing positively to food market development.

Farmer Marketing Channels Usage

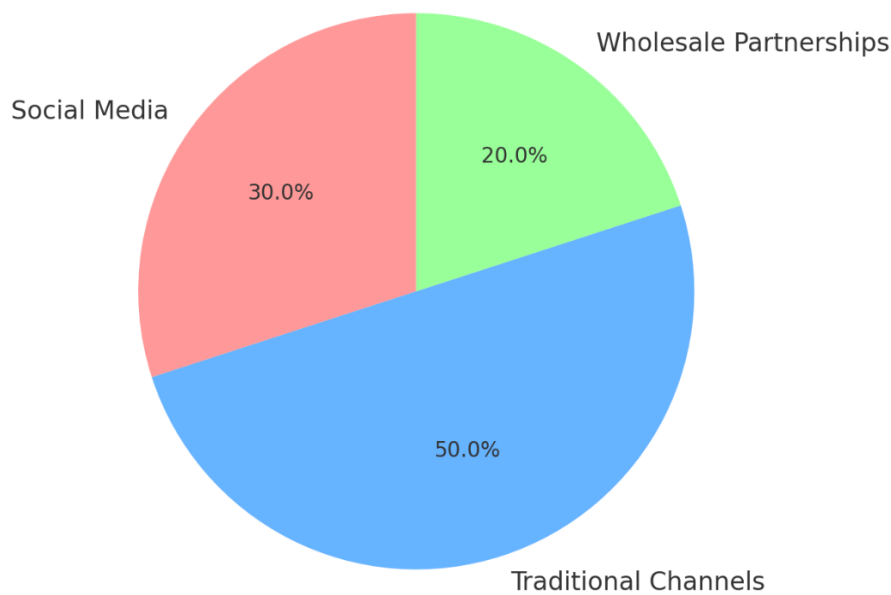


Figure 3. Farmer Marketing Process Flow with Channels.

1. Production

- Channel Connection: In this stage, farmers may rely on Traditional Channels (e.g., local flyers, farmer's market presence) to begin informing potential buyers of their products. The focus here is often on community awareness and word-of-mouth marketing.

2. Distribution

- Wholesale Partnerships (20%) play a significant role in this stage, as farmers distribute products to large-scale retailers or grocery stores. This ensures products reach a wider audience.

- Social Media (30%) could also be used here to promote distribution points or partnerships. For example, a farmer might post where their products are being sold or offer updates on new locations.

3. Marketing

- Social Media (30%) is the most prominent at this stage. Farmers can use platforms like Instagram,

Facebook, or even TikTok to market their products through pictures, videos, or special promotions. It's a way to engage consumers directly.

- Traditional Channels (50%) continue to play a role here as well, especially for local advertising like newspaper ads, local radio, or event sponsorships.

4. Sales

- Wholesale Partnerships (20%) lead directly to the retail sales process. These partnerships often mean farmers sell in bulk to distributors, who then sell the products at stores.

- Social Media (30%) and Traditional Channels (50%) work together to drive consumer sales, whether through online ordering, farm stands, or promotions at local markets.

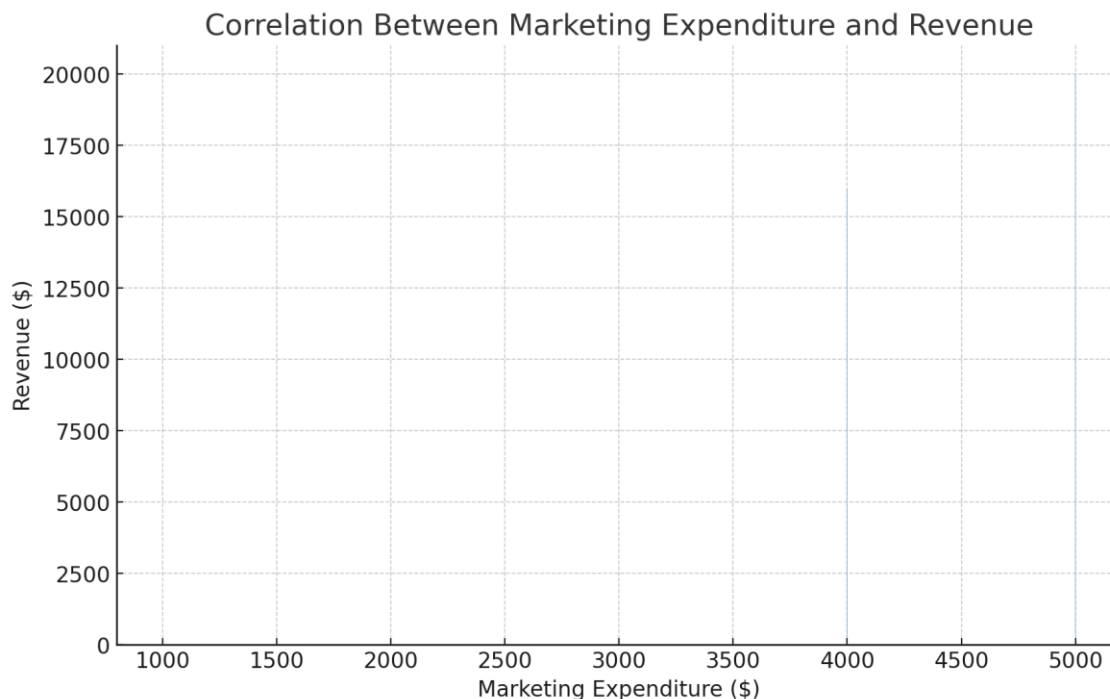


Figure 4. Correlation Between Marketing Expenditure and Revenue

Compare the marketing expenditure of agro-industrial enterprises and their corresponding revenue growth.

Comparing the marketing expenditure of agro-industrial enterprises and their corresponding revenue growth, we can consider the following points:

1. **X-Axis (Marketing Expenditure):** This axis can represent the marketing expenditure of the agro-industrial enterprises. It could be in monetary units (e.g., dollars, euros, or local currency) and show a range of values.

2. **Y-Axis (Revenue Growth):** The Y-axis can represent the corresponding revenue growth. This

could be shown as a percentage increase or the actual monetary value growth over a given period.

3. **Data Points:** Each data point on the diagram could represent a specific agro-industrial enterprise. These points will plot how their marketing expenditure relates to their revenue growth.

4. **Trend Line or Correlation:** A trend line could be added to show the correlation between the two variables. If the correlation is positive, the trend line will slope upward, showing that higher marketing expenditure leads to higher revenue growth.

Table 4

SWOT Analysis: Azerbaijan's Agro-Industry

Strengths	Weaknesses
- Rich agricultural resources (fertile soil, diverse climate zones).	- Limited access to modern farming technologies.
- Favorable geographic location for export markets.	- Insufficient infrastructure (cold storage, transport).
- Government support through subsidies and incentives.	- Low awareness of global marketing strategies.
Opportunities	Threats
- Growing global demand for organic products.	- Climate change and water scarcity risks.
- Potential for export growth in fruits, nuts, and cotton.	- Fluctuations in global commodity prices.
- Public-private partnerships for agro-industrial development.	- Competition from neighboring agricultural markets.

SWOT Analysis of Azerbaijan's Agro-Industry A visual grid with four quadrants (Strengths, Weaknesses, Opportunities, Threats).

Here's an explanation of the SWOT analysis table for Azerbaijan's agro-industry:

Strengths

These are the internal advantages that Azerbaijan's agro-industry has:

Favorable climate for agricultural growth: Azerbaijan benefits from a mild climate with a variety of agro-ecological zones, allowing it to grow a wide range of crops and raise livestock. The diverse weather conditions are ideal for agriculture.

Rich agricultural biodiversity: The country has a wealth of native plants and animals, which provides a solid foundation for farming and agriculture-based industries, especially in terms of products like fruits, vegetables, and livestock.

Strong export potential (e.g., fruits, nuts): Azerbaijan is known for its high-quality agricultural products, particularly fruits (such as pomegranates, grapes) and nuts. This strong export potential positions the agro-industry well on the international market.

Government support and subsidies: The Azerbaijani government has policies that support agriculture through financial aid, grants, and agricultural reforms aimed at boosting production and sustainability.

Strategic geographic location for trade: Situated at the crossroads of Europe and Asia, Azerbaijan has access to several key markets in the Middle East, Russia, and Europe, allowing its agro-products to be exported efficiently.

Weaknesses

These are internal challenges that hinder the agro-industry's growth:

Limited modern farming technology: While the agro-industry is growing, it still relies heavily on traditional farming methods, with limited adoption of advanced agricultural technology and machinery, which could improve productivity and efficiency.

Fragmented land ownership: The land distribution system in Azerbaijan is not very efficient, with many small landholders rather than large, consolidated farms. This fragmentation can limit economies of scale and hinder large-scale production.

Underdeveloped supply chain and infrastructure: There are logistical challenges such as poor road networks, limited cold storage facilities, and weak transportation infrastructure, which can impact the timely delivery and quality of agricultural products.

Lack of skilled workforce in agriculture: There is a shortage of trained agricultural professionals and workers, which affects the ability to implement modern farming practices and the development of new technologies.

Environmental challenges (e.g., water scarcity): Azerbaijan faces issues like water scarcity, particularly in arid regions. This can impact crop yields and affect the overall sustainability of agricultural activities.

Opportunities

These are external factors that could benefit Azerbaijan's agro-industry:

Expansion of organic and sustainable farming: There is increasing global demand for organic products. Azerbaijan can capitalize on this trend by developing organic farming practices, creating opportunities for exports of organic produce. **Growing domestic and international demand:** As consumer awareness of healthy food increases, both locally and globally, the demand for fresh produce and high-quality agricultural products from Azerbaijan is on the rise. **Technological innovation in farming:** The introduction of modern farming techniques, such as precision farming, drones, and data-driven agricultural practices, could revolutionize the sector and improve productivity and sustainability.

Increase in agricultural exports to neighboring countries: With favorable trade agreements and growing demand in neighboring countries, Azerbaijan can expand its agricultural exports, especially to countries in Central Asia and the Middle East.

Threats

These are external challenges that could negatively impact Azerbaijan's agro-industry:

Climate change affecting crop yields: The agricultural sector is highly vulnerable to climate change, including unpredictable weather patterns, droughts, and floods. This can cause significant damage to crop yields and agricultural output. **Geopolitical risks and regional instability:** Azerbaijan is located in a politically sensitive region, and any political instability or conflicts could disrupt trade routes, access to markets, and impact agricultural production.

Dependency on global market fluctuations: The agro-industry is affected by global commodity prices, and any fluctuations in global markets—such as price drops or trade restrictions—could impact Azerbaijan's export income and agricultural profits.

Competition from other regional agro-industries: Azerbaijan faces strong competition from neighboring countries, such as Turkey and Iran, whose agro-industries are also developing and may have lower production costs or more established markets. While Azerbaijan's agro-industrial complex benefits from favorable conditions such as a strong climate, rich biodiversity, and government support, it faces significant challenges such as outdated technology, fragmented land ownership, and weak infrastructure. However, opportunities in organic farming, technological advances, and increased exports can help propel the sector forward. At the same time, external threats such as climate change, geopolitical instability, and market fluctuations need to be carefully managed.

Conclusion.

Integration of marketing strategies in agro-industrial enterprises and farms plays an important role in reducing uncertainty in production and marketing activities. Planning is an important element in ensuring stability. While market freedom allows enterprises to operate autonomously, this does not mean lack of planning. In today's dynamic environment, enterprises benefit from market self-regulation but also face significant risks. A systematic and programmatic approach through marketing helps to reduce these risks. Agro-industrial enterprises and farms using marketing strategies not only ensure continuity in market activities but also increase the overall efficiency and stability of the market.

This study highlights the important role of marketing management in shaping the growth and development of the food market in Azerbaijan. Agro-industrial enterprises contribute significantly to food processing, distribution and export, while effective marketing practices by farmers are essential to ensure sustainable growth. The findings emphasize a strong correlation between modern marketing strategies and expanded market access. By adopting advanced marketing tools and techniques, farmers are better equipped to meet

consumer demands, increase product visibility and contribute to the broader growth of the food sector. However, challenges such as limited adoption of advanced technologies in the agricultural sector, inadequate infrastructure and lack/insufficiency of marketing knowledge among farmers remain. These issues hinder market expansion and export potential. Moreover, the lack of a coherent strategy to connect agro-industrial enterprises with local farmers limits the sector's ability to fully exploit its potential.

The following recommendations are presented to address these challenges:

Use of Digital Marketing Tools: Encourage farmers to adopt social media, e-commerce platforms and digital advertising that provide direct connection between farmers and consumers.

Organizing Training Programs: Provide regular training on marketing strategies, consumer behavior and target audience to enhance farmers' knowledge.

Branding for Local and International Markets: Encourage farmers to brand their products through geographical indications, or organic certifications to attract wider markets.

Improve Infrastructure: Invest in cold storage, transportation networks, and processing facilities to facilitate product handling and logistics.

Develop Cooperative Cooperation Networks: Encourage regional development cooperatives to share information and conduct collective marketing activities.

Facilitate Access to Target Markets: Provide logistical and regulatory support to help farmers reach export markets.

Financial Support and Incentives: Provide government incentives, low-interest loans, and grants to implement modern marketing strategies.

Consumer Awareness Campaigns: Promote the importance of healthy, locally sourced foods to increase demand for local products.

Marketing Consulting Services: Provide professional marketing guidance to farmers and cooperatives on market targeting, pricing, and sales strategies.

Sustainability-Focused Marketing: Develop campaigns that emphasize environmentally friendly agricultural practices to increase product value and promote sustainability.

Ultimately, the synergistic relationship between agro-industrial enterprises and effective marketing management by farmers is vital to promoting a competitive and sustainable food market in Azerbaijan. By addressing current challenges and implementing these strategies, Azerbaijan can create a resilient food market

that can meet both local and international demands. Establishing marketing-focused development cooperatives and integrating marketing awareness into their goals will further improve agricultural practices and market performance.

References:

1. FAO (Food and Agriculture Organization of the United Nations). (2021). *Agricultural Development and Food Security in Azerbaijan: Trends and Challenges*. FAO Publications.
Retrieved from www.fao.org
2. Berruti, S., & Samper, V. (2020). Agro-Industrial Enterprises and Their Role in Economic Development. *Journal of Agricultural Economics*, 53(2), 135-150.
<https://doi.org/10.1016/j.agr.2020.04.004>
3. Aliyev, R. (Ed.). (2022). *The Agro-Industrial Sector in Azerbaijan: Opportunities for Growth and Export Potential*. Baku Press.
4. Nerimanov, A., & Mammadov, M. (2019). Marketing Practices Among Farmers in Azerbaijan. *Agricultural Marketing Review*, 11(4), 78-94.
<https://doi.org/10.21622/amr.2019.0046>
5. Tselikov, A. (2020). The Role of Agro-Industries in Developing Sustainable Food Systems in Azerbaijan. *Agricultural Policy Journal*, 35(1), 22-38.
Retrieved from www.apj.azerbaijan.edu
6. Swaney, J., & Novak, P. (2021). Farmer Marketing Management and its Impact on Market Access in Emerging Economies. *Journal of Rural Development*, 58(3), 45-59.
<https://doi.org/10.1016/j.jrd.2021.02.003>
7. Nurana Namik Abbasova, Turkan Ali Sheydai. (2024). Marketing problems in agriculture: especially in the field of grape farming. *AGORA International Journal of Economical Sciences*, Vol. 18, No. 2, pp. 11-27, <http://univagora.ro/jour/index.php/aijes>, ISSN 2067-3310, E-ISSN 2067-7669.
8. World Bank. (2021). *Agricultural Policy and Market Development in Azerbaijan*. World Bank Report.
Retrieved from www.worldbank.org
9. Khan, S. A., & Hussain, S. (2018). Supply Chain Management and Marketing Strategies in Agro-Industry: A Comparative Study. *International Journal of Food Science and Technology*, 17(6), 411-428.
<https://doi.org/10.1016/j.ifst.2018.07.010>