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## Section 1. Marketing

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### THE NEED TO IMPROVE MARKETING RESEARCH IN COMMERCIAL BANKS OF UZBEKISTAN

**Abstract.** This article describes the essence of marketing, the factors of organizing marketing activities, the need for marketing research in the banking sector. In order to reveal the topic and study the current state of marketing research in commercial banks of Uzbekistan, separate sections of marketing research of JSCB “Kapitalbank” were analyzed.

**Keywords:** banking sector, consumer, client, bank marketing, marketing research, advertising, questionnaire, commercial bank, competitiveness.

#### Introduction

Marketing in the banking sector is based on the experience of financial institutions and has incorporated all the achievements of general marketing theory. If the purpose of marketing in the market for other goods and services is to identify all the needs of consumers and identify opportunities and ways to satisfy their problems, then marketing in the banking sector, along with the above, also means a bank risk level.

Bank marketing acts in accordance with foreign and domestic policies, ideology and tactics and the specific socio-political and economic situation. Marketing activities begin with an analysis and potential demand for banking services. Having a portfolio of ready-made services, the bank enters the market, determines their price in advance, depending on the level of costs and market conditions, and receives a certain profit after its implementation. Decision-making in a banking institution is carried out on the basis of a marketing information bank.

The organization of marketing activities depends on many external and internal factors. Internal factors include economic and psychological. The main economic factors include the size of the bank’s authorized capital, the number and quality of clients, etc. Psychological factors are determined, first of all, by the attitude of the bank’s management, its founders and counterparties to marketing activities. There are several options for creating marketing services. In particular, a marketing service may include [1]:

- 1) part of any organizational direction of the bank;
- 2) independent activity of a commercial bank;
- 3) a means of coordination and control of all activities of a banking institution.

In banking practice, the following types of marketing activities can be used:

- a) the functions of individual employees of the marketing department, organized by geography, i.e. they serve separate geographically separate markets;

b) the market principle, according to which the specialization of employees is carried out in certain social groups and communicative audiences that make up their market segment;

c) the commodity principle, which determines the distribution of marketing functions of employees in the field of banking services, regardless of the market affiliation of consumers;

d) a matrix system of marketing organization based on the specialization of both goods (types of banking services) and markets, depending on the specific situation.

The peculiarities of marketing in the banking sector are associated not only with the development of banking activities and thus with the efficient use of funds, but also with the peculiarities of monetary circulation, which is the object of all banking activities. It follows that marketing in the banking sector should be aimed primarily at accelerating cash flow.

The end result should be the collection, analysis and marketing research of marketing information in the banking sector and, on their basis, the preparation of proposals for the bank's commercial services on the prospects for the development of banking services and pricing policy.

However, not all commercial banks in Uzbekistan have a developed marketing system and are not considered one of the main means of obtaining information about customers. Also, in most commercial banks, marketing consists of advertising and PR. There are practically no areas such as questioning, segmentation and the development of competitive strategies that are used in the experience of commercial banks in foreign countries.

In accordance with the Decree of the President of the Republic of Uzbekistan "On the Strategy for Reforming the Banking System of the Republic of Uzbekistan for 2020–2025", ensuring the financial stability of the banking system by attracting current managers, introducing technological solutions for assessing financial risks, expanding the scope and improving the quality of banking services by attracting

the best world practices and technologies [2]. The implementation of these measures will require, first of all, improving the marketing activities in banks, studying the market opportunities of the bank and the risks that await it in the future.

It should be noted that marketing research in commercial banks should become one of the main tools for assessing competitiveness, otherwise the rating of commercial banks in the country may not withstand international competition and may not achieve strategic goals.

In this regard, the study of this topic is also relevant.

### **Literature review**

Marketing research in banks and their content is as relevant as in other areas of the service sector, focusing on determining the wishes of bank customers and the level of satisfaction with the quality of service. This topic is relevant in the modern era of the banking and financial system and is in the spotlight of marketers, researchers and scientists.

Market analysis is the determination of the market situation and the current sales opportunity. Its main tasks are to identify and segment the bank's competitive position in the market. Competitive position is a position of a particular bank in the trade markets according to the results of its activities, as well as its advantages and disadvantages over other credit institutions [3].

Chinedu Ogbonnaya Sofonia, Ike-Elechi Ogba, Ernest Emeka Izogo examined how customers perceptions of a bank's marketing communication tools affect customer loyalty. A survey of 313 correct answers was received from Nigerian bank customers. To partially test the measurement model and test the research hypotheses, the procedure for modeling the structural equation of the smallest squares was used. The results show that the elements of bank marketing communications, including advertising, sales promotion, public relations and personal sales, are important predictors of customer loyalty, as opposed to direct marketing. This study will influence the renewal of marketing communications and the

formation of customer loyalty policies in commercial banks in Nigeria and other developing countries with similar business and economic histories [4].

It should be noted that a bank's marketing research should not consist only of advertising or community relations. It should include the development of strategies and bank tariffs aimed at the segments of the bank, the implementation of rebranding, regular surveys of consumer opinion. However, marketing research in developing countries, including commercial banks in Uzbekistan, is narrow in scope and includes advertising and PR.

There are many theoretical and practical researches in various areas of marketing research in the banking system, but it should be noted that the main purpose of this research is to prove the need for marketing research in commercial banks of Uzbekistan and to develop marketing research.

### **Research methodology**

In this scientific article, the descriptive method was used in conducting the research. The content, essence and reasons of application of bank marketing research were revealed. The role of marketing research in the activities of JSCB "Kapitalbank" was also analyzed.

### **Analysis and results**

The most traditional view of marketing research by banking services is as follows:

The market share of the bank's services is determined by the borrowed and placed funds. An important point in the study of market share to determine the development prospects of the bank is the structuring: on the sources that make up the passive part of the bank's balance sheet.

The market share for a particular service is determined by comparing it to the competitors in the market. It also processes demographic data by age, income, gender, etc., and if necessary, a model of the client's demographic development trend is created. Competition requires banks to fight on the basis of knowing the potential needs and opportunities of each customer and, most importantly, to determine

the motivation of bank customers to use its services or the reasons for switching to another bank. In its activities, the bank's marketing services work on the basis of the chosen concept. Client classification provides an information basis for an individual approach to the client, taking into account his or her needs and traditions [5].

The study should also take into account the main assumptions that customers provide to banks:

- capital adequacy and market position strength;
- Ability to make express payments within the CIS and abroad;
- convenient territorial location;
- Possibility to open an account in foreign currency;
- access to loans.

Banks that meet these requirements have large and wealthy customers. Their mission is to improve services, protect these customers for themselves by providing new services.

As of 2021, there are 33 commercial banks in Uzbekistan. These include state-owned, foreign-invested and foreign banks. One of the most stable banks in the country is the National Bank. However, its organizational structure does not include departments conducting marketing or market research [6].

Among the joint-stock commercial banks, Kapital Bank is one of the banks that deserves the key indicators provided by the Central Bank and the positive assessment of international rating agencies. There is also a Marketing Department of this bank, which is one of the key links in the structure of the bank [7]. He also conducts marketing research at the bank. According to a survey conducted by the department, 76% of bank customers are satisfied with the quality of service. At the heart of this result, along with quality service, is active marketing research.

The Bank conditionally divides corporate clients into two main segments:

- large corporate clients;
- small business representatives.



The large business segment consists of the most demanding customers, who prefer to use the services of several banks, have large funds and use a full range of financial services. These customers require complexity in making payments and lending, as well as complex financial instruments. They prefer to work with highly qualified bank employees who know the specifics of the industry in which the client works.

The small business segment is important for the Bank because it provides an acceptable level of income, while at the same time effectively diversifying its customer base. Due to economic reforms and active support of small and medium-sized businesses by the state, the number of potential customers of the Bank is growing rapidly. In 2021, the customer service policy of this segment will consist of the development of customer service through remote or digital channels, where they will be provided with convenient solutions to monitor and manage the financial condition of their businesses. Further development of the digital channel will facilitate the work of client managers and open up opportunities for the introduction of new packages of personalized services, taking into account the specifics of the industry.

In the formation of the customer base, the main focus is on customers who have large funds in their accounts and have a good degree of stability of these funds. This will increase the balances on the accounts of legal entities to 2.5 trillion soums (including in foreign currency) by the end of 2021.

According to forecasts, the maintenance of corporate clients' accounts in the national currency will bring in at least 64.8 billion soums in commission income, and the maintenance of foreign currency accounts and support of foreign economic activity will bring in 165.0 billion soums.

Particular attention is paid to attracting time deposits of legal entities to ensure the stability of the resource base. By the end of 2021, it is planned to increase their balance to 1160.1 billion soums (including in foreign currency), while their interest expenses will amount to 98.3 billion.

The attracted funds will be the main source of financing the Bank's active operations, ie lending. In 2021, it is planned to increase the loan portfolio to 5.9 trillion soums, of which 3.2 trillion soums are loans in national currency and 2.7 trillion soums in foreign currency equivalent.

During 2020, lending to small and medium-sized businesses has been singled out as a separate area. The actual financial results for 2020 showed that this step was taken correctly. This was also confirmed by the optimization of credit allocation processes, the level of profitability and the small share of problem assets. In 2021, the balance of loans under the small loan portfolio is projected to reach 0.8 trillion soums.

In 2021, the Bank will strengthen its work in the field of trade finance. Active operations in this direction fall into the group of small risk categories and are a source of sustainable profitability. It is planned to increase the portfolio of new investments in this area to 0.9 trillion soums [8].

As can be seen, conducting marketing research in banks ensures that both the bank's mission and strategy are accurate and targeted.

However, in order to improve the quality of banking services, it is necessary to use questionnaires more often. For example, the following questions can be used to evaluate the effectiveness of bank advertising:

- Did you see the last advertisement of the bank?
- What is this advertisement aimed at?
- From what source did you see the advertisement?
- What color do you remember in the ad? and others.

### **Conclusion and recommendations**

As a result of the analysis, the following conclusions and recommendations were made:

- Ability to study, analyze and predict the market, the position of consumers and competitors, due to the fact that the banking system is characterized by high risk and is directly related to the behavior of consumers and competitors among the service sectors,

primarily for marketing research. The visitor must have a dedicated department or department, or use outsourcing services that conduct marketing research;

– It is very important that banks have their own segment. To do this, it is important that the key customers are a legal or natural person, have statistics on the age of the customers and the services they consume the most, and on this basis, create a marketing strategy;

– Marketing surveys of the bank should not consist of a single question, as in the case of JSCB

“Kapitalbank”. It should consist of separate areas to evaluate the effectiveness of advertising, a separate analysis of consumer preferences, a separate assessment of the usefulness of the bank site, a separate section to determine whether the brand needs updates, each containing at least 10 questions.

It should be noted that as a result of effective marketing research, the quality of services will increase and bank revenues will grow. This is why every commercial bank needs properly focused marketing research.

### References:

1. Бакун Татьяна Валерьевна, Обуховская Ирина Францевна. Современные тенденции банковского маркетинга: теория и практика // Вестник ОмГУ. Серия: Экономика. – № 2. 2014. URL: <https://cyberleninka.ru/article/n/sovremennye-tendentsii-bankovskogo-marketinga-teoriya-i-praktika/> (дата обращения: 07.01.2022).
2. Decree of the President of the Republic of Uzbekistan. “On the strategy of reforming the banking system of the Republic of Uzbekistan for 2020–2025”. No. PF-5992 dated 12.05.2020 // <https://lex.uz/ru/docs/4811025>
3. Цапиева О. К. Маркетинговое исследование банковских продуктов // Вопросы структуризации экономики. – № 3. 2005. URL: <https://cyberleninka.ru/article/n/marketingovoe-issledovanie-bankovskih-produktov/> (дата обращения: 06.01.2022).
4. Chinedu Ogbonnaya Zephaniah, Ike-Elechi Ogba, Ernest Emeka Izogo. Examining the effect of customers’ perception of bank marketing communication on customer loyalty, Scientific African,– Vol. 8. 2020.– e00383. ISSN2468–2276. URL: <https://doi.org/10.1016/j.sciaf.2020.e00383>; (<https://www.sciencedirect.com/science/article/pii/S2468227620301216>)
5. Гурьянов С. А. Маркетинг банковских услуг. URL: <https://www.marketing.spb.ru/read/m15/2.htm>
6. Bank structure. URL: <https://nbu.uz/uz/about-bank/respublika-apparati-tuzilishi>
7. “Kapitalbank” Aksiyadorlik Tijorat Banki Tuzilmasi. URL: <https://kapitalbank.uz/uz/about/central-office>
8. URL: <https://kapitalbank.uz/uz/about/business-plan>

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## **STUDY OF THE TUNISIAN CONSUMER BEHAVIOR TOWARDS THE SUBSTITUTION OF SEED OIL BY ENRICHED OLIVE OIL BY NATURAL EXTRACT AND MARKETING STRATEGY**

**Abstract.** In Tunisia, the consumption of olive oil is the lowest in the Mediterranean region although it is one of the largest producers in the world. Despite the nutritional value of olive oil and its proven ability to prevent cardiovascular disease and certain cancers, local consumption is monopolized by seed oils (mainly soybean oil) subsidized by the state. This work aims to study the attitude of Tunisian consumers towards the substitution of these imported oils by the consumption of olive oil in case of its subsidy and the marketing strategy to adapt for promoting it. The market survey showed that the main cause of the orientation towards imported oils is the price, and that 2/3 of the respondents have seen their consumption of olive oil decrease because of its high price although they look for quality when buying a food product. 65% of respondents showed a positive attitude towards the substitution of seed oils by olive oil enriched with natural extracts of olive leaves by demanding a price not exceeding 5 dt for a liter.

**Keywords:** Enriched Olive oil, consumption, behavior, survey, marketing strategy.

### **Introduction:**

Olive oil is an essential part of peoples' diet in the Mediterranean region thanks to its flavor and culinary value as well as its nutritional properties and biological effects on human health linked to its natural antioxidants [1].

Tunisia, is one of major producers of olive oil (OO) in the world with an average of 187.000 tons per year and a contribution of 19% in world exports

(IOC, 2020). Unfortunately, this potential is not reflected by the level of national consumption, recording the lowest level in the Mediterranean region (3.4 kg/inhabitant / year [2]). The Tunisian consumer, according to data from NIS (NIS: National Institute of Statistics of Tunisia <http://www.ins.tn/>), shows a preference for imported seed oils (from 6 to 18 kg/inhabit/year between 1990 and 2019), a trend reinforced by the oil policies in Tunisia that



have given priority to the export of OO and have subsidized the prices of these imported oils. Indeed, the evolution of the consumption of total food oils in Tunisia over the past 30 years shows an upward trend in vegetable oils against a stagnation or even a regression on certain periods of olive oil consumption.

There are two types of imported oils on the local Tunisian market: subsidized seed oils (SO) (soybean oil, rapeseed oil) and non-subsidized vegetable oils (NSO) (corn oil, sunflower oil). Today, Tunisia imports an average of 160.000 tons of seed oils per year and the expenditure on subsidies supported by the General Compensation Fund GCF reached about 250 million Dinars in 2019 representing the second most important product after cereals [3].

This policy stabilized the price of subsidized oils (SO) at less than 1/6 of that of olive oil over the past twenty years. This created an important price gap with olive oil has generated changes in consumption habits at the level of social categories particularly those with low incomes showing an increasing orientation towards subsidized vegetable oils (Soy, rapeseed), of low nutritional quality compared to olive oil [4].

On the other hand, during the high production campaigns of olive oil, Tunisian exports are limited by the quota (56700 tons) set by the agreement of the CHTA (Complete free trade agreement) to the European Union the first market of Tunisian OO. This constraint induces a stock of about 15.000 tons (NOO (National oil office of Tunisia), 2021) which makes the promotion of the consumption of this product an obligation to absorb this surplus.

This situation leads to significant losses; at the level of the quality which risks to be deteriorated in the long-term and the selling price which will be decreased, added to the cost of storage.

From a health point of view, diabetes, cardiovascular diseases and cancers are the first causes of mortality in Tunisia [5]. This observation encourages the adoption of a healthy lifestyle of which the diet is a major part to fight more effectively against these diseases.

Olive oil plays a major role in the prevention of risk factors for cardiovascular diseases, such as dyslipidemia, hypertension and diabetes [6]. Therefore, studies carried out in Greece and Harvard have shown a reduction of several types of cancers during the consumption of olive oil such as, breast, colon, epidermis, esophageal and prostate cancers [7].

Consequently, the decision makers of the olive sector in Tunisia are called to promote the consumption of olive oil, by several ways.

A solution that could improve this situation, the stabilization of olive oil by its enrichment with natural extracts of plants in order to preserve its quality and consequently absorb the stock in case of trouble of liquidation on the local and international market. This way has been the subject of several studies [8; 9; 10] and upstream its effectiveness during storage. Moreover it could encourage the Tunisian consumer to substitute seed oils by olive oil especially that its price will be lower than that of an oil of the current year.

However, the studies of the attitude of the consumers towards these products remain limited. Consequently, it is necessary to start first by a study of the behavior of the Tunisian consumer towards an enriched and stabilized olive oil, with lower price.

Indeed, behavior is the way we act or react to a situation. The study of consumer behavior helps on decision-making, brand positioning, advertising strategies and the choice of distribution channels. Studying consumer behavior is an indispensable tool because it helps guide a company's business decisions and reduce uncertainty about the choice of target consumers [11].

Faced with these circumstances, several questions arise: What are the factors influencing the Tunisian consumer choice when buying a food product? Is he ready to substitute seed oil by a new functional olive oil with a lower price? Moreover, what price could encourage him to do it?

In this context, a study of the behavior of Tunisian consumer vis-à-vis edible oils was conducted to analyze the possibility of replacing imported seed oils by this new product, to try to determine an encouraging

price level and to build a strategy for developing its consumption based on marketing tools.

### **I. Methodology**

In this study, the consumer survey was conducted face-to-face, in supermarkets, public gardens, and colleges. This approach allows to reach a large spectrum of consumers, and to touch different age and social categories, geographically dispersed. The socio-economic survey on the behavior of the Tunisian consumer towards olive oil and the factors influencing his choice was carried out in five stages:

- The development of the questionnaire according to the objectives of the survey, previously defined;
- The collection of the answers;
- The analysis of the results by the statistical software SPSS (version 23.0);
- Identification of target customers through market segmentation;
- Elaboration of an adapted marketing strategy.

The processing of the survey data was carried out according to two methods.

#### **1.1. The one-dimensional method (flat sorting)**

This method represents univariate distributions giving the relative frequencies of each variable and constitutes the simplest examples of statistical tables. These tables are of great importance for reading quantitative data [12].

#### **1.2. The two-dimensional method (cross-tabulation)**

After coding the answers in a form suitable for execution by the SPSS software (version 23.0), this method represents distributions with two variables. It consists of crossing the results of two variables in pairs (cross-tabulations, or two-dimensional cross-tabulations or double entry tables) in order to determine whether there is a significant correlation between two defined variables [12].

### **2. Results and discussion:**

#### **2.1. Sample description:**

The sample studied by our survey is composed of 400 people. The data mentioned in the question-

naire, such as gender, age, socio-professional category and geographical area, allow to identify the characteristics of the spectrum surveyed.

The sample is divided into 63.9% women and 36.1% men, with a majority aged between 25 and 40 years (59.1%).

The results of the survey show that 33.1% of respondents are executives, 37% students and 15% employees which explains that 92% of them have a high level of education. These results can give a logical overview of the attitude of the Tunisian consumer towards the consumption of olive oil, especially since more than 60% of respondents are responsible for the purchase of food products in their family. The geographical origin of respondents is diversified which allows to expand the target and reach consumers in regions producer or not olive oil.

#### **2.2. Market study results:**

##### **2.2.1. Olive oil Consumption:**

Results showed that 97.3% of the respondents consume olive oil against 2.7% who do not.

Regarding the purchase motivations, 166 respondents are looking for good quality when buying a food product and in particular for olive oil and 103 answers assert the requirement of quality and taste for the choice of food products. However, 139 of the interviewees stated that they consume olive oil by habit or family tradition. Those who do not consume olive oil explain this choice mainly by its high price (Figure1).

This result encourages the new olive oil consumption, and an opportunity to attract consumers on the local market by the quality of olive oil which will be stabilized and improved by natural extract [10] and by the price which will be lower than that of an olive oil of the current campaign.

Indeed, 72% of current olive oil consumers in Tunisia, justify their brand choice by the quality-price ratio. In addition, 47% of consumers prefer organic extra virgin olive oil. This new concern for health and the regression of purchasing power represent a favorable asset for the consumption of this new product.

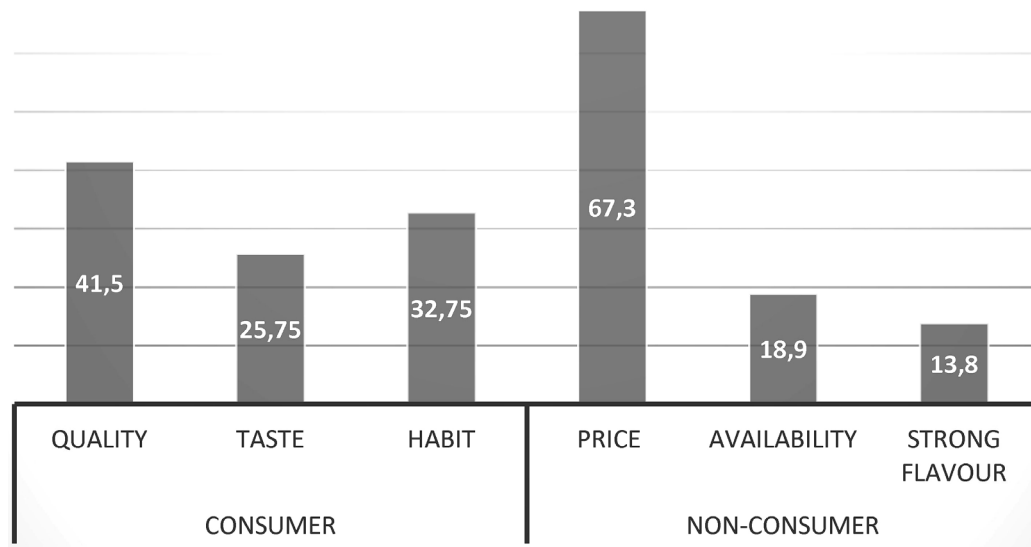


Figure1. reason for the choice of consumption or not of olive oil

With regard to the frequency of olive oil consumption, we find that 50.7% of interviewees consume it frequently, largely (91%) for seasoning, but for cooking the Tunisian uses imported oils (36% seed oil and 45% subsidized soybean oil).

Packaged olive oil does not yet attract the Tunisian consumer probably because of its high price compared to bulk olive oil.

It should be noted that 67% of respondents have seen their consumption decrease in the last two years, mainly because of its high price (52%) and the loss of its quality during storage (18.3%).

In order to understand consumer behavior towards enriched and stored olive oil, we asked a question about the willingness to substitute seed oil with a stored and enriched olive oil with natural extracts from olive leaves at a price below the current market price. The attitude of consumers is favorable because 64.9% of the sample show a positive or very positive attitude, against 22% who are still neutral and the rest of consumers seem attached to their habits. This shows that the decision to put on the market new categories of olive oil is appreciated by more than 2/3 of consumers.

Regarding the price, the majority of consumers demand a price between 3 and 5 DT for a liter of new olive oil.

#### 2.2.2. Results using the cross-tabulation method: Bivariate analysis

The analysis of the investigation data was carried out using the bivariate or bidimensional method. This method was adapted to determine whether there is a significant correlation between two variables in order to better understand and manage the issues that reside between the different parameters. The coefficient calculated is the Pearson coefficient which is an index reflecting a linear relationship between two continuous variables taken in pairs. This correlation coefficient varies between  $-1$  and  $+1$ . A negative value (negative correlation) means that the two variables are inversely proportional and a positive value indicates that the two variables move in the same direction. A significance level ( $p < 0.05$ ) reflects a significant relationship between these two variables. On the contrary, a significance level higher than  $0.05$  ( $p > 0.05$ ) indicates a lack of relationship between these two variables.

In the context of our study, the objective of applying this method is to investigate the determinants of the purchase decision of an extra virgin olive oil stored and stabilized by the phenolic extracts of olive leaves (Arfaoui et al. [10]). The correlation between the attitude of the consumer towards the new product, and his age in the first place, his income in the

second place and the frequency of purchase of olive oil to be able to determine the target.

The results showed a positive Pearson's coefficient for the correlations attitude-income and attitude-age (table 1). This shows that consumer in-

Table 1. – Bivariate correlations attitude-income; attitude-age; attitude-frequency of purchase

	Income		Age		Purchase frequency	
	Pearson Coefficient	Sig (bilatérale)	Coefficient Pearson	Sig (bilatérale)	Coefficient Pearson	Sig (bilatérale)
Behaviour	0.22	0.006	0.14	0.04	-0.008	0.23

All studied variables are significant at the 5% level. The negative correlation between the preference for the new product and the frequency of purchase of olive oil shows that the subjects who do not consume olive oil frequently are the most interested in this product, which may be related to its price which will be lower than the current price of oil. This category constitutes an opening to recruit new consumers of olive oil.

### 2.3. Marketing strategy:

The objective of any company is to improve its profits by increasing sales. It is therefore necessary to stimulate demand in order to attract new customers or to offer new opportunities to current customers. Stimulating demand requires a process of reflection that leads to practical actions on some or all of the elements of the marketing mix (products, promotion, distribution and price), to guarantee the effectiveness of these actions, we must study the consumer's behavior in order to know his profile, his needs, his tastes, his perceptions and his criteria of choice.

It is important for the company, even before putting a product or service on the market, to learn about the real needs of consumers and to design the product or service according to their needs, then the information collected allows to develop effective marketing strategies, which has been done in the above.

These strategies include promotional tools, distribution methods and sales techniques aimed at highlighting products and services and therefore stimulating demand.

come and the purchase of this new stabilized olive oil are proportional. In addition, older people show a positive attitude towards this product than younger ones who are generally not interested in the nutritional side of food.

In all cases, marketing decisions must be based on a perfect knowledge of needs, desires, buying habits, and the decision-making process. Any decisions that fall outside this rule can lead to problems that are even irreparable for organizations. Our market research allowed us to determine the profile of target customers, their preferences and expectations and to establish an appropriate marketing mix strategy. The marketing mix brings together four fundamental elements known as the 4 Ps: Price, Place, Promotion and Product.

The marketing mix is the choice, the dosage and the combination of the means with which the company wishes to act on the market. Given the number of these means, even after having grouped them into four groups, it will be necessary to proceed with an arbitration, notably when allocating resources.

From the correlations studied between the predisposition to buy enriched and subsidized olive oil and the profile of the consumer, we can recommend targeting a female clientele, with a moderately high income and belonging to a more or less high socio-professional category. Indeed, these characteristics were found to be associated with the purchase decision and the favorable attitude towards stabilized olive oil. On the other hand, the taste, smell, color, and high nutritional value of the product and its stability over time will offer a differential advantage over existing products on the market and additional value for future consumers.



Regarding the marketing strategy, it should emphasize the promotion and awareness of consumers through advertising at the point of sale and specialized media (magazine, internet, multimedia ...) of the benefits of olive oil consumption. In this regard, it would be appropriate to create an identity to this product to promote it in the range of extra virgin olive oil appreciated nationally and internationally.

Regarding the places of distribution, our survey has noted the impact of the non-availability of the product on the decision to buy. Hence, it is recommended to expand the places of sale of our product in supermarkets, points of sale of specialized dietetic stores. The volume sought is that of small bottles in tourist areas, supplements in bags in restaurants and small cubes in general.

#### **Conclusions:**

Social policies applied in Tunisia are largely linked to measures of subsidies and pricing of basic necessities such as edible oils, the price and income effect of which are decisive in consumer decisions. This explains, despite the benefits of olive oil on health, the orientation of the Tunisian consumer towards imported seed oils, a large part of which is subsidized by the state.

Therefore, the consumer should be able to access the local product at reasonable prices. The launching of an olive oil enriched by the natural extracts of olive leaves, on the local market, could be a solution to

encourage the consumption of olive oil. Moreover, this product has been proposed as an alternative to the seed oils and to the olive oil of the current campaign having a high price compared to the purchasing capacity and could constitute a solution to promote local consumption and absorb the annual stock (15.000 tonnes on average) during high production seasons.

The objective of this work was to study the attitude of the Tunisian consumer towards this product, and the factors influencing his choices. The results showed a positive attitude towards this product of about 65% of the interviewees. The most attracted tranche are mainly women, and older people with a middle income.

The availability of olive oil and its access seems to be among the factors that discourage the purchase after the price. The marketing strategy proposed according to the correlations found, targets first the price reduction compared to the recently processed olive oil.

Concerning the place, this new product could be commercialized in the restaurants as a supplement with the sandwiches, in the tourist zones, in the air companies and by delivery at home by order on Internet site, this to target the maximum of customers.

The final objective could only be achieved by making consumers aware of the health benefits of olive oil and olive leaf extracts.

#### **References:**

1. Erraach Y., Jaafer F., Radić I., Donner M., Gerini F. Sustainability Labels on Olive Oil. A Review on Consumer Attitudes and Behavior. *Sustainability* – 13. 2021. – 12310 p. URL: <https://doi.org/10.3390/su132112310>
2. IOC: International oleicol council. Newsletter – N° 145. 2020.
3. Ministry du commerce, 2020. Available at: URL: [http://www.commerce.gov.tn/Fr/liste-des-prix-des-produits-subventionnes\\_11\\_108](http://www.commerce.gov.tn/Fr/liste-des-prix-des-produits-subventionnes_11_108)
4. Foscolou A., Critselis E., Panagiotakos D. Olive oil consumption and human health: A narrative review. *Maturitas* – 118. 2018. URL: <https://doi.org/10.1016/j.maturitas.2018.10.013>
5. Ministry of Health, Ministère de la Santé. 2019. Statistiques nationales sur les causes de décès en Tunisie 2020. Available at: URL: <http://www.santetunisie.rns.tn/images/statistiques-deces2021.pdf>
6. Sebbagh N., Cruciani-Guglielmacci C., Ouali F., Berthault M.-F., Rouch C., Sari D. C., Magnan C. Comparative effects of *Citrullus colocynthis*, sunflower and olive oil-enriched diet in streptozotocin-induced



- diabetes in rats. *Diabetes & Metabolism* – 35. 2009.– P. 178–184. URL: <https://doi.org/10.1016/j.diabet.2008.10.005>
7. Owen R. W., Haubner R., Würtele G., Hull W. E., Spiegelhalter B., Bartsch H. Olives and olive oil in cancer prevention. *European Journal of Cancer Prevention* – 13. 2004.– P. 319–326. URL: <https://doi.org/10.1097/01.cej.0000130221.19480.7e>
  8. Boulares M., Bezzezi A., Arfaoui M. Improvement of Tunisian ‘Chemlali’ extra virgin olive oil stability with rosemary and laurel herbs and essential oils. *Rivista italiana della sostanze grassas*.
  9. Jaber H., Ayadi M., Makni J., Rigane G., Sayadi S., Bouaziz M. Stabilization of refined olive oil by enrichment with chlorophyll pigments extracted from Chemlali olive leaves. *European Journal of Lipid Science and Technology* – 114. 2012.– P. 1274–1283. URL: <https://doi.org/10.1002/ejlt.201100176>
  10. Arfaoui M., Boulares M., Bezzezi A., Ayachi S., Ghrab M., Jouini N. H., Hassounna Boudiche S. Effect of the enrichment with natural antioxidants obtained by maceration or ultrasound-assisted extraction from olive leaves on organic extra virgin olive oil *Rivista italiana della sostanze grassas*. 2021.
  11. La Grange L., DonJones T., Erb L., Reyes E. Alcohol consumption: Biochemical and personality correlates in a college student population. *Addictive Behaviors*.– Vol 20.– 1. 1995.– P. 93–103. URL: [https://doi.org/10.1016/0306-4603\(94\)00049-5](https://doi.org/10.1016/0306-4603(94)00049-5)
  12. Jean-Paul Grémy. Introduction à la lecture des tableaux statistiques. 2003. Available at: URL: <https://www.scienceshumaines.com/textesInedits/Gremy.pdf>

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## **CLARIFICATION OF THE ESSENCE OF THE CONSUMER MARKET IN MODERN CONDITIONS**

**Abstract.** Based on the new economic conditions, for the first time, the fundamental problem of economic science is investigated – clarifying the role of the consumer market in the socio-economic development of the national economy in the context of the formation of new economic relations. The article examines a range of topical issues related to the assessments and content and essence of the consumer market, the formation of this market in the transformation period, analyzes various theoretical approaches to the concept of the consumer market, provides a typology of the consumer market based on various classification features, and classifies the main functions of the consumer market etc.

**Keywords:** consumer market, regulation of the consumer market, classification of the consumer market, function of the consumer market, regional market.

Due to the ongoing long-term global economic crisis, the consumer market is operating in the most difficult and adverse conditions. Many economists note that the ongoing processes are systemic. Reforms car-

ried out in recent years in national economies have led to an increase in the supply of goods (abundance appeared on the market, mainly due to imported goods), the process of forming a housing market, insurance,

medical, educational services is intensifying, a market economy and small business, competition and other institutions have begun to develop.

It should be noted that, depending on the economy entering the recession phase, stagnation of industrial and agricultural production, a decrease in real incomes and living standards of the population, as well as an increase in consumer prices are observed.

Decrease in investment activity, depreciation of fixed assets can lead to a man-made economic crisis. Such a crisis could lead to a reduction in commodity production and a new wave of recession.

The future goals and objectives of the development of the national economy, the priorities of structural and investment policies, the principles of socio-economic structure are reflected in economic development programs and state programs for the development of the country's regions. However, it should be borne in mind that urgent measures must be taken to maintain a balanced consumer demand and supply of goods in order to normalize the situation in the consumer market.

Before identifying the role of the consumer market in the country's economy, in its development, it is necessary to clearly define the content of the concept of "consumer market".

The ideology of a market economy was formed over several centuries. Naturally, the changes that occurred in the productive forces and relations of production had an impact on the ideology of a market economy. As a result of this influence, changes have occurred in the apparatus of this concept, as well as in the content of the concept of market and consumer market.

It is no coincidence that there are different opinions about the concept of the market in the context of its content as an economic category. However, despite all this, they are based on purchase-sales transactions. These operations are carried out in the framework of the formation and development of market economic relations. It should be noted that the pace and boundaries of market relations depend

on how profitable, useful and favorable this exchange is for all participants in these relations.

At the center of all these relations is exchange and the market itself, on which a number of economic, financial and other operations are carried out. By the nature of the functional operations carried out by the market as an economic category in economic practice, there are various forms of its manifestation. The consumer market can be shown as one of the forms of market manifestation. On this basis, it would be correct to note that there is a close relationship between production and consumption, implemented through the consumer market. Economic practice mainly depends on the state of this relationship.

In general, it should be noted that there is nothing more natural than a serious attitude to the phenomenon of the market, its various forms and types of manifestation in countries with developed market economies, in particular – developed classical market economies.

Back in the 18th century, Adam Smith emphasized that the ultimate goal of production is consumption. Later, this idea was developed by K. Marx. He wrote that «production acts as a mediator of consumption, creates material for it, without it the consumer would not have an object ... There is no consumption without production, as well as there is no production without consumption, because, in this case, production would have no purpose» (März [9]).

The distribution of supply and demand between market entities occurs in the consumer market. In the process of the consumer market, the main goal of all economic life is realized – it is more fully ensured that the various needs of the population are provided in safe and high-quality goods and services. It should be noted that in the market of means of production there is no demand for such security.

Along with other markets (production market, labor market, financial market, credit market, etc.) the consumer market ensures the efficiency and development of the reproduction process. This is con-

nected with all production phases: production, distribution, exchange and consumption, which ensures the coordination of interests between the subjects of the processing process through the mechanism of the balance of supply and demand. The consumer market is actively involved in material and monetary circulation, regulates economic relations between individual subjects of reproduction. It provides the movement of money turnover in the country, and operates in the field of lending. Imbalance in the consumer market leads to disruptions in the country's financial system, the amount of money turnover is changing.

The consumer market operates along with the labor market, because supply and demand for labor affects the situation on the consumer market. At the same time, various forms and types of market manifestations, including the housing market, have a mutual influence on each other. The growth in the purchase of real estate by the population changes the structure of its expenses, reduces the amount of cash for the purchase of consumer goods, or the processes are going in the opposite direction. Accordingly, the development of the real estate market weakens the monetary burden of the consumer market.

At the same time, the consumer market interacts directly with the information market. The subjects of the consumer market determine the direction and volume of their activity, the channels of movement of goods based on the information they receive. All parts of the process of expanded reproduction, as a self-developing system, are an instrument of socio-economic development.

In the XIX–XX centuries, political economy was considered as a set of socio-economic relations in the field of exchange, because of which the social nature of labor was fully recognized.

In this context, the concept used by many modern economists has a deeper content. They view the market in the context of social reproduction.

Within the framework of the chosen topic, based on the study of the main directions and content of research conducted in the modern period, we can come

to the conclusion that over the past decades there is a special need to systematize the scientific views formed in connection with the consumer market.

On the other hand, there are important reasons that actualize research in these areas. It should be noted that one of the reasons for this is that in the economic literature of foreign countries there is no comprehensive concept of understanding the consumer market. Nevertheless, there is a need for a broad conceptual approach and all aspects of a complex economic system should be reflected here.

As a result, some authors identify this with the terms of sale of goods, the sphere of trade, while others, speaking of the consumer market, mean the whole set of market entities, or commodity-money relations, expressing the relationship between producers and consumers of material values and services.

In the third approach, the consumer market is considered as a set of sales and purchase transactions, and in the fourth approach, as the sphere of sales of goods and services intended for personal consumption and etc.

It should be noted that Ph. Kotler considers the consumer market as a sphere of buying goods and services for personal consumption by individuals and households (Kotler [1, P. 313]).

G. Hosking believes that the consumer market exists when people, directly or through intermediaries, meet with each other to sell or buy goods or services, or individuals or households buy or rent goods and services for personal (non-commercial) consumption (Hosking [8, P. 58]).

T. V. Pogodina believes that the consumer market is an integral part of the commodity market, and individuals, households, and other subjects of market relations participate in the purchase and sale of goods and services (Pogodina [4, P. 132]).

In the encyclopedic dictionary of economics, the consumer market appears in the form of such a market where individuals, households, or consumer goods and services (intended directly for human consumption) are either bought or sold (Rumyantseva [6, P. 383]).

V. A. Nikolayev believes that the consumer market is a system of economic relations linking production with consumption through the purchase and sale (Nikolayev [3, P. 111]).

All of the above views can be evaluated as a mechanical approach. These views concern only the external features of the process being characterized. However, the economic nature of the purchase-sale process remains outside the scope of this assessment. In accordance with this, on the basis of all the considered opinions and views, certain generalizations can be made. Based on these generalizations, a broad and comprehensive interpretation of the consumer market as an economic category can be given. Here, the consumer market appears as a system of economic relations:

- in its development, it is subject to the influence of the state, as well as market legislation and competition, pricing and marketing mechanisms;
- consumption operates on the basis of supply and demand for goods and services;
- a connecting link that coordinates the movement of goods and services from producers to consumers in the economic and geographical space on the basis of competition and the corresponding infrastructure, forms optimal proportions between these areas, the exchange of goods and services is based on prices formed under the influence of the market;
- the balance between the interests of market entities is carried out by fully ensuring consumer demand for market goods, solving social problems, matching income distribution to continue future economic activity between the producer and intermediaries.

In the definition associated with the content of the consumer market, the consumer market acts as an independent category, which, in turn, creates the conditions for the formation of a methodological approach that serves the solution of practical problems for its stabilization. All this creates favorable conditions for its further development and effective activities.

All this is of fundamental importance for the implementation of measures to regulate the consumer market. These regulatory measures usually serve to maintain a balance between supply and demand. In general, the consumer market is an integral part of the structure of a market economy, provides the movement of goods, completes the reproduction process. The consumer market has strong ties with the entire market system as well as has a serious impact on the system of economic relations. On the consumer market are reflected all the positive and negative changes occurring in production and industrial relations. The level of the consumer market allows us to characterize the state of the country's economy, as well as the effectiveness of the entire economic system.

In our research, we approach the consumer market as a reproductive one. The main points of this approach are as follows:

- 1) factors influencing the activities of this market;
- 2) the formation of supply and demand in the current and deferred consumer market from various sources: from the incomes of the population, business entities and the state, and other material and financial sources;
- 3) the development of infrastructure and the formation of a competitive environment for the consumer market.

### References:

1. Kotler Philip. Principles of Marketing: Short Course: [Transl. from English.] / – Moscow: Williams. 2011.– 488 p. (in Russian).
2. Malyshkov V. I. Moscow consumer market: yesterday, today and tomorrow.– M: Printing house named after A. S. Pushkin, 1997.– 221 p. (in Russian).



3. Nikolayev V. A. The economy of the municipality: essence, development problems and technology solutions. Publishing House of the RAGS. 1998.– 125 p. (in Russian).
4. Pogodina T. V. Innovation management: a textbook for students of higher educational institutions in the areas of training.– Moscow: INFRA-M. 2019.– 341 p. (in Russian).
5. Polyakova B. V. World Economy and International Business. KNORUS. 2005.– 188 p. (in Russian).
6. Rummyantseva E. E. New Economic Encyclopedia / E. E. Rummyantseva.– 4<sup>th</sup> ed.– Moscow: INFRA-M. 2011.– 882 p. (in Russian).
7. Smeshko O. G. Regional economy: development factors: monograph – St. Petersburg: Publishing House of the St. Petersburg University of Management and Economics. 2014.– 266 p. (in Russian).
8. Hosking G. Trust: money, market and society; (trans. from English A. Zakharova).– Moscow: Moscow School of Political Studies, 2012.– 79 p. (in Russian).
9. März K. Das Kapital: A Critique of Political Economy (Englisch Taschenbuch). 2011.
10. Gadjiyeva N. A. Marketing. Lap Lambert Publishing. 2018.– 688 p. (in Russian).

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## **CONSUMPTION OF ORGANIC FOOD IN TUNISIA AND CONSUMER BEHAVIOR: CASE OF OLIVE OIL**

**Abstract.** Food consumption has gone through important changes. In fact, consumers' awareness in terms of health safety and quality has grown through time which progressively translated for an increasing search of rights, guarantees and information. Organic products offer an alternative to preserve health and quality but demand for these products is still low because of their high prices compared to standard products. This study analyzes Tunisian consumers' behavior towards organic agro-food products with an emphasis on olive oil. Based on an exhaustive survey of 450 persons, the variables studied in this analysis have been submitted to the methods of Principal Components Analysis (PCA) and Hierarchical Ascendant Classification (HAC) utilizing the statistics software SPSS. The aim of this study is to analyze Tunisian consumers' behavior towards organic products in order to construct a marketing strategy for developing organic consumption based on market segmentation. Cluster analysis allowed us to define four groups of consumers on basis of homogeneous characteristics: information about organic products, socioeconomic characteristics such as high income and education level of consumers, perception of difference on taste and on quality and point of sale. These constitute important variables and are primary tools for elaborating future marketing strategies for organic olive oil.

**Keywords:** organic olive oil, consumer, Principal Components Analysis, market segmentation, Probit.

### **Introduction**

Nowadays, consumers more concerned about health issues related to food quality are returning

back to natural and organic products considering them as "noble" products. Despite the benefits of organic products on health and environment, their

consumption remains low due to their higher prices compared to conventional products [1]. In fact, lower productivity of organic farming and its high production costs explain this high price which has an adverse effect on their marketing and consumption (less than 1% in Tunisia-this trend is similar in Europe where organic consumption is about 10%) [2; 3]. Also, there is a lack of information on the benefits and the quality or “added value” of these products for the consumer.

In Tunisia, organic agriculture is considered strategy the weight at both national level in terms of lands. Tunisia is ranked first in terms of lands and second in terms of world exports in 2020. Since 1999, Tunisia has established a national strategy of organic agriculture with the aim to improve its international competitive position and increase the added value of the agricultural exports. For increasing land dedicated for organic farming various incentives were established in favor of investors such as trainings and subventions (30% for equipments and 70% for control and certification expenses) and also by progressively enhancing packaging and labeling instead of selling products in bulk. As a result of these incentives, organic lands reached rise from 217667 ha in 2015 to 355556 ha in 2020 (where organic olives cover 255000 ha, 5282 farms and 200 organic plants with capacity of 60000 Tons/day) producing 244190 Tons of diversified organic products mainly olives 100000 Tons and dates 6000 Tons. [4]. Exports increased from 1100 Ton in 2001 to over 14000 Tons in 2012 and 65000 tons in 2018 from which olive oil represents more than  $\frac{3}{4}$  of the total organic exports (48000 tons in 2020) [4]. The expansion of olive culture is due to the the easier conversion of exploitation from conventional to bio. Recently, Tunisia has obtained the accreditation as the 8<sup>th</sup> organic exporter to the EU market (77 of exportations) and launched the label “BIO Tunisia” in line with international standards, specifically designed to help consumers to recognize organic Tunisian products [5].

Although all the efforts to promote this sector, the consumption of organic products remains low in Tunisia and production is mostly intended for exter-

nal markets. These two factors have an adverse effect on their marketing and in Tunisia bio is about 1%. In Tunisia, this difference in prices between organic and conventional products ranges from 42% (dates) to 100% (olive oil), and can reach almost 500% for sugar and pasta. The local market is suffering also of a lack of a specific distribution network such as the existing some specific shops, limited spaces in big supermarkets and a weekly market of Soukra which was the result of an initiative of the Organic Department of the Agricultural Ministry launched in 2011 [6].

In order to better understand consumer perception of organic products and taking into account the lack of commercial information on these products, this study was based on a national survey on this subject. This survey targeted a population made up of a representative random sample of 450 individuals spread over different regions of Tunisia (Tunis, Sfax, Sousse, Zaghouan, Monastir, etc.) with the aim of gaining a better understanding of the attitudes of Tunisian consumers. This survey is based on two initial hypotheses that we will try to verify the relationship between knowledge and information on organic food and the purchase decision. These hypotheses are formulated as follows:

H1: Tunisian citizens are aware of the benefits of organic products but are not in favour of purchasing these products.

H2: Tunisian citizens who are aware of organic farming adopt favourable behaviours towards organic products.

Thus, from a theoretical point of view, this research aims to validate the relationship between consumer awareness and purchasing behaviour in this case for organic products by investigating the role of marketing in promoting these products among Tunisian consumers.

On a practical level, this study will also lead to a segmentation of the Tunisian market for organic products based on the criteria retained in the survey. This classification of consumers into homogeneous groups according to well-defined socio-professional and regional criteria will help guide the marketing

policy of any producer wishing to adopt adequate marketing strategies for organic products.

## 2. Methodology and data collection

From an economic perspective, this research will verify if there is a relationship between the consumer awareness and his purchasing behavior in the case of the olive oil emphasizing on the role of marketing in the promotion of this product for Tunisian consumers. On a more pragmatic level, this study will also help us to lead to market segmentation of Tunisian organic olive oil on the basis of the criteria in our survey. This classification of consumers in homogeneous groups according to clearly defined regional socio-professional criteria will aim to guide the marketing policy of organic producers wishing to adopt appropriate marketing strategies for their organic products [7].

Our analysis is based on an exhaustive survey of a sample of 450 consumers randomly chosen and interviewed face to face. Data were collected through direct interviews in different points of sale of olive oil (Supermarkets, hills, specific Bio groceries) in five regions of Tunisia known by their higher consumption of olive oil: Tunis, Sousse, Sfax, Monastir, Bizerte [8]. The survey was structured into sections including interest and awareness of organic products, socio-economic characteristics, sale point, frequency of consumption, perception of the quality of organic olive oil and difference on taste and price between

non organic olive oil. In order to summarize information obtained from the survey, the 62 variables studied in this analysis have been submitted to Principal Components Analysis (PCA) utilizing the statistics software SPSS and a Probit model to explain the most significant variables for purchase decision of organic products and olive oil in particular [9].

### 2.1. Principal components analysis

PCA is usually used to convert a great number of observations of possibly correlated variables into a set of linearly uncorrelated variables called principal components. The number of principal components is less than the number of original variables [10]. The first principal component has the largest possible variance (that is, accounts for as much of the variability in the data as possible), and each succeeding component in turn has the highest variance possible. The variables used in this survey can be classified into groups including characteristics of the consumer (age, education, sex, knowledge of benefits of organic products), place of purchase (oil production unit, supermarkets, from farmers), distribution (frequency of purchase, price) and the perceived quality and taste compared to conventional olive oil. All variables are dichotomous (dummy variables) depending on whether the consumer response is affirmative (yes) or negative (not) with the exception of the age variable was used as a continuous variable.

Table 1.– Specification of the variables used in the analysis

Variables	Definition of variables used	Nature
Fromoilfactory	The consumer buys organic olive oil from mills	0.1
Fromsupermarkets	The consumer buys organic olive oil from big surfaces	0.1
FromFarm	The consumer buys organic olive oil from farms	0.1
Frequency	The consumer buys organic olive oil frequently	0.1
Age	Age of consumer	continuous
Difference in taste	Difference in taste between organic olive oil and conventional	0.1
Difference in quality	Difference in quality between organic olive oil and conventional	0.1
Price	Price difference between organic olive oil and conventional	0.1
Education level	Higher level of education Higher level of education	0.1
Sex	Male or female	0.1
Information on organic	Knowledge of organic products benefits	0.1



As a first step of this analysis, a principal components analysis (PCA) was chosen with the aim of grouping variables on axis. In order to be able to apply PCA, there must be enough variability among variables to avoid singularity problems between

them. Correlation between selected variables (Table 3) justifies and consolidates the PCA, because we notice the inexistence of highly correlated variables and a determinant value of 0.125 which validates the use of PCA.

Table 2. – Matrice of correlation between variables

	<b>From-mills</b>	<b>Super-markets</b>	<b>From-farms</b>	<b>Frequen-cy</b>	<b>Age</b>	<b>Taste Dif-ference</b>	<b>Quality-difference</b>	<b>Price</b>
From mills	1.000	<b>-0.646</b>	0.316	0.168	-0.096	-0.289	0.279	-0.114
Supermarkets	-0.646	1.000	-0.329	-0.179	0.078	0.152	-0.022	0.016
From farms	0.316	-0.329	1.000	0.058	0.019	0.115	0.084	0.121
Frequency	0.168	-0.179	0.058	1.000	-0.007	-0.015	0.168	-0.217
Age	-0.096	0.078	0.019	-0.007	1.000	0.184	-0.241	0.015
Taste difference	-0.289	0.152	0.115	-0.015	0.184	1.000	<b>-0.742</b>	0.137
Quality difference	0.279	-0.022	0.084	0.168	-0.241	<b>-0.742</b>	1.000	-0.153
Price	-0.114	0.016	0.121	-0.217	0.015	0.137	-0.153	1.000

As shown in (table 3), variables related to the place of purchase such as oil mill and supermarkets (-0.646) and those relating to the quality of organic olive oil as, difference on taste and difference on quality (-0.742) remain highly correlated. However, this correlation does not will cause future singularity problems that several survey questions are a multiple response and the consumer has several options.

Secondly, concerning the signs of the relationships between variables can be said that consumers who want to perched bio speak directly to mills and farms and not to supermarkets. About the taste and quality consumers have misconceptions about organic and as in the case of most organic products, consumers believe that the improvement in quality is accompanied by a bad taste binds with the absence of treatment and additives.

**2.2. Cluster analysis**

In order to summarize information obtained from the survey, AHC was performed to complete the Principal Component Analysis (PCA) with the objective to create a typology of consumers which includes homogeneous groups of individuals according to a number of variables studied in the survey.

[11].To measure the similarity of variables between two individuals, we use the Euclidean distance. The aggregation method used to measure the distance between two groups was Ward’s method based on the meeting of the two classes that minimizes the increase in intra-class inertia. The result is shown on the chain aggregations and represented graphically in the dendrogram which indicates the number of classes and the order in which the successive aggregations were made.

**2.3. Probit model**

As the interest of this study is to see the reasons that influence the buying decision of organic olive oil, a probability model (Probit) was applied. As dependent variable of this model, purchasing decision has chosen in dichotomous mode (1 if the consumer buys olive oil and 0 if not).As explanatory variables and in addition to scores of 4 axes, given as result of the PCA analysis, some other variables were considered (table 5).In probability models, the most important is the percentage of correctly predicted values (91%) as well as the signs and significance of the coefficients of variables because the amplitude of coefficients is not important.



### 3. Results and discussion

#### 3.1 Survey Result

##### 3.1.1 ACP results:

The main goal is to reduce the data by grouping them into axes or factors whose number can range from 1 to 8 (total number of variables). (Table 3). The same table shows that the first axis explains 29%, the second 20%, third and fourth explain respectively 15% and 11% of the variance between the initial vari-

ables. From the 5th axis explanatory power becomes weaker and for this reason keep four axes that can explain 74.772% of the variability of the eight variables.

The number of axes to consider is also subject to the subjectivity of the analysis carried out, but tests or charts can facilitate the task and assist in decision making. The diagram shows the Eigen values in terms of number of components confirms that must be satisfied for a maximum of 4 components or axes.

Table 3. – Total Explained Variance

Components	Initial Eigen values		
	Total	Variance%	Cumulative%
1	2.316	28.954	28.954
2	1.609	20.110	49.063
3	1.165	14.566	63.629
4	0.891	11.143	74.772
5	0.812	10.150	84.922
6	0.701	8.765	93.687
7	0.336	4.200	97.888
8	0.169	2.112	100.000

After choosing the number of axes (four axis), for each one of them we must assign one name according to its most determining variables. (Table 4)

Axis 1: it is determined by the variable purchase olive oil from oil mills, supermarkets and farm. We can give him the name of *“place of purchase”*.

Axis 2: it is determined by the variables, the difference between organic and non-organic olive oil in

terms of taste and quality. We can therefore appoint quality. We can give him the name of *“quality”*

Axis 3: it is determined by the variables, frequent consumption of organic olive oil and its price. These variables are related to marketing. We can give him the name of *“marketing”*

Axis 4: it is determined by the variable age of the consumer and income. It is called *socio-economic perfil*

Table 4. – Component matrix after rotation (a)

	Components			
	1 place of purchase	2 quality	3 marketing	4 socio-economic perfil
From Mills	<b>0.789</b>	-0.304	-0.174	-0.037
From supermarkets	<b>-0.839</b>	0.036	0.136	0.079
From farm	<b>0.703</b>	0.098	0.176	0.065
Frequency	0.196	0.043	<b>-0.760</b>	-0.052
Age	-0.020	0.141	-0.005	<b>0.985</b>
Difference on taste	-0.047	<b>0.938</b>	0.024	0.055
Difference on quality	0.074	<b>-0.892</b>	-0.103	-0.121
Price	0.124	0.165	<b>0.773</b>	-0.054

3.1.2. Results of the Hierarchical Ascendant Classification (CAH)

The Ascending Hierarchical Classification (CHA) identified four homogeneous classes on the

basis of homogeneous characteristics taking in account the following aggregation table and dendrogram from SPSS results

Table 5. – Agglomération Schedule

Stage	Cluster		Coefficient s	Stage cluster first appears		Next Stage	
	Cluster 1	Cluste 2		Cluster 1	Cluster 2		
Dimension 0	1	434	0.000	0	0		
	2	318	0.000	0	0		
	3	271	0.000	0	0		
	...	...	...	...	...	...	
	445	72	74	370.903	428	433	446
	446	3	72	<b>413.231</b>	441	445	447
	447	3	8	<b>462.1441</b>	446	442	449
	448	1	2	<b>524.402</b>	444	443	449
	449	1	3	<b>600.024</b>	448	447	0

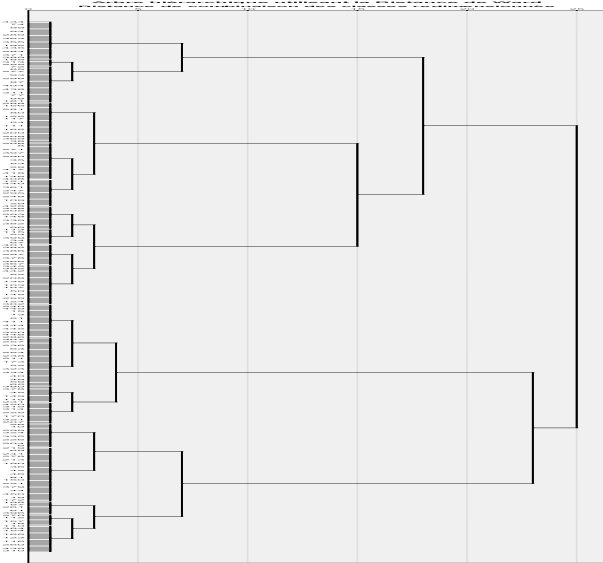


Figure 1. Dendrogram (From SPSS)

• *First cluster rational consumers*

The first cluster accounts for 23% of respondents and is mainly characterized by young consumers (age between 25 and 40 years) with an average income level. Consumers in this group join not for beneficial aspects of organic food but essentially commercial factors. So the lacks of attention perception of organic products as not competitive prices compared

to conventional products drive the consumers to not buy it because of its high price.

• *Second cluster: Fans*

This group accounts for almost 27% of respondents. Consumers in this group show a good attitude to organic products and a deep concern in its ethical and environmental aspects. With regard to socio-economic characteristics, consumers are between 40–50 years old, households in this group mainly consist of three members, benefiting from an above-average income, higher levels of education. This group pays attention to organic labeling and has a high frequency of the consumption of organic products in everyday life. Among the most commonly consumed by this class products we found organic olive oil, considered better for health.

• *Third cluster: Immature*

Includes 32% of respondents, who are young and low-income consumers, with a low level of studies and expressing no concern towards organic products. These individuals are not interested of organic products in their sales whose consumption appears Immature.

• *Fourth cluster: Natures*

This group accounts 18% of respondents whose age is above 40 years. They are aware of the benefits of organic on health and on environment, but their consumption is associated to really pragmatic motivation and hampered by the high price of these products.

To conclude, we can say that the small family size, high income and advanced level of education of consumers are pragmatic motivations to consumption of organic food products.

3.1.3. *Probit result:*

The results of the probit model are presented in (Table 3). Factor 1 (place of purchase) and Factor

2 (quality) had a positive sign, while factors 2 and 3 (marketing and age) are negative. The same on the level of higher education and sex were with positive signs. Knowledge of organic products and point of sale had a negative sign. As a conclusion, we could say that the place of purchase and the best quality of organic olive oil stimulates the frequency of purchase by the consumer. With regard to the place of purchase factor, which initially had a negative relationship with the purchase in supermarkets, it indicates that the consumer buys organic olive oil directly in oil factories or farms. Quality remains an important factor to increase consumption and frequency of purchase of organic olive oil.

Table 6. – Coefficients of the probit model

	<b>Coefficient</b>	<b>Degree of freedom</b>	<b>Sig.</b>
Place of purchase	1.294	1	0.036
quality	0.408	1	0.365
marketing	-4.298	1	0.000
Age	-0.243	1	0.609
Higher levels of education	0.045	1	0.958
sex	1.605	1	0.063
knowledge bio	-0.810	1	0.145
Point of sale	-0.038	1	0.966

The negative sign of factor 3 (commercialization of organic olive oil) indicates that the distribution is considered by the consumer as a barrier, especially if we consider the price (prices of organic products are higher than same conventional products), therefore demand/price elasticity is very high (price remains the main concern of Tunisian consumers and a major constraint for organic product consumption). As for the 4<sup>th</sup> factor (age), we observe that the negative sign (although not significant) indicates that younger people are more aware of the benefits of organic products. Since its recent introduction in Tunisia, the consumer has not yet included these products in his consumption habits. Concerning level of education, organic food consumption increases with high socio-professional category. Knowledge of organic products, with a negative sign, means that the con-

sumer is not stimulated by this factor to increase the frequency of purchase of organic products. Finally, place of purchase is not considered by the consumer as an important factor when purchasing.

**4. Conclusion:**

The information from a survey could serve professionals for a better understanding of consumer behavior in Tunisia towards organic products allowing them to act on the most significant factors in order to develop the consumption of organic products in Tunisia. In this respect, we may recommend to concentrate on marketing in distribution channels such as supermarkets highlighting the benefits of organic products. Also, applying prices close to conventional products will help targeting a range of consumers with high financial resources who are willing to purchase these products.

In general, this study has allowed first to rank trends and consumer perceptions towards Tunisian organic products (principal component analysis) and in the second place to look for the most important factors influencing the frequency of purchase of these products by reference to a product appreciated by Tunisian olive oil is organic. The information comes from a survey conducted in this regard in order to be as close as possible to the consumer. The statements that follow from this analysis will serve professionals to better understand consumer behavior and Tunisia play on the most significant factors in order to promote and consolidate the consumption of organic products in Tunisia. In this term we may recommend more publicity to better know the benefits of organic products, a price close to the most studied and conventional products, targeting a range of consumers with high financial resources and willingness to acquire these products.

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In addition to these marketing tools, organic olive oil consumption could be promoted on base of its better sensory quality. In fact, recent studies confirm that acidity is inferior when the olive oil was extracted from biological olive fruits. Moreover, the phenolic compounds in olive oil issued from the biological olive are higher than phenols in olive oil issued from conventional olives (Ben Mohamed et al. [7]). In fact, the phenolic compounds of olive oil have multiple biological effects, including antioxidant activity, nutritional properties suggested to play a incentive role in the development of organic oil consumption not only in Tunisia but also all over the world.

### References:

1. Zanolli R., Naspetti S. Marketing olive oil. From fork to field. In France, Options méditerranéennes. Series A. Mediterranean seminars 2013-number – 106. 2013.– P. 129–142. International seminar Present and future of Mediterranean olive sector Zaragoza, IAMZ.
2. Mtimet N., Asma S., Mhamdi N. Tunisian consumers perception and behavior towards organic food products. *New Medit.* – Vol 1. 2020. URL: [https://newmedit.iamb.it/bup/wp-content/uploads/2020/02/NEW\\_MEDIT\\_01-2020\\_pp\\_3-18.pdf](https://newmedit.iamb.it/bup/wp-content/uploads/2020/02/NEW_MEDIT_01-2020_pp_3-18.pdf)
3. Valagao M. Vers un nouveau modèle de consommation alimentaire: l'avenir du passé. In France, Kharthala, Alimentation et nourritures autour de la Méditerranée. CIHEAM, 2000.– P. 251–262.
4. National observatory of agriculture in Tunisia (NOA). 2019. URL: [HTTP://WWW.ONAGRI.TN/UPLOADS/IMAGES/FILIERES/BIO/MAI2019/FICHE-INDICATEUR-BIO-MAI2019.PDF+](http://www.onagri.tn/uploads/images/filieres/bio/mai2019/fiche-indicateur-bio-mai2019.pdf)
5. Laajimi A. L'agriculture biologique en Tunisie: un nouveau créneau en développement. Notes du CIHEAM N°35–2 octobre, 2007.
6. General Directorate of Organic Agriculture (GDOA). 2019.



7. Ben Mohamed M., Boudiche S., Kachouri F. et Bornaz S. Impact de la production biologique sur la qualité des produits agricoles et agroalimentaires: Cas de l'huile d'olive et des tomates. *Journal of New Sciences, Agriculture and Biotechnology*,– Vol. 16. Septembre, 2015.– P. 932–936.
8. Karray B. Enjeux de la filière oléicole en Tunisie et axes de développement dans le nouveau contexte politique. Les notes d "analyse du CIHEAM n 66-Avril" 2012.
9. Tomassone R., Dervin C., Masson J.-P. *BIOMÉTRIE, Modélisation des phénomènes biologiques*, Masson, Paris, 1993.– 553 p.
10. Kaufman J. D., & Dunlap W. P. Determining the number of factors to retain: A program for parallel analysis. *Behavior Research Methods, Instruments, & Computers*,– 32. 2000.– P. 389–385.
11. Perrien J., Cheron E. J. et Zins M. "Recherches en marketing: méthodes et décisions"; éditions Gaëtan morin; 1984.– 615 p.

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## FEATURES AND TYPES OF SITES OF THE COMPANIES OF THE B2B SECTOR

**Abstract.** The article is devoted to the strategy of online promotion of goods and services, which is currently one of the key elements of the company's marketing plan. According to the authors, it fixes the goals of advertising campaigns, basic approaches to marketing communications, tools for promoting a product to the market. The authors believe that the developed promotion strategy will help the company to find the required number of clients, which will ensure the profitability of the business. The authors reviewed and analyzed the features and types of B2B companies. The object of the research is the strategy of promoting the company's goods and services in the B2B sector.

**Keywords:** promotion strategy, b2b marketing, website development, contextual advertising.

### Introduction

Nowadays, potential customers turn to search engines to find solutions to their business problems, read blogs and visit websites to find the information they need.

A website is an excellent sales tool: it works around the clock, provides website visitors with the information and content they need to make an informed decision and allows them to interact with the business.

A properly configured and positioned website can be the beginning of a sales funnel in the B2B sector, contribute to the formation of a base of potential business customers among site visitors from the moment they click on the link to the readiness for sales.

Important characteristics of a B2B company website are:

### Visibility

It is important for any B2B company that a potential client can find a business on the Internet. If a company does not have a website or is not optimized for the required keywords related to what the business is doing, it will be difficult for stakeholders to find a site to interact with the company [1].

### Content

Site visitors will search for content that can help meet their needs. Using the site, you can post company content and create new pages for it at any time. In addition to the website, you can use social networks and e-mails to post content. The more relevant, high-quality, thematically oriented content there is on the site, the more opportunities for attracting and converting potential customers.

In addition, each content created will have its own URL and target a specific keyword, which will

provide more opportunities for interested parties to search the Internet. Thus, the more quality content a site has, the more organic traffic it will attract [2].

### **Advertising**

A B2B company website is a relatively small investment, relative to the cost of all business goals and objectives. From the very beginning of its operation, the search engine has been optimized and now it is tuned to work with potential customers. The site continues to deliver business results while it is online. The Internet has a much greater openness than any other channel, with the help of it clients can find a business anywhere at any time [3].

### **All Day Long Sales**

Having a website gives a business the opportunity to interact with potential customers around the clock and make sales. An online presence increases the number of contacts that impact a business on potential customers and helps it attract new buyers. With a website, a small business can quickly become an international business as it is visible worldwide and begins to grow and scale.

### **Building Business Credibility**

As the company continues to create and publish search engine optimized content on its website, its position in search has accumulated. Statistics show that having a website increases confidence in the business among potential customers. According to a Verisign study, 56% of those surveyed said they would not trust a business without a website. Thus, without a website, a company can miss out on more than half of its potential customers.

Consider the sites suitable for B2B companies and the specifics of their work.

An information site is a resource whose main purpose is to inform users about the current activities of a company. The content of such sites is widely presented as graphical diagrams and large amounts of text. I can find such sites in the structure of government organizations, religious groups, commercial and non-profit companies, organizations involved in public affairs [4].

Commercial sites are an important type of site for companies and organizations. The information on commercial sites is primarily intended for investors, sponsors, current and future partners, and clients. This site attracts new customers and partners and therefore increases the revenues of the organization. The content of the site comprises official information: the goods and services provided, contacts, bank details, persons of the founders and co-owners of the organization, data on the presence of branches and representative offices of the company. This type of site implies a large number of pages with separate pages for each section and subsection.

Combined type – combines the basic functions of both information and commercial sites. This can help to save the company's budget for the development of the Internet portal. When developing such a project, it is necessary to clearly define the main priorities and needs of the company, to determine what income is planned to be obtained from advertising. Some companies, when they first visit the site, offer the visitor to choose which section he wants to see. At the same time, one site works, occupying one domain zone [5].

Presentation site (business card). This is a small site mainly used to inform about the company's products, advertise new products, and get acquainted with upcoming promotions. This is a small ad on the web. Such sites, as a rule, have a simple construction scheme, the content of the site is based on colorful, juicy ads, bright, attractive fonts, and slogans. They are distinguished by an abundance of illustrations. The purpose of the site is to tell about a product or service.

Entertainment portal. This is a site designed to increase customer engagement through interesting and unusual content. This type of content may include special promotions, hands-on jokes, fun games, and quirky apps. All this work is accompanied by colorful animation.

Help site or navigator. This type of resource should help the buyer or client find the information they need, both about one product and about

all products in general. It can be a search engine, a reference site, a survey, and rating systems.

Analysis of the target audience of the company's services. Determination of the target audience, its interests, and purchase motives is necessary for the correct choice of channels and promotion tools, as well as the formation of a value proposition. In addition, the analysis will help determine which promotion tools are more profitable to use, what information needs to be placed on the site, which design is preferable to choose. Let's analyze the target audience [6].

Suppose that at the moment the company has 25% of the area leased to 7 different companies. First, you need to analyze existing customers, their characteristics, and purchase motives. It is necessary to draw up a questionnaire for interviewing representatives of existing companies, comprising 14 questions:

1. What industry does your company belong to?
2. Describe your key business processes?
3. How much stock do you have?
4. What and how has to be transported in business activities?
5. What or what premises does your company rent? (warehouse, production, office)
6. How long has your company been renting this space?
7. What is the area of the premises rented by the company?
8. How long has your company been in the market?
9. Where did you rent premises before (if the business is not new)?
10. Why did the company decide to change the place of the lease?
11. Where and how did you search for information about commercial premises?
12. Tell us about the other options you are considering. Why did you choose our company?
13. For how long are you planning to rent the space?
14. What do you like and dislike, as an employee, on the territory of the property complex?

15. How do you get to work?

16. How many minutes does your trip take on average? [7]

These questions help to identify the following parameters for drawing up a portrait of the target audience and segmenting it:

- Characteristics of the business that rents space;
- Characteristics of the areas that each type of business chooses;
- Purchase motives (what contributed);
- Reasons for choosing (what advantages are important);
- What needs to be improved in the conditions for employees of tenant organizations.

In addition, these questions help to understand how to build the promotion of rental services: what advantages to focusing on, what problems the purchase of our company's services solves.[8]

Interviews should be conducted using sound recording equipment. Based on the results of the interviews, the motives for renting space can be clarified, for example:

- Relocation due to business expansion, the need for a larger area;
- Moving from the suburbs to the city center;
- Search for a convenient transport location for the transportation of goods, etc.

The reasons for choosing the property complex of a company providing services identified, as a result of interviewing existing clients may be the following:

- Good condition of the premises, their readiness for operation (availability of electricity, heating, sewerage);
- Convenient geographical and transport location;
- Availability of a choice of premises for different purposes;
- Access control;
- Availability of internal infrastructure: roads and sidewalks, parking, canteen (quote: "employees will be comfortable").



The next step is to consider the requirements for tenants from the service company. A company may include the following desirable qualities of an enterprise:

- 1) Financial stability, timely payment of rent payments,
- 2) Preferred “clean” production, for example, assembly lines for technical goods, computer, household, and industrial equipment;
- 3) The preferred availability of citizenship of the country where the resident is located for all employees of the organization (in connection with the access control);
- 4) The enterprise should preferably not have the status of increased secrecy, since other organizations are supposed to be located on the territory;
- 5) The activities of the enterprise must be legal.

In addition, it should be noted that based on the characteristics of the territory, the availability of access control, which cannot be completely canceled, tenants cannot be organizations engaged in direct B2C trade in the territory, and other companies that require a constant flow of customers, for example, a fitness center, a clinic, shop [9].

Financial and educational organizations should be excluded. It is also important to focus on the ratio of production, warehouse, and office space: 50, 33, and 17%, respectively. This suggests that it is necessary to search mainly for leasing companies, and not for management companies. First, look for large and medium-sized enterprises. The most profitable for the company will be clients whose enterprises can occupy all 3 types of premises. These can manufac-

ture enterprises with warehouse stocks and management personnel.

Based on the analysis of existing tenants, the company’s attitude to potential customers, characteristics of the territory and premises, the following main audience segments can be distinguished:

- 1) Enterprises for the production and/or assembly of household or computer equipment;
- 2) Mechanical engineering;
- 3) Sewing factories, sewing production;
- 4) Medical or scientific laboratories;
- 5) Furniture factories;
- 6) Production of household chemicals or cosmetics;
- 7) Bakeries;
- 8) Packing shops;
- 9) State-owned enterprises of the nuclear or military industry [10].

Thus, the most target segments are enterprises for the production and assembly of household or computer equipment, medical or scientific laboratories, and packaging shops. But all of these segments should be considered as potential customers since their compliance with the requirements and rental conditions is quite high.

### **Conclusoin**

The analysis of promotion tools showed that the site is one of the most effective promotion tools in the B2B sector in the field of real estate rental. Having your own website will help increase the credibility of the company in the eyes of potential clients, it is most convenient to consider and select a property and quickly find contacts to communicate with the organization.

### **References:**

1. 4 Key Ingredients To An Effective B2B Promotions Strategy [Electronic resource] / Blog. Limehub, 2020. URL: <https://www.limehub.com.au/blog/4-key-ingredients-to-an-effective-b2b-promotions-strategy>
2. Durant J. Maximize ROI: How to Promote Your B2B Website/Blog. Bopdesign.com, 2017. URL: <https://www.bopdesign.com/bop-blog/2017/01/maximize-roi-promote-b2b-website>
3. Harr E. 11 Strategies for B2B Website Development [Electronic resource] / Blog. B2bnn.com, 2018. URL: <https://www.b2bnn.com/2018/04/11-strategies-b2b-website-development>
4. Frederiksen L. B2B Website Strategy: The Expertise Driven Sale/ Blog. Hingemarketing.com/ 2018.

5. Abbamonte K. How to Develop a B2B Marketing Strategy (Instead of a List of Tactics)/ Blog. Leadfeeder.com, 2020.
6. Promotional Strategy: Sound Your Horn /Publications. B2Binternational.com/ 2020.
7. Selling to Other Businesses: 8 Sales Promotion Methods for a B2B Market [Electronic resource] / Publications. Business.com/ 2020.
8. Patel S. The Top 11 Most Effective B2B Marketing Strategies for 2020.
9. Chen J. Contextual Advertising /Publications. Investopedia.com/ 2019.
10. Vrontas T. Contextual Advertising 101: How it Works, Benefits & Why It's Necessary for Relevant Ads/ Publications. Instapage.com/2020.

## Section 2. Management

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### FOREIGN EXPERIENCE OF REDUCING CONSTRUCTION TIME

**Abstract.** The subject of this research is administrative relations that arise in the process of reducing the construction time as a branch of material production that is carrying out erection of buildings and reconstruction of structures of various designation. The object of this research is the construction complex as a whole; companies of various corporate structure functioning on the investment-construction sector; organizational legal forms of interaction between the parties to the investment-construction process; state regulation in the sphere of major construction.

**Keywords:** technological processes, state regulation, investment and construction sector, the allocation of resources.

**Discussion:** Currently, specialists around the world are developing methods to speed up the pace of construction. Ways to reduce the construction time of buildings have a positive effect on the economic component of construction projects, help to effectively solve several social and environmental issues. It directed this improvement in construction towards the automation of production, the unification of structural units, and the reduction in the weight of the structures being erected, something inextricably linked with an increase in manufacturable.

In addition, to determine the value of the most probable value of labor productivity, classical methods of probability theory are used. The application of methods of probability theory assumes some array of values that describes the change in a random variable. However, it is important to note that the existing state standards for the application of probability theory methods establish the minimum value for the number of measurements in a sample [1].

The domestic construction management system assumes a traditional vertical structure, in which the role of the object of influence belongs to the divisions of the company or organizations that are subordinate to it. Abroad, the situation is unique – they're the construction project plays the role of the specified object. It based the described approach on the concept of management, covering such a process as implementing a construction project. We are talking about the type of integrated contracts when the organizer of the construction process bears the maximum responsibility for it. Integrated complex contracts used during construction provide a result in which different elements (scientific and technical, informational, social, economic) are combined, which leads to a synergistic effect that determines the horizon and direction of activities carried out during construction by an engineering firm. Verification of these elements is different qualitative characteristics.

As all stages of the project are implemented (from investment analysis to commissioning and during the consideration of the life cycle of the object to its liquidation), the probability of their identification increases.

It is advisable to refer to the concept of “efficiency” if it is necessary to evaluate the process within which various technological products and solutions (technical, managerial) are being introduced. It is a qualitative category, which is associated with the intensification of relations between the parties involved in the investment and construction process.

When talking about the main three parameters of project management, we are talking about time, quality and cost. High quality must be ensured in any case, this is a constant value that cannot be adjusted. The work on the project is considered completed only if the quality indicators are met. Consequently, only two of the three parameters are variable, their indicators are not fixed. It's about time and cost.

In reality, construction project executors, who focus only on quality, but maneuver in terms of cost and time, as a rule, are not able to solve the problem in full (complete the object on time, meeting the allotted budget). According to the study [2], only 12 out of 1449 projects (less than 1%) were successfully completed at the stated price or less. Not the best result was given by the second study, which covered 3000 additional objects [3].

Budget overruns (Cost parameter) are not necessarily directly related to project delays (Time). An increase in the number of working investments and equipment (i.e., an increase in cost) does not guarantee the completion of the project within the project time [4]. It is assumed that the correct use of the so-called time compression techniques (Time Compression Techniques – TCT) will contribute to the successful implementation of construction projects.

The previously undeniable attitude “Be the fastest or be the last” [5], today, in the sectoral application of deadline compression techniques, does not sound so categorically. But so far, not all companies

are aware of the need to introduce modern time management methods, without which it is problematic to compete in today's economic conditions. They need to remember this rule.

When planning and implementing construction projects, conflict situations constantly arise due to lack of time and other limited resources [6].

In the involvement's context of the TST or the “compression” of the production plan, the cost of the project increases because of the involvement of additional labor resources and technical equipment. Here, the project management needs to prove a corresponding increase in the project's profitability in the future.

The hierarchical model proposed for the development of strategies by M. Porter caused a wide resonance, with the help of which the competitiveness of companies in a complex business really increases. Project management is no exception.

The model includes Cost Leadership, Differentiation, and Focus [8]. For all structures, the “Time” parameter is very important. The most common measure of service quality is the SERVQUAL model (developed by Parasuraman, Berry, and Zeithalm in 1988). It is used in assessing the degree of customer satisfaction according to the following criteria:

- tangibility – equipment, personnel;
- reliability – the company strictly adheres to deadlines and high quality when delivering services;
- responsibility – the staff is accustomed to providing assistance to customers quickly and flawlessly;
- confidence – the professionalism and experience of employees inspires confidence in the company; empathy is an attentive attitude on the part of the company to each client [7].

These criteria depend on the “Time” component since the client requires not only the quality of service but also immediate execution.

Traditional project management provides for the presence of a margin of time – work begins a little earlier (ends later) of the deadlines specified in the project. The critical chain method provides for a



common time buffer for the construction project, which allows you to attract additional resources or increase the time of the project as a whole [10].

The time buffer provides project safety insurance, as it provides a margin of time for the entire project, and not for individual parts of it (unlike the Critical Path Method, CPM). Statistics show that the required buffer should be significantly less than the time reserves for individual jobs that make it up.

Effective management of a fast-cycle company requires new approaches since it is an integrated system, a complex that unites decision-making points aimed at coordinating interrelated actions to produce the products and (or) services required by the customer.

Next, we will describe as an example one of the sectors of the integrated management system – a cross-functional team of specialists representing different departments of the company. TST consists of two components – optimization and design. The first option – TST is used in an already implemented project, in cases where it is impossible to complete the work on time in any other way. The second – TST is laid during planning [8].

The application of TCT is a business strategy that replaces the traditional process of product or service development, project planning, and implementation, i.e. a sequential approach, with a parallel or simultaneous approach.

This strategy has some similarities with the organizational changes involved in implementing Total Quality Management (TQM) and is like the optimization process in the sequential approach described above. We can make larger organizational changes through widespread business process re-engineering (Business Process Re-engineering – BPR) [9].

According to Tamhain, effective control in parallel engineering, or, in this article, TCT, can be divided into three phases:

Phase I. Organizational systems design: using a systems approach; building on existing control systems; development according to customer requirements.

Phase II Creation of the system: formation of an implementation plan; initial testing of new technology; ensuring a high level of management and leadership; confronting fears and conflicts; early identification of problems and their resolution; encouraging the project team to improve the process; investment of time and resources.

Phase III. Management in competitive engineering and TST:

- effective project planning;
- formation of the command structure and production processes;
- creation of interfaces;
- staffing of the project team;
- communication of organizational goals and results;
- encouraging enthusiasm and interest in work;
- creation of productive communication channels;
- implementation of actions to strengthen team spirit;
- creating an atmosphere of collective responsibility;
- control of conflict and problem situations; instilling in team members a sense of interest and personal responsibility;
- attracting senior leaders among their allies;
- providing appropriate leadership support;
- creating healthy competition, but at the same time friendly environment [10].

One of the most important ways to successfully implement TCT is to create a team consisting of employees from different departments (Cross-functional Team – CFT). Some companies form them in the form of working groups. Such a cross-functional command is used when applying the Fast Pass method.

**Conclusion:** Thus, to date, specialists have not sufficiently explored a large subject area related to the use of time compression techniques, which suggests its further study and improvement. Complexity characterizes the area covering traditional construc-

tion project management, although managers are often forced to act in the presence of three parameters (quality, cost, time). Parameters and various participants have multidimensional interfaces, which further increases the complexity of project manage-

ment. With the right design, planning, and application of time compression techniques, the likelihood of success in areas such as project management and project management of construction projects increases.

### References:

1. Pearlson K. E. and Saunders C. S. *Managing & Using Information Systems – A Strategic Approach*. John Wiley & Sons. 2016.– P. 21–23.
2. Teh D. FAST TRACK Concept Application: Problem Identification, Problem Analysis, and Problem Solving Techniques. A paper presented at the 19<sup>th</sup> IPMA World Congress on Project Management. – New Delhi, India. November, 2015.
3. Meyer C. *Fast Cycle Time – How to Align Purpose, Strategy and Structure for Speed*. The Free Press, 2013.– P. 7–15.
4. Lock D. (Ed.). *Gower Handbook of Project Management*. 2<sup>nd</sup> ed. Gower Technical Press Limited. 2014.– P. 311–326.
5. Jiang S. L., Liu M., Lin J. H. and Zhong H. X. “A prediction-based online soft scheduling algorithm for the real-world steelmaking-continuous casting production”. *Knowledge-Based Systems*,– 111. 2016.– P. 159–172.
6. Pearlson K. E. and Saunders C. S. *Managing & Using Information Systems – A Strategic Approach*. John Wiley & Sons. 2016.– P. 21–23.
7. Al-Dhaheri N., Jebali A. and Diabat A. A simulation-based genetic algorithm approach for the quay crane scheduling under uncertainty”. *Simulation Modeling Practice and Theory*,– 66. 2016.– P. 122–138.
8. Slack N., Chambers S. and Johnston R. (2004). *Operations Management*. Prentice Hall. 2014.– P. 29–32.
9. Tran D. and Molenaar K. “Critical risk factors in project delivery method selection for highway projects”. In *Construction Research Congress 2012: Construction Challenges in a Flat World*. 2012.– P. 331–340.
10. Taghaddos H., Hermann U., Abou Rizk S. and Mohamed Y. “Simulation-based multiage approach for scheduling modular construction”. *Journal of Computing in Civil Engineering*,– 28(2). 2012.– P. 263–274.

## Section 3. Price formation

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### BINOMIAL ASSET PRICING

**Abstract.** In this project, I study the binomial asset pricing model and its application in derivative asset pricing. Specifically, using central limit theorem, I summarize the connection of the binomial asset pricing model and the famous Black Scholes asset pricing model. The computer simulation is conducted to prove the theoretical result. Additionally, I practiced the derivation of the Black Scholes option formula and employed it on Apple's call option pricing. The formula price is in great consistent to the option price observed in reality.

**Keywords:** Asset pricing, Central limit theory, binomial model.

#### 1. Motivation

Due to its function of risk hedging, financial derivatives has taken up a huge proportion of the financial market, with its estimated value far more than the sum of all countries' gross domestic product. Considering the importance of this market which includes options, futures, and so on, it is crucial for the common public to obtain a way of measuring the value of derivatives. In the case of option trading, asset pricing makes it practical to determine a strike price of option contracts that both buyers and writers could be convinced of.

#### 2. Financial Data Visualization

The return data is probably one of the most important examples of financial data. Due to its possibility of being extreme negative and extreme positive, the normal distribution is often used to describe its movement and distribution. Since the stock return is in the following formula relationship with respect to stock price:

$$\frac{S_1 - S_0}{S_0} = R_1 \sim N(\mu, \tilde{\sigma}^2)$$

It thus goes without saying that the stock price follows log normal distribution once the normal distribution is assumed by the return data. When I study and plot the financial return data of SP 500, it indeed demonstrates great normality.

Lastly, when I calculate the value of options using the black scholes model, I also discover that lognormal distributions can best describe the value of St.

#### 3. Model

##### 3.1 Some Definition

- Random variable.

According to The Practice of Statistics, Fifth Edition, for Advanced Placement (AP<sup>®</sup>) Statistics, a random variable takes numerical values that describe the outcomes of some chance process. Discrete random variables form a set of values with equal gaps between adjacent values, whereas continuous random variable is selected from a infinite set that covers the entire domain of the probability distribution.

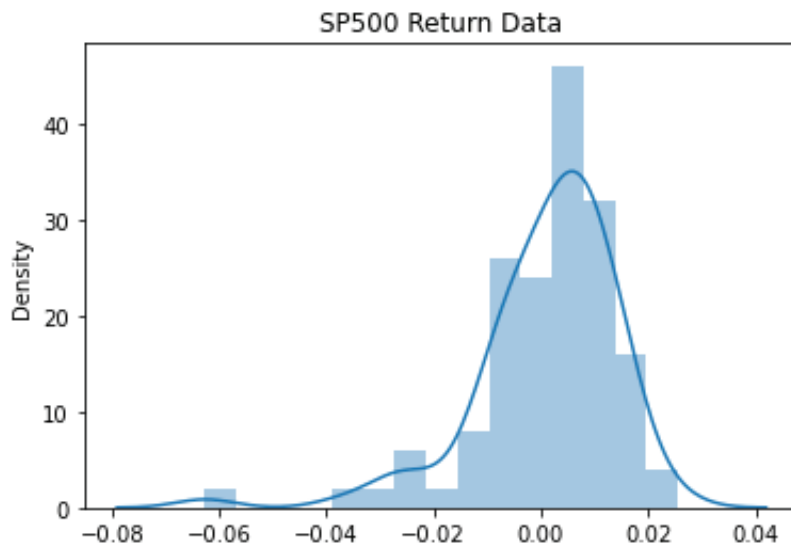


Figure 1.

- Expectation

Discrete

$$E[X] = \sum_{i=1}^n X_i P_i$$

where  $p_i$  is the probability for  $X = X_i$

Continuous

$$E[X] = \int xf(x)dx$$

where  $f(x)$  is the probability density function

- Variance

Discrete

$$VaR[X] = \sum_{i=1}^n (X_i - E[X])^2 \text{ or } E[X^2] - E^2[X]$$

Continuous

$$Var[X] = \int x^2 f(x)dx - E^2[X]$$

- Central Limit Theorem

The central limit theorem implies that when we have infinity sample data from one distribution, the sample means of the distribution follows the pattern of normal distribution.

$$\sqrt{n} \frac{\sum_{i=1}^n X_i}{n} \sim N(\mu, \sigma^2)$$

### 3.2 Model Setup

Given the initial stock price  $S_0$ , the price of the stock can either move up or move down. The model starts with a very simple bivariate case study where it assumes the stock price at next time step  $S_1$  can go up with percentage  $u$  and probability  $p$ , and it can

go down with percentage  $d$  and probability  $1-p$ . If we keep repeat the process  $n$  times, we have the following tree representation to describe the stock price movement trajectory.

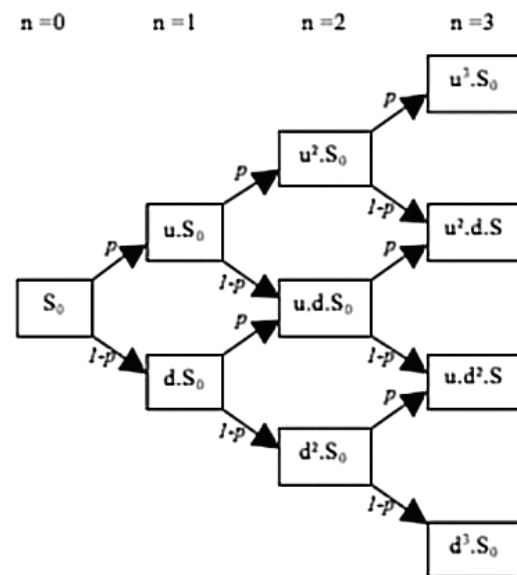


Figure 2.

If we adopt this model to describe the stock price movement, we could potentially derive the future stock price given the probability  $u$  and movement percentage  $u$  and  $d$ . Notice that for the future stock price, the trajectory doesn't matter, and we just need to count how many times does the stock price move up and down. The price movement dynamic might



seem to be unrealistic at the beginning, but the model could evolve step by step to a much more realistic model.

### 3.2 Binomial Probability

Suppose that after  $n$  time step, we reached at some future time step  $T$ , then each one step is equivalent to  $\Delta = \frac{T}{n}$ . Now if the stock price  $S_T$  is of our interest, we have  $S_T$  to be modeled by the following equation:

$$S_T = S_0 R_1 R_2 R_3 \dots R_n = S_0 u^x d^{n-x}$$

Where:

- $x$  is the number of times the stock price moves up;
- $n - x$  is the number of times the stock price moves down.

It is thus straightforward to observe that  $x$  follows binomial distribution with parameter  $n$  and  $p$ :

$$X \sim \text{Binomial}(n, p)$$

According to the discrete random variable expectation and variance formula, we have

$$\begin{aligned} E[S_T] &= E[S_0 R_1 R_2 R_3 \dots R_n] = E[S_0 u^x d^{n-x}] = \\ &= \sum_{x=0}^n S_0 u^x d^{n-x} p(X=x) \end{aligned}$$

$$\begin{aligned} \text{VaR}[S_T] &= \text{VaR}[S_0 R_1 R_2 R_3 \dots R_n] = \\ &= \sum_{x=0}^n S_0^2 u^{2x} d^{2n-2x} p(X=x) - E^2[S_T] \end{aligned}$$

Specifically, for  $n=1$ , assume  $p = \frac{1}{2}$ , we have:

$$E[S_1] = \frac{1}{2} S_0 (u + d)$$

$$\text{VaR}[S_1] = \frac{1}{2} S_0^2 (u^2 + d^2) - E^2[S_1]$$

From the reality, we could estimate on average the one-time step stock return with

$$E[R_1] = 1 + b\delta$$

$$\text{VaR}[R_1] = \sigma^2 \Delta$$

If we match up with the formula above, we could solve:

$$\begin{aligned} \frac{1}{2} S_0 (u + d) &= S_0 (1 + b\Delta) \\ \frac{1}{2} S_0^2 (u^2 + d^2) - S_0^2 (1 + b\Delta)^2 &= \sigma^2 \Delta \end{aligned}$$

And obtain:

$$u = 1 + b\Delta + \sigma\sqrt{\Delta}$$

$$d = 1 + b\Delta - \sigma\sqrt{\Delta}$$

Since we only need to match the mean and the variance asset pricing model to the data, we could alternatively model:

$$S_T = S_0 R_1^\Delta R_2^\Delta \dots R_n^\Delta$$

With

$$R_t^\Delta = (1 + b\Delta)(1 + X_t)$$

and

$$X_t = \begin{cases} \frac{\sigma\sqrt{\Delta}}{1+b\Delta} & \text{with } p = 1/2 \\ -\frac{\sigma\sqrt{\Delta}}{1+b\Delta} & \text{with } p = 1/2 \end{cases}$$

### 3.3 Central Limit Theorem

Now the model is not very realistic because it relies heavily on the assumption that within a short time period  $\Delta$ , the stock price can only move up or move down. Ideally, we want to take the limit of the time period  $\Delta$  to be 0, so that the stock movement can have many different possible cases.

If we take  $\log$  on both side of  $S_1$  from 3.2, we have

$$\log(S_1) = \log(S_0) + \log(1 + b\Delta) + \log(1 + X_t)$$

When  $\Delta$  is small, we can apply the following Taylor Expansion approximation

$$\log(1 + x) \approx x$$

And we have

$$\begin{aligned} \log(S_1) - \log(S_0) &\approx b\Delta + \log(1 + X_t) \\ &= b\Delta + E[\log(1 + X_t)] + \\ &+ \sigma_{\log(1+X_t)} \frac{\log(1 + X_t) - E[\log(1 + X_t)]}{\sigma_{\log(1+X_t)}} \end{aligned}$$

If we apply the central limit theorem on the last term, we obtain:

$$\begin{aligned} \log(S_1) - \log(S_0) &\approx b\Delta - \frac{1}{2} \sigma^2 \Delta + \\ &+ \sigma\sqrt{\Delta} \frac{\log(1 + X_t) + \frac{\sigma^2 \Delta}{2}}{\sigma\sqrt{\Delta}} \approx \\ &\approx \left( b - \frac{1}{2} \sigma^2 \right) \Delta + N(0, \sigma^2 \Delta) \end{aligned}$$

and if we add the left-hand side repeatedly up to  $S_T$ :

$$\begin{aligned}\log(S_T) - \log(S_0) &= \log(S_T) - \log(S_{T-1}) + \\ &+ \log(S_{T-1}) - \log(S_{T-2}) + \dots + \log(S_1) \approx \\ &\approx \left(b - \frac{1}{2}\sigma^2\right)T + \sigma N(0, T)\end{aligned}$$

This is implicitly saying that:

$$S_T = S_0 \exp\left[\left(b - \frac{1}{2}\sigma^2\right)T + \sigma N(0, T)\right]$$

### 3.4 Option Pricing

One of the most straight forward application of such a generalized binomial asset pricing model is to conduct asset pricing for financial derivatives. For example, if we want to investigate the price of a call option:

$$C_T = \max(S_T - K, 0)$$

$$P(S_T > K) = P(\ln(S_T) > \ln(K)):$$

$$= 1 - F\left(\frac{\ln(K) - \ln(S_0) - \left(r - \frac{1}{2}\sigma^2\right)T}{\sigma\sqrt{T}}\right) = F\left(\frac{\left(r - \frac{1}{2}\sigma^2\right)T + \ln(S_0) - \ln(K)}{\sigma\sqrt{T}}\right)$$

For the first part, denote  $u = \frac{\ln k - \ln S_0 - \left(r - \frac{1}{2}\sigma^2\right)T}{\sigma\sqrt{T}}$

$$\begin{aligned}\exp(-rT) \int_K^\infty S_T f(S_T) dS_T &= \exp(-rT) \int_u^\infty S_0 \exp\left[\left(r - \frac{1}{2}\sigma^2\right)T + \sigma\sqrt{T}Z\right] f(z) dz = \\ &= S_0 \exp\left(-\frac{1}{2}\sigma^2 T\right) \int_u^\infty \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{z^2}{2}\right) \exp(\sigma\sqrt{T}Z) dz = S_0 \exp\left(-\frac{1}{2}\sigma^2 T\right) \int_u^\infty \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{z^2 - 2\sigma\sqrt{T}Z + \sigma^2 T}{2}\right) \exp\left(\frac{\sigma^2 T}{2}\right) dx = \\ &= S_0 \int_u^\infty \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{(z^2 - \sigma\sqrt{T})^2}{2}\right) dx = S_0 F\left(\frac{\ln S_0 - \ln K + \left(r + \frac{1}{2}\sigma^2\right)T}{\sigma\sqrt{T}}\right)\end{aligned}$$

In conclusion, the option price for today with maturity  $T$  and strike  $K$  is given by:

$$C_0(T, K) = S_0 F\left(\frac{\ln S_0 - \ln K + \left(r + \frac{1}{2}\sigma^2\right)T}{\sigma\sqrt{T}}\right) - K \exp(-rT) F\left(\frac{\left(r - \frac{1}{2}\sigma^2\right)T + \ln(S_0) - \ln(K)}{\sigma\sqrt{T}}\right)$$

The formula is the famous Black Scholes formula for option pricing.

### 4. Result

I here plot the binomial asset pricing path and keep refine the time grids  $\Delta$  to 0.

As we can see from the plot that as the time grids  $\Delta$  goes to 0, the stock movement gets more and more

We just need to apply the expectation formula for continuous random variable:

$$E[C_T] = E[\max(S_T - K, 0)] = \int_{-\infty}^{\infty} (S_T(x) - K)^+ f(x) dx$$

Specifically, after taking the risk-free discount factor into consideration, the option price today can be derived as below:

$$\begin{aligned}E[C_t] &= E[\exp(-rT) \max(S_T - K, 0)] = \\ &= \exp(-rT) E[(S_T - K) 1_{\{S_T > K\}}] = \\ &= \exp(-rT) E[S_T 1_{\{S_T > K\}}] - \exp(-rT) K E[1_{\{S_T > K\}}] = \\ &= \exp(-rT) E[S_T 1_{\{S_T > K\}}] - \exp(-rT) K P(S_T > K) = \\ &= \exp(-rT) \int_K^\infty S_T f(S_T) dS_T - \exp(-rT) K P(S_T > K)\end{aligned}$$

Notice that for the second part

realistic. This is because, within a small step  $\Delta$ , the stock movement finally approximately equal to a normal distribution with infinite many possible choices and probabilities.

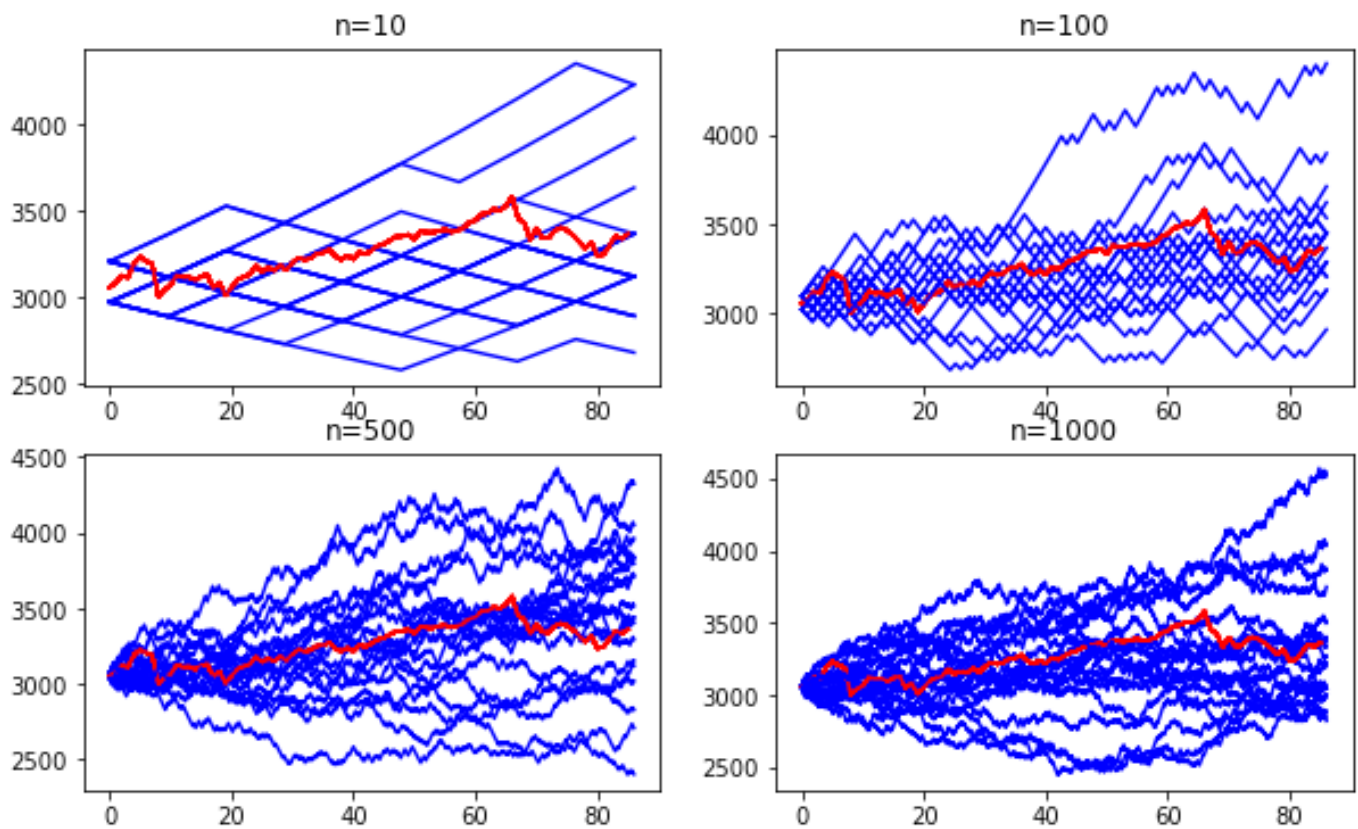


Figure 3.

Besides the trace plot, I also apply the derived Black Scholes formula to conduct call option pricing. I used python package to obtain the Apples' stock price(AAPL) and its option price (maturity on 01/21/2022 with strike  $K=150$ ). The implied vola-

tility is also found through the package with  $\sigma = 0.2638$ . As it is for today (07/23/2021), Apple's stock price is 148.56 and I extract the 6 months' risk-free rate from U.S Department of Treasury that  $r = 0.05$ . The derived option price is thus:

$$C_0(T, K) = 148.56 F \left( \frac{\ln 148.56 - \ln 150 + \left( 0.05 + \frac{1}{2} 0.2638^2 \right) 0.4986}{0.2638 \sqrt{0.4986}} \right) - 150 \exp(-0.05 * 0.4986) F \left( \frac{\left( 0.05 - \frac{1}{2} 0.2638^2 \right) 0.4986 + \ln(148.56) - \ln(150)}{0.2638 \sqrt{0.4986}} \right) = 12.03$$

The computed price is very close to the real option price, which is 10.3

### References:

1. Daily Treasury Yield Curve Rates. <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/textview.aspx?data=yield>.
2. Hull, John. Options, Futures and Other Derivatives. Pearson/Prentice Hall, 2009.

3. Shreve Steven. Stochastic Calculus for Finance I: The Binomial Asset Pricing Model. Springer-Verlag, 2004.
4. Yahoo Finance-Stock Market Live, Quotes, Business & Finance News. <https://finance.yahoo.com>

## Section 4. Economic theory

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### V.V. LEONTIEV'S TABLES: "INPUT-OUTPUT" AND THEIR APPLICATION TO THE MARKET ECONOMY

**Abstract.** In the article, based on the open "input-output" tables of V.V. Leontiev, used in a planned economy to calculate the total output by industry and on the fact of the "movement" of capital towards the alignment of profit rates of industries, a method of recalculation of tables is given to search for market prices that give the greatest profits to producers according to the previously known demand functions for the products of each industry. Procedures for calculating the optimal price level and production volumes are also given.

**Keywords:** "input-output" tables, profit margin, demand function, market prices, maximum profit.

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### ТАБЛИЦЫ В.В. ЛЕОНТЬЕВА: «ЗАТРАТЫ-ВЫПУСК» И ИХ ПРИМЕНЕНИЕ К РЫНОЧНОЙ ЭКОНОМИКЕ

**Аннотация.** В статье на основе открытых таблиц «затраты-выпуск» В.В. Леонтьева, применяемых в условиях плановой экономики для расчётов общего выпуска продукции по отраслям и на факте «движения» капиталов в сторону выравнивания норм прибыли отраслей, дан метод *пересчёта* таблиц для поиска рыночных цен, дающих наибольшие прибыли производителям по заранее известным функциям спроса на продукцию каждой отрасли. Даны и процедуры для расчёта оптимального уровня цен, и объёмов производства.

**Ключевые слова:** Таблицы «затраты – выпуск», норма прибыли, функция спроса, рыночные цены, максимальная прибыль.

**Постановка проблемы.** Свою Нобелевскую премию по экономике В.В. Леонтьев получил в 1973 г. за разработку метода «затраты-выпуск»,

где по заданному вектору «конечного потребления»  $Y$  продукции, рассчитывают вектор общего её выпуска  $X$  с учётом того, что кроме конечных



потребителей имеет место и «перекрёстное» потребление той же продукции между отраслями, задаваемое жесткой технологией производства. Под вектором мы понимаем некий *упорядоченный* набор чисел, отражающий количественные значения списка из данных товаров. Уравнение связи векторов, выведенное Леонтьевым, имеет матрично-векторный вид:  $\mathbf{X} = \mathbf{A} \cdot \mathbf{X} + \mathbf{Y}$ , где:  $\mathbf{A} - [\mathbf{n} \times \mathbf{n}]$  квадратная матрица обмена товарами между  $\mathbf{n}$  фирмами-производителями, элемент  $A_{KL}$  которой показывает сколько *единиц* товара фирмы  $\mathbf{K}$  требуется фирме  $\mathbf{L}$  для выпуска *единицы* своего товара. Уравнение имеет однозначное решение:  $\mathbf{X} = (\mathbf{E} - \mathbf{A})^{-1} \cdot \mathbf{Y}$ , где:  $\mathbf{E}$  – диагональная единичная матрица. Смысл этого уравнения баланса в том, что общий выпуск товаров ( $\mathbf{X}$ ) распадается на их промышленное потребление ( $\mathbf{A} \cdot \mathbf{X}$ ) и на потребление населением ( $\mathbf{Y}$ ). Зная (в этой стране) вектор конечного потребления товаров  $\mathbf{Y}$ , можно однозначно рассчитать их *общий* выпуск  $\mathbf{X}$ , с учётом потребления тех же товаров и в промышленном производстве. Здесь главная *проблема* состоит в поиске такого вектора  $\mathbf{Y}$  – потребления товаров населением, который бы *полностью* соответствовал его, населения, *реальным* «потребностям». Иначе малейшая погрешность в оценке компонент вектора  $\mathbf{Y}$  в итоге приведёт к дефициту одних и перепроизводству других товаров, что и имело место в СССР. Но даже если и будут точно установлены *пропорции* компонент этого вектора  $\mathbf{Y}$  в расчёте на среднего потребителя, *проблемой* остаётся поиск его «масштаба». Задав низкий масштаб для  $\mathbf{Y}$ , мы получим низкий уровень общего выпуска  $\mathbf{X}$ , что для многонаселённой страны приведёт к массовой безработице и общему дефициту товаров. Завысив же «масштабы» потребления, мы получим из-за нехватки рабочей силы и ресурсов – «невыполнение планов». Итак, первая *проблема* в пользовании таблицами в том, что *методики* «правильного» определения компонент вектора конечного потребления  $\mathbf{Y}$  *нет*, ибо они зависят от вектора цен  $\mathbf{P}$ , соответствующего упорядоченному списку товаров.

«Ценовой» вариант уравнения Леонтьева имеет вид:  $\mathbf{P} = \mathbf{A}' \cdot \mathbf{P} + \mathbf{V}$ , где:  $\mathbf{A}'$  – транспонированная матрица из предыдущего уравнения;

$\mathbf{P}$  – вектор цен для соответствующих товаров из компонент вектора  $\mathbf{Y}$ ;

$\mathbf{V}$  – вектор т.н. добавленной стоимости.

Рыночный смысл данного уравнения состоит в том, что цена товаров ( $\mathbf{P}$ ) складывается из затрат производства ( $\mathbf{A}' \cdot \mathbf{P}$ ) плюс рыночная *прибыль* ( $\mathbf{V}$ ), которую в экономической науке (не иначе как с лёгкой руки Маркса) именуют «добавленной стоимостью» (у Маркса это «открытая» им т.н. прибавочная стоимость, которой... не существует [4]). Это уравнение допускает подобное предыдущему решение:  $\mathbf{P} = (\mathbf{E} - \mathbf{A}')^{-1} \cdot \mathbf{V}$ . И здесь аналогичная *проблема*: для расчёта вектора цен необходимо заранее знать вектор добавленной стоимости  $\mathbf{V}$ , относительно которого не только у разных экономистов, но и у самого Леонтьева есть различные противоречивые заявления. Например. Википедия говорит: «Добавленная стоимость... не включает налоги». Но у Леонтьева: «Элементы... добавленной стоимости... включают в себя заработную плату, рентные платежи, налоги и прибыль» [1, 314]. А ведь если в добавленную стоимость включить налоги, то т.н. **НДС** означает налогообложение тех же... налогов. Или по теории Леонтьева получается, с одной стороны: «если даны коэффициенты добавленной стоимости, экономисты могут оценить... цены различных товаров и услуг» [2, 289], а с другой: «С ценами, взятыми как данное, решение этих уравнений даёт стоимость, добавленную обработкой» [3, 79]. Или же «уравнение цен» Леонтьева устанавливает только *связь* добавленной стоимости и цен, а что из них и когда является известным – им однозначно не определено. Ещё существует *проблема* зарплаты: «состав добавленной стоимости (амортизация, заработная плата, прибыль... )» [2, 14], где зарплата входит в состав добавленной стоимости. Но почему туда не включить и энергозатраты, ведь они, как

и зарплата выплачиваются «из того же кармана»? Почему энергоресурсы рассматриваются в качестве затрат, а зарплата рабочих – нет? Получается, на заводе-автомате, где рабочий утром нажимает кнопку «ON» а вечером – «OFF», где затраты «труда» минимальны, добавленная стоимость очень низкая. Тогда какой смысл в автоматизации? И ещё *проблема* в неоднозначности. С одной стороны: «добавленная стоимость, то есть... доход минус стоимость материалов» [1, 354]. С другой та же: «“Добавленная стоимость” в любой отрасли может в свою очередь быть выражена как сумма... затрат всех факторов... увеличенная на величину чистой прибыли» [1, 285], но ведь затраты плюс прибыль составляют по логике дохода, но никак не «добавленную стоимость». В заключение отметим “вывод” Леонтьева: «способ измерения остальных компонентов добавленной стоимости, если бы даже был возможен в принципе, неосуществим в силу ограниченности наших знаний» [1, 374]. Получается, что само измерение аргумента ( $\mathbf{V}$ ) для вычисления цен ( $\mathbf{P}$ ) – неосуществимо в принципе.

**Анализ публикаций.** Публикаций по отмеченным выше *проблемам* не обнаружено и, поскольку эта идея использования таблиц «затраты – выпуск» разрабатывалась исключительно её автором, то подавляющее большинство «не авторских» публикаций по теме таблиц «затраты – выпуск» носят, как правило, прикладной характер в рамках простого использования тех формул и правил, что разработал сам В. Леонтьев. Метод и принципы, по которым Леонтьев считал коэффициенты матрицы  $\mathbf{A}$ , кто ему давал вектор конечного потребления  $\mathbf{Y}$  (или добавленной стоимости  $\mathbf{V}$ ) – в его трудах не указаны.

**Цель статьи.** Используя (в качестве основы) т.н. «открытые» таблицы «затраты – выпуск» Леонтьева, в которых присутствует ненулевой вектор  $\mathbf{Y}$  конечного потребления, а также полагая известными зависимости спроса от цены (функции спроса) каждого товара, присущие рыночным отношениям, а также применив принцип «движения

капиталов», состоящий в выравнивании норм прибыли во всех отраслях – предложить альтернативный метод расчёта векторов выпуска товаров  $\mathbf{X}$  и их оптимальных цен  $\mathbf{P}$ , (без обращения к заранее никогда не известным векторам конечного спроса  $\mathbf{Y}$  и «добавленной стоимости»  $\mathbf{V}$ ), – такой метод, который одновременно должен обеспечить и максимальную суммарную прибыль производителей.

**Изложение основного материала.** Прежде всего определим, что в данной статье понимается под функцией спроса и какова её общая структура. Как известно, при прочих равных условиях, спрос на товар зависит только от его цены: чем выше цена, тем ниже спрос. Но в экономической литературе часто цену определяют как функцию спроса, что и ведёт к серии парадоксов [4]. Кроме того, спрос зависит, причём линейно, от «объёма» рынка: чем больше на рынке поток покупателей, тем выше на нём спрос. Но и спрос на товар зависит от его «потребительских» свойств. Чем большую *прибыль* даёт потребителю использование купленного товара, тем больше будет и спрос на него. Бесполезные товары, которые не приносят прибыли при эксплуатации их, спросом не пользуются. На рынке продавец имеет «денежную» прибыль как разность цены товара и его себестоимости (для продавца). Прибыль же покупателя равна разности дохода от полного потребления купленной вещи и ранее уплаченной за неё цены. Принцип *прибыльности* любого потребления также проработан в [4]. В итоге вид формулы для функции спроса будет:

$$\mathbf{m} = \mathbf{M} \cdot \mathbf{F}(\mathbf{P}/\mathbf{C}), \quad (1)$$

где:  $\mathbf{m}$  – собственно спрос на товар, с размерностью [шт./день];

$\mathbf{M}$  – максимально возможный спрос на товар при *бесплатной* его раздаче на данном рынке, с размерностью [шт./день];

$\mathbf{P}$  – цена единицы товара, с размерностью [\$/шт.];

$\mathbf{C}$  – *прибыль*, полученная потребителем после «уничтожения» единицы товара после полного его потребления, с размерностью [\$/шт.];

$F$  – монотонно убывающая функция её аргумента, для которой площадь между нею и осью абсцисс на интервале изменения аргумента  $[0 \dots 8)$  или на некотором ограниченном интервале – конечная величина. Например,  $F(P/C) = \text{Exp}(-P/C)$  на бесконечном интервале, или  $F(P/C) = (1 - P/C)$ , уже на интервале цен  $(0 \leq P \leq C)$  – можно применять для аппроксимации реальных функций спроса, тогда как «гипербола»  $F(P/C) = 1/(1 + P/C)$  – применяться не может, поскольку для гиперболы указанная выше площадь – бесконечна.

В работе [4] показано, что т.н. «линейный спрос»  $m = M \cdot (1 - P/C)$  характерен для товаров длительного пользования, и здесь параметр  $C$  равен полученному потребителем доходу от эксплуатации вещи до выхода её из строя, а экспоненциальный спрос  $m = M \cdot \text{Exp}(-P/C)$ , характерен для товаров одноразового пользования (пища, энергоресурсы и пр.), и здесь параметр  $C$  равен полученной прибыли от одноразового употребления вещи.

Как видим, функция (1) двупараметрическая и, зная её точно или только вид её аппроксимации, параметры функции можно найти по «двум точкам». Например, для сезонных товаров, зная цену  $P_1$  и спрос  $m_1$  в «сезон» и, соответственно, в «межсезонье»  $P_2$  и  $m_2$ , для расчёта значения  $C$  получаем неявное уравнение  $m_1 \cdot F(P_2/C) = m_2 \cdot F(P_1/C)$ , решив которое, уже для расчёта параметра  $M$  имеем  $M = m_1/F(P_1/C)$  или же  $M = m_2/F(P_2/C)$ . В иных случаях определение параметров также возможно, но более трудоёмко.

В отличие от Леонтьева, который начинал экономический анализ производства и потребления с уравнения баланса  $X = A \cdot X + Y$ , – мы начнём с анализа его «денежного» аналога  $P = A' \cdot P + V$ , – связи вектора цен  $P$  с вектором добавленной стоимости  $V$ . Итак, зависимость между векторами цен и добавленной стоимости – линейная:  $V = (E - A') \cdot P$ . И у Леонтьева находим подтверждение линейности: «Всякая статическая система «затраты – выпуск» подразумевает существование

линейной зависимости между ценами на продукты и добавленной стоимостью» [1, 285], или в принятых обозначениях можно записать линейную связь  $V = \lambda \cdot P + \mu$ . Но по логике при нулевой цене (отсутствии стоимости) и «добавленная» стоимость тоже должна быть нулевой, поэтому указанное линейное соотношение упрощается  $V = \lambda \cdot P$ .

Обратимся к анализу понятия нормы прибыли и к его неоднозначности определений в экономических науках. Например, Википедия гласит: «Норма прибыли... является процентным отношением прибыли за некоторый промежуток времени (период) к авансированному перед началом этого периода капиталу». Подобное определение нормы прибыли отвечает той, которую использовал Маркс, в его знаменитой фразе о презрении капитала к виселице при норме прибыли в 300%. Или, если вы вложили 22, выручили в итоге 87 (прибыль суть  $87 - 22 = 65$ ), то и норма прибыли:  $\eta = 100 \cdot 65/22 \approx 295\%$ . В другом месте Интернета: «Норма чистой прибыли... измеряемое в процентах отношение чистой прибыли к выручке». Для этого примера будет:  $\eta = 100 \cdot 65/87 \approx 75\%$ . Поскольку в экономике однозначных определений нет, то выбрав в качестве нормы прибыли – норму указанной чистой прибыли и отождествив добавленную стоимость с прибылью, получим:  $\eta = V/P \equiv \lambda$ . Отметим, что «норма прибыли» у Леонтьева тоже не однозначна, и, зачастую он её рассматривает лишь как амортизационные отчисления на постоянный капитал. А если учесть, что, по его мнению: «... нормы прибыли на капитал определяются в основном политическими решениями» [2, 179], то говорить о какой-либо однозначности в этой сфере затруднительно. В [4] доказано, что политическая и экономическая деятельность – это две противоположные стороны медали «социальных» отношений в обществе. Если экономическое взаимодействие приносит прибыли обеим сторонам, и это взаимодействие конструктивное, то политическое взаимодействие деструктивное и наносит вред обеим сторонам, но и там



«выигрывает» та сторона, которая понесёт меньший ущерб или уничтожит другую. Поэтому-то политические решения в «определении» нормы прибыли не всегда будут отвечать экономическим интересам производителей, равно как и «советы» экономистов политикам.

Обобщая всё вышеизложенное, мы приходим к уравнению:

$$(E - A') \cdot P = \lambda \cdot P, \quad (2)$$

которое связывает вектор цен  $P$  с нормой чистой прибыли  $\lambda$ , и которое является характеристическим уравнением матрицы  $(E - A')$ , в котором его параметр  $\lambda$  – это спектр её т.н. собственных значений, каждому из которых соответствует вектор цен  $P$ , определённый с точностью до множителя.

Почему Леонтьев, придя к заключению о *линейной* связи между ценой и добавленной стоимостью, не выписал уравнение (2) – не понятно. Вероятная причина этого – в неоднозначности самого определения понятия добавленной стоимости в экономических науках разных школ. Ведь понятно, что вычтя из цены товара его себестоимость, мы и получим *чистую прибыль*, из которой в свою очередь *можно* оплатить ренту, амортизацию, налоги, процент по кредиту и пр., а *можно* даже ничего не платить или платить не по всему общему списку возможных платежей. А если принять: «состав добавленной стоимости (амортизация, заработная плата, прибыль, рента и т.д.)» [2, 14], то в зависимости от «состава» этого: «... и т.д.», приходим к очевидному выводу, что величина нормы прибыли однозначно не определима.

Но, взяв в качестве «истинного» определения прибыли разность цены и себестоимости, Леонтьев сделал бы следующие выводы:

1. Максимальное *собственное* значение матрицы:  $(E - A')$  и будет равно наибольшей возможной *норме* прибыли:  $\lambda_{\max}$  в производстве (для заранее заданной матрицы:  $A$  обмена товарами между производителями).

2. Полученный для максимальной нормы прибыли собственный вектор цен:  $P_{\max}$  отражаю-

щий *соотношение цен*, в принципе (путём выбора соответствующего масштаба компонент вектора:  $P_{\max}$ ) может обеспечить и *наибольшую совокупную* прибыль всем производителям.

3. Поскольку в плановой экономике (для которой и справедливы таблицы Леонтьева) цены, в общем-то, можно назначать «с потолка», то, выбрав в качестве вектора цен собственный вектор:  $P_{\max}$ , мы и получим наибольшую норму прибыли:  $\lambda_{\max}$  для всего «народного хозяйства» с его матрицей  $A$ .

Покажем, как из уравнений (1–2) определить векторы объёма выпуска товаров  $X$  их цен  $P$ , при одновременно максимальной прибыли для «рынка».

Будем исходить всё же из принципа тенденции к выравниванию нормы прибыли по отраслям. Энгельс: «прибыль... её существование связано только с капиталом; последний... вынужден ограничиться получением нормы прибыли, равной для всех капиталов» [5, 19], или он же: «Без равной нормы прибыли капиталистическое производство было бы прямо невозможно» [5, 19]. И высказывание Маркса по теме: «конкуренция капиталов в различных отраслях производства создает цену производства, которая выравнивает нормы прибыли различных отраслей» [5, 197]. А ниже мы покажем причины, которые действуют «в противофазе» и тормозят реализацию этого принципа.

Решив уравнение (2), мы тем самым для матрицы  $(E - A')$  размером  $[n \times n]$  определим  $n$  её собственных значений  $\lambda_j$  ( $1 \leq j \leq n$ ), к каждому из которых соответственно определяется (с точностью до множителя) свой собственный вектор цен  $p$ . Поэтому реально вектор рыночных цен  $P$  можно записать как  $P = \mu \cdot p$ , где множитель ( $\mu$ ) находится из иных соображений.

Прибыль  $K$ -го производителя по её определению будет:

$$Q_K = (P_K - S_K) \cdot X_K$$

где:  $P_K$  – неизвестная пока цена товара у  $K$ -го производителя;

$S_K$  – себестоимость производства товара у  $K$ -го производителя, равная по определению Леонтьева:  $S_K = \sum_J A'_{KJ} \cdot P_J$ ;

$X_K$  – полный выпуск товара, по определению  $X_K = \sum_J W_{KJ} \cdot Y_J$ , где, в свою очередь для упрощения записи обозначено  $W = (I - A)^{-1}$ .

В более «развёрнутом» виде прибыль запишется как:

$$Q_K = (P_K - \sum_J A'_{KJ} \cdot P_J) \cdot \sum_J W_{KJ} \cdot Y_J.$$

С учётом того, что для  $K$ -го производителя цена товара в рамках принципа равенства всех норм прибыли будет  $P_K = \mu \cdot p_K$  и для него же спрос на товар (1) запишется как:  $Y_K = M_K \cdot F(\mu \cdot p_K / C_K)$ , получим для прибыли выражение:

$$Q_K = (\mu \cdot p_K - \sum_J A'_{KJ} \cdot \mu \cdot p_J) \cdot \sum_J W_{KJ} \cdot M_J \cdot F(\mu \cdot p_J / C_J),$$

а для общей прибыли всех участников рынка аналогичное выражение:

$$Q(\mu) = \sum_K Q_K = \sum_K [\mu \cdot (p_K - \sum_J A'_{KJ} \cdot p_J) \cdot \sum_J W_{KJ} \cdot M_J \cdot F(\mu \cdot p_J / C_J)],$$

которое при известном-заданном собственном векторе цен:  $p$  зависит только от масштаба ( $\mu$ ) этого вектора для цен реальных  $P$ . Прибыль рынка:  $Q(\mu)$  имеет максимум, который находим из известного условия:  $\partial Q / \partial \mu = 0$ . В итоге, обозначив  $D_K \equiv (p_K - \sum_J A'_{KJ} \cdot p_J)$ , получим решение:

$$\mu = [\sum_K D_K \cdot \sum_J W_{KJ} \cdot M_J \cdot F(\mu \cdot p_J / C_J)] / [\sum_K D_K \cdot \sum_J W_{KJ} \cdot M_J \cdot p_J / C_J \cdot F'(\mu \cdot p_J / C_J)]. \quad (3)$$

Знак минус (-) перед каждым слагаемым в сумме ( $\sum_J \dots$ ) знаменателя не должен вводить в заблуждение, ибо для всех  $F(x)$  значение:  $-F'(x) > 0$ .

Это уравнение легко решается методом итераций. Задав в начале первое приближение:  $\mu_1 = 1$ , подставляем его в правую часть уравнения и тем самым находим:  $\mu_2 = [\dots] / [\dots]$ , которое вновь подставляем в правую часть уравнения и т.д., до получения требуемой точности для  $\mu_N$ . После чего находим вектор рыночных цен:  $P = \mu_N \cdot p$  для каждого собственного значения  $\lambda$ .

И здесь отметим следующий факт, что не всегда максимальной рыночной прибыли будет отве-

чать и наибольшая норма этой прибыли. Пояснить это можно на примере. Для производителя-монополиста при экспоненциальном спросе:  $m(P) = M \cdot \text{Exp}(-P/a)$  [4] оптимальная цена товара при себестоимости:  $s$  будет равна:  $P_0 = a + s$ , а норма прибыли:  $\mu_0 = a / (a + s)$ , и максимальная же прибыль будет:  $Q_0 = N \cdot a \cdot \text{Exp}(-1 - s/a)$ . Если поднять цену, например, на уровень себестоимости:  $P = a + 2 \cdot s$ , то норма прибыли при этом **возрастёт** до значения:  $\mu = (a + s) / (a + 2 \cdot s) > \mu_0$ , а масса прибыли **упадёт** до уровня:  $Q = N \cdot (a + s) \cdot \text{Exp}(-1 - 2 \cdot s/a) < Q_0$ . Откуда следует тот вывод, что вышеуказанную процедуру (3) по определению оптимального масштаба цен ( $\mu$ ) нужно проводить для всех найденных собственных значений матрицы и выбрать в итоге «перебора» то значение  $\mu_0$ , которому отвечает наибольшая прибыль  $Q$ .

Поэтому алгоритм для оптимизации всей экономики отдельной страны (её региона или крупной отрасли) может быть следующим:

1. Составляем для «объекта» таблицу:  $A$  «затраты – выпуск» Леонтьева, руководствуясь следующими принципами агрегирования-объединения всех производителей. В каждую «группу» включают тех производителей, товары которых в наибольшей мере *связаны*, как товары-субституты. Например, в  $C/X$  можно объединить в одну группу «зерновые» – всех производителей зерна, в группу «мясо» – производителей мясной продукции, аналогично формируют группы: «цитрусовые», «бахча», «зернобобовые», «фуражные» и т.п.. В пищевой промышленности это: «кондитерские», «ликёро-водочные», «хлебо-булочные», «соки-воды», «детское питание» и пр. изделия. В итоге должно получиться такое формирование групп-отраслей, чтобы *между ними практически* не было «субституциальных» связей. В этом случае любое изменение спроса и цены на товары для одной группы практически никак не повлияет на спрос товаров остальных независимых в этом смысле групп, что



и даёт возможность рассматривать «автономно»-независимо функции спроса для каждой группы. Так например, изменение цен и спроса на «цитрусовые» никак не повлияет на цены и спрос групп «чай-кофе» или «пряности». Кстати, в *доступных* работах Леонтьева нигде нет даже упоминания о его *методе* формирования таких агрегированных групп. Вероятно, это было одно из многих его “know how”, которыми он не делился и нигде не публиковал.

2. На основе матрицы:  $\mathbf{A}$  рассчитываем матрицу:  $\mathbf{W}' = (\mathbf{I} - \mathbf{A}')^{-1}$ , для которой определяем спектр ( $\lambda$ ) её собственных значений:  $\mathbf{W}' \cdot \mathbf{P} = \lambda \cdot \mathbf{P}$ , и для каждого из найденных:  $\lambda$ , – один из собственных векторов цен:  $\mathbf{p}$ .

3. По указанной итерационной процедуре (3) для расчёта ( $\mu$ ) к каждому собственному вектору цен:  $\mathbf{p}$  находим масштаб цен ( $\mu$ ), рассчитываем и сами цены:  $\mathbf{P} = \mu \cdot \mathbf{p}$  и им соответствующие общие рыночные прибыли  $\mathbf{Q} = \sum_{\mathbf{K}} \mathbf{Q}_{\mathbf{K}}$ , из множества которых в итоге берём к учёту наибольшее значение  $\mathbf{Q}_{\text{MAX}}$  и, соответствующий ему, оптимальный рынку вектор цен  $\mathbf{P}_{\text{MAX}}$ . Касательно цен отдельных товаров-субституттов в группах при их заданном векторе средних значений  $\mathbf{P}_{\text{MAX}}$ , то «разброс» цен внутри группы – это тема отдельной работы.

4. По вектору цен:  $\mathbf{P}_{\text{MAX}}$  находим вектор конечного потребления  $\mathbf{Y}$ , где его компоненты ( $\mathbf{K}$ ) определены спросом:  $\mathbf{Y}_{\mathbf{K}} = \mathbf{M}_{\mathbf{K}} \cdot \mathbf{F}[(\mathbf{P}_{\mathbf{K}})_{\text{MAX}}/\mathbf{C}_{\mathbf{K}}]$ .

5. В итоге получаем вектор общего выпуска:  $\mathbf{X} = (\mathbf{I} - \mathbf{A})^{-1} \cdot \mathbf{Y}$  который, обеспечивает баланс производства-потребления страны (региона, отрасли), максимальную *общую* прибыль производителей при равной норме прибыли «на капитал» во всех отраслях.

Но здесь-то и возникает указанный ранее парадокс «движения» рынка. Капиталы, они перемещаются между группами так, чтобы выравнивать норму прибыли в каждой из них, добиваясь при этом наибольшей прибыли *для рынка в целом*, в то время как стремление каждой группы к максимуму *своей* прибыли исключает равенство *её*

нормы средней норме всех групп. Некий аналог соотношения неопределённости из квантовой механики, где точное знание местоположения частицы исключает вообще знание величины её импульса, и наоборот. Так и здесь. Точное равенство норм прибыли среднему значению у всех исключает оптимальную прибыль каждого производителя, несмотря на её максимальный уровень для рынка *в целом*. А стремление каждого производителя к *своей* максимальной прибыли нарушает равенство всех норм прибыли «на капитал» в каждой группе производителей. Для иллюстрации этого рассмотрим норму прибыли производителя, например, с линейной функцией спроса  $\mathbf{m}(\mathbf{P}) = \mathbf{M} \cdot (1 - \mathbf{P}/\mathbf{D})$ . При себестоимости  $\mathbf{S}$  товара его прибыль будет  $\mathbf{Q} = \mathbf{M} \cdot (\mathbf{P} - \mathbf{S}) \cdot (1 - \mathbf{P}/\mathbf{D})$ , и она достигает максимального значения  $\mathbf{Q} = 1/4 \cdot \mathbf{M} \cdot (\mathbf{D} - \mathbf{S})^2/\mathbf{D}$  при цене  $\mathbf{P} = 1/2 \cdot (\mathbf{S} + \mathbf{D})$ . Откуда норма прибыли (при максимуме самой прибыли) будет  $\lambda_{\text{MAX}} = (\mathbf{Q}/\mathbf{M})/\mathbf{P} = 1/2 \cdot (1 - \mathbf{x})^2 / (1 + \mathbf{x})$ , где принято:  $\mathbf{x} = \mathbf{S}/\mathbf{D}$  – как отношение себестоимости производства к параметру спроса. Поскольку величина  $\mathbf{x}$  – «своя» для каждой отрасли, то их стремление к максимуму *своих* прибылей нарушает принцип одинаковой нормы прибыли для всех. И только рост себестоимости товаров может привести к падению нормы прибыли, а не рост производительности труда, как это полагал Маркс: «развитие общественной производительной силы труда выражается... с одной стороны, в тенденции к прогрессирующему понижению нормы прибыли, а с другой стороны, – в постоянном возрастании абсолютной массы... прибыли» [5, 244], хотя он верно подмечал, что при падении нормы прибыли, например, в промышленности: “имеется такое выравнивание... при котором капитал в зависимости от нормы прибыли перебрасывается из промышленности в земледелие” [6, 97]. Кстати, вот интересный прогноз Леонтьева: «средние относительные цены на минеральное сырьё возрастут в 1970–2000 годах примерно в 2.7 раза... тогда как цены на промышленные

товары упадут на 6.8%» [3, 65]. Получается, что если цены на сырьё растут в разы, то цены на товары, изготавливаемые из сырья, – снижаются.

**Выводы.** Предложена методика иного применения таблиц Леонтьева (изначально разработанных лишь для плановой экономики) в условиях рынка для расчёта общего объёма производства товаров  $X$  в стране и их цен  $P$ , обеспечивающая наибольшую общую прибыль для всех производителей при одинаковой для всех норме прибыли. Отмечено и противоречие движения капиталов в сторону выравнивания норм прибыли во всех отраслях с тенденцией каждой отрасли к максимуму своей прибыли, которое нарушает тождество норм прибыли в отраслях даже если суммарная прибыль производителей максимальная.

Имея таблицу Леонтьева для некоторой страны и реальные в ней данные о векторах производства  $X$  и цен  $P$ , можно в принципе их непосредственно сравнить с данными предложенного расчёта для выявления расхождений или «проблемных мест». Однако наличие в экономике любой страны т.н. «государственного сектора», который работает не для максимизации прибыли, а, зачастую, на дотациях из бюджета, может исказить итоги. Аналогичные искажения результата могут оказать экзогенные и не учтённые в данном рассмотрении экспортно-импортные операции.

### Список литературы:

1. Василий Леонтьев Экономические эссе. Теории, исследования, факты и политика: пер с англ. – М.: Политиздат, 1990. – 416 с.
2. Леонтьев В. В. Избранные произведения: в 3 т. – М.: Издательство «Экономика», 2006–2007. – Т. 1: Общеэкономические проблемы межотраслевого анализа. 2006. – 408 с.
3. Леонтьев В. В. Избранные произведения: в 3 т. – М.: Издательство «Экономика», 2006–2007. – Т. 2: Специальные исследования на основе методологии «затраты-выпуск». 2006. – 544 с.
4. Шамшин В. Н. Азбука рынков. – Издательство «Альбион» (Великобритания), 2015. – 1280 с. 21 табл., 157 рис. [https://www.dropbox.com/preview/VOL\\_3.pdf?context=browse&role=personal](https://www.dropbox.com/preview/VOL_3.pdf?context=browse&role=personal)
5. К. Маркс и Ф. Энгельс сочинения – М.: Госполитиздат, – Т. 25. – часть I. 1961. – 546 с.
6. К. Маркс и Ф. Энгельс сочинения – М.: Госполитиздат, – Т. 26. часть III. 1964. – 675 с.

## Section 5. Economics of recreation and tourism

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### CHALLENGES AND PROSPECTS OF MEDICAL TOURISM IN GEORGIA

**Abstract.** Following the latest literary sources and diverse factual materials, the present scientific article explores the challenges and development prospects of medical tourism in Georgia.

More specifically, the aim of this study is to identify the factors and challenges hindering the development of medical tourism in Georgia. It also aims to offer relevant recommendations based on the analysis of the results obtained, both in the hospital sector and on the systemic level.

Based on the study results, relevant conclusions and recommendations were made. It was established that the development of medical tourism requires the promotion and positioning of the destination country as that of medical tourism, as shown in strengthening the government involvement and its role. It is also important to develop a strategic plan for the development of medical tourism, which should ensure the integrated functioning of state agencies in this respect.

**Keywords:** medical tourism, medical services, telemedicine, cosmetic medicine, treatment with phages, resorts by climate, aesthetic medicine, recreational tourism.

#### **Introductions:**

Medical tourism represents a comparatively new but rapidly developing area. Its growth and other segments of tourism are very high. Medical tourism has developed a new concept of modern health: when a patient in his country cannot solve the health problem, he chooses his preferred country, doctor and clinic to enjoy modern therapeutic and diagnostic methods at an affordable price.

One of the reasons for the development of medical tourism is a lack of necessary services or low qual-

ity in their country. In such cases, patients prefer to undergo medical treatment in countries where prices are high but the medical service quality is relatively higher. Notably, in the 21<sup>st</sup> century people found themselves in exceptionally stressful conditions, including ecological disasters, viruses, terror attacks, wars and accelerated lifestyle. It's time to innovatively use the development and recovery modes mixing relaxation, recovery, entertainment, restoring the balance between physical and spiritual condition, treatment and getting well.

Medical tourism includes various areas including local, regional and global medical tourism. Telemedicine represents a type of medical tourism. It means when patients are provided with medical care in a remote mode (Such services are particularly relevant in the face of the COVID-19 pandemic). We also see an educational medical tourism when people are unable to enjoy appropriate medical education in this or that country, so, they have to leave for abroad for treatment. We see the educational medical tourism when medical staff travels abroad to raise qualification and improve practice.

Europe and North America are the main suppliers of customers to the medical tourism industry. Medical tourism occupies 65% of the world tourism market in five countries: the US, Germany, Japan, France and Austria. In terms of the number of medical tourists, the following countries are the leaders: India, Hungary, Mexico, Singapore, Thailand, Barbados, Brazil, Israel, South Korea and Turkey.

Considering the global competition of our times, medical tourism contributes to the faster development of medicine and can cause significant changes in the national health system. In this respect, it is interesting to observe the medical tourism level in modern Georgia, namely, the challenges it faces and the development prospects it follows.

**Results and discussion:** studies show that Georgia's tourism incomes equal \$1.7 billion through its trade turnover, and it is of utmost importance [3]. Georgia offers the following types of services for medical tourists: dentistry and teeth prosthetics, cosmetic medicine, sight correction with excimer laser, treatment of coronary heart diseases (stenting, shunting), treatment with phages (This is an exclusive species, since 'Tbilisi Bacteriophage' is one of the unique institutions across the world), reproductive health services, and others [4].

Notably, Georgia has a great potential for healing tourism as it is extremely rich in resort areas: currently, there are 102 resorts and 182 areas offering diverse disease treatment, rehabilitation and recovery.

It should also be noted that Georgia has all medical resorts where there are natural medicinal factors, like mineral water, mud, recreational climate and essential conditions for using for medicinal and preventive purposes [2].

It is possible to develop specific types of medical tourism, such as climatic (mountain, sea coast, forest and steppe) resorts and those offering balneotherapy (drinking water and bath treatment). They always represented Georgia's tourism dignity (We should notice that the development of resorts in Georgia begins at the turn of the 19th-20th centuries. During this period, the process of rebuilding tourism began in Borjomi and Abastumani, and later on the Black Sea coast. Georgian resorts were recognized as one of the best medical destinations in Soviet times).

Among the climate resorts there are: Abastumani, Akhtala, Batumi, Bakuriani, Bakhmaro, Borjomi, Green Cape, Nabeghlavi, Patara Tsemi, Sairme, Surami, Tskaltubo and Kobuleti. The balneotherapy resorts are: Borjomi, Grigoleti, Tbilisi, Nunisi, Sairme, Ureki, Utsera, Tsagveri, Tskaltubo, Tsai, Tsemi, Tsikhisdziri, Shovi, Java and many others.

Mountain climate offers fresh air, intense sun radiation, especially ultraviolet rays, low barometric pressure and a high substance of oxygen. The mountain climate acts in diverse modes: soothes and tones nervous system, improves vital processes, activates metabolism, respiratory function, blood circulation and digestion, besides, it improves immunity to various diseases, including infectious pathologies. For this factor, people spending holidays in mountain resorts show a repellent effect [11].

The Black Sea climate is humid and subtropical with good properties. It is good for the treatment of diseases of the blood circulation and respiratory, as well as functional disorders of the nervous system. Seaside resort Ureki is distinguished by its importance, magnetic sand and excellent climatic conditions for recreation and recovery. From the positive treatment factors of Ureki, we can note healing effect for cardiovascular diseases, central nervous system,



functional diseases, those of muscles, skeleton and other diseases.

Georgia has about 2000 mineral sources, with the most common being carbonated mineral waters, used to treat various disorders of the digestion system, endocrine system and metabolism. Borjomi, Sairme, Lebarde, Utsera and Shovi can be named as such resorts.

Among the mud-curing resorts stands out Akhtala. Its pseudo-volcano mud is used for baths, applications and tampons. Chronic, peripheral nervous system and gynecological diseases of limbs are treated in Akhtala.

For the maximum development of the medical tourism potential, we should analyze the challenges hindering its development.

Mainly, we should highlight a high competition level in this area. Many countries, with medical tourism quite developed cannot be competitive. In such countries, lots of funds are spent to boost medical tourism. They offer many types of medical care to users from foreign countries (Our neighbor Azerbaijan is active in this respect, which is actively investing. If we do nothing, Azerbaijani patients coming Georgia for treatment will no longer arrive here. Gradually this picture can change and not only drain patients to Azerbaijan, but also to medical staff.). In this respect, Georgia cannot be attractive [3].

The medical tourism development is hampered by poor infrastructure resources. The network of hotels and agencies has insufficiently developed and prevents tourists from providing a shelter. However, the service level of available private hotels is still low. Climate resorts are mainly in highlands where the infrastructure is not developed.

The transport system problems are also important. Despite the fact that lately particular attention is paid to the development of the road infrastructure, in most of the highland regions the road and transport system remain disrupted. Domestic flights and maritime transport are less developed, while the proper

level of development could ensure easy movement across the country.

In some areas of the Georgian coastline poor sanitary-hygienic conditions are observed. The beach is not cleaned regularly and we observe no compliance with sanitary norms. Sea pollution and various residues are also common. Naturally, all this threatens the health of the coast visitors.

Apart of that, there is no information database regarding the potential of medical tourism in Georgia. There is a comparatively low number of adverts at treatment resorts. Besides, many travel agencies, offer fewer medical tours, while the country boasts high potential.

For high competition in the field of medical tourism, it is more real for Georgia to offer specific services that do not require high investments. By setting low prices for specific services and adhering to international standards of the medical care quality, it is possible to attract foreign patients. In this respect it can become interesting, even on a regional level.

In many countries, services like aesthetic medicine and dental medical care are not covered by state health programs. Thus, if there is a proper standard and quality of medical care in Georgia at a relatively low cost, foreign citizens will aspire to the desired medical services.

It is necessary to improve the road system, especially in highlands and hardly reachable areas as the significant potential for the development of medical tourism focuses on the mountainous regions. However, it is necessary to expand the shuttle network and schedule direct routes to the mountainous regions; It is recommended to schedule intra-country, inter-regional flights, as well as restore sea flights for the transportation and ride of visitors.

Georgia should create a complete information database about the medical tourism potential and its constant update including full info about large medical institutions, clinical centers (types and prices of their services), available to any resident of the world via internet.



To enhance the quality of medical services, it is recommended to bring certain medical suppliers for the implementation of medical tourism into a unified regulation system that ensures the quality of medical services following international standards.

Unlike conventional tourism, medical tourism requires considering the peculiarities of medicine. In this respect, conduction of training courses regarding medical tourism is required by tourism employees. The training should meet international standards.

The state support for foreign patients should be ensured specifically for those (as well as accompanying persons) planning to get treatment in Georgia, impose visa benefits or be exempt from visa fees.

The Economic Ministry and National Tourism Administration of Georgia developed the national tourism strategy with the World Bank group's financial support. The strategy includes 20–25 years and defines various directions of tourism development: medical tourism, wine tourism, adventure, cultural tourism and others. One of the significant solutions of the strategy is the development of medical tourism and recreational resorts in Georgia.

According to foreign experts and experience of leading tourist countries, natural and resort factors in a rich country such as Georgia are feasible. Here the priority is the development of recreational tourism. International competition capacity of Georgia as a tourism brand can be supported by the formation and possibilities of innovative tourism products like combined wine tourism, enotherapy (treatment with wine) and ampelotherapy (treatment with grapes). Currently, in an industrial environment, the demand for such an exotic tourist product is very high.

Georgia's medical tourism requires higher attention from the government. Through our study, 37 interviews were conducted with those involved in the medical tourism industry. Based on the study results, it was determined that the government involvement is required for the medical tourism develop-

ment. Therefore, it is important to develop a strategic plan, which should ensure the integrated operation of government authorities. There is a need to tighten the regulation and control of the quality of medical services, stimulate the acquisition of international accreditation by medical institutions and affiliation with international medical networks.

It is also recommended to introduce international treaties regulating medical tourism, to participate more intensely in international medical tourism forums, to create joint medical organizations with the involvement of foreign companies competing with private clinics in terms of the medical care cost.

Finally, through the proper positioning, medical tourism will attract quite a high number of tourists during the year and will become one of the important mechanisms for the economic growth.

**Conclusion:** Based on the study outcomes, the following recommendations were made for the development of Georgia's medical tourism: (1) to destine the country as a medical tourism, position and promote the target markets for Georgia to be perceived globally as a medical tourism provider; (2) to improve the government's involvement and role in the development of medical tourism, to develop the appropriate strategy by the government; (3) the government must ensure quality control, standardization and regulation of medical services, for which it is required to introduce an accreditation system and stimulate international accreditation; (4) improve cooperation and coordination with medical institutions by facilitator companies and intermediary agencies, qualify their management and administrative staff through targeted training regarding the specifics and needs of medical tourism; (5) to facilitate air travel to the target countries by stimulating scheduling direct flights; (6) to improve accounting of medical tourists visiting the country, to established required necessary information input on services provided to foreign patients in statistical reports of medical institutions.

### References:

1. Georga M. Georgia's developing medical tourism ambition.– International Medical Travel Journal. 2019. URL: <https://www.imtj.com/articles/georgias-developing-medical-tourism-ambition>
2. Gogokhia S. Why does medical tourism not develop in Georgia? 2015. URL: <https://www.bpn.ge/article/15972-ratom-ar-vitardeba-samedicino-turizmi-sakartveloshi>
3. Verulava T. Medical tourism and Georgia: specifics and recommendations of problems. -Collection of works of the International Conference “Medical tourism: political, socio-economic, educational and medical problems”. G. R. Robakidze University. 2016. URL: <http://chapidze.ge/news/116-.html>
4. Kobaladze L. Short-term and long-term development of Tourism and relevant infrastructure of Georgia.– Tbilisi. 2010. URL: <https://geshdoc.files.wordpress.com/2011/12/38.pdf>
5. Medical Tourism Index. 2019. MTI Construct. URL: <https://www.medicaltourismindex.com/research-knowledge/mti-construct>
6. Medical tourism increases in Georgia. 2018. Georgian Journal. URL: <https://www.georgianjournal.ge/society/34899-medical-tourism-increases-in-georgia.html>
7. Medical Tourism Statistics & Facts. (2015).– Patients Beyond Borders.– URL: <https://patientsbeyondborders.com/medical-tourism-statistics-facts>
8. Mendes A. Medical Tourism and the Rise of ‘Plastic Surgery Cults’ in Turkey. Journal of Aesthetic Nursing,– 5(1). 2016.– P. 32–33. URL: <https://doi.org/10.12968/joan.2016.5.1.32>
9. Mikava N. & Nikoleishvili E. Medical Tourism Industry. Its Framework and Impact on the Global Healthcare.– Caucasus Journal of Health Sciences and Public Health. 2018. URL: <http://caucasushealth.ug.edu.ge/pdf/v2s3/Medical>
10. Momeni K., Janati A., Imani A. & Khodayari-Zarnaq R. Barriers to the Development of Medical Tourism in East Azerbaijan Province: A qualitative study. Tourism Management,– 69. 2018.– P. 307–316. URL: <https://doi.org/10.1016/j.tourman.2018.05.007>
11. URL: <http://www.economy.ge/ge/media/news/saqartvelos-mtavroba-da-msofli-banki-quoterovnu-li-turizmis-ganvitarebis-strategia-2025quot-s-seimusavebs>

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## **STATE POLICY ON THE DEVELOPMENT OF HEALTH TOURISM IN AZERBAIJAN**

### **Abstract**

**Summary:** The article considers several factors influencing the development of medical tourism in Azerbaijan: the need for joint activities of the public and private sectors in the development of medical tourism, the effective use of the country's tourism potential, and the use of mineral and thermal tourism resources.

The directions of state support and implementation of state regulation in the development of medical tourism were analyzed.

**The actuality of the subject.** One of the main issues in the development of tourism in the country is proper use of tourism potential. Moreover, the utilization of the existing Naftalan oil and internationally recognized waters of Azerbaijan is essential for maximizing the tourism potential. Therefore, increasing state support for the development of medical tourism is pivotal.

**The purpose of the study:** The purpose of the study is to assess the current state of medical tourism in Azerbaijan. Increasing the flow of tourists to the country through the establishment of healthresorts& sanatoriums and improving the quality of treatment is integral part of development directions in the field of medical tourism.

### **The objectives of the study are:**

- Assessment of the current state of medical tourism;
- study of factors influencing the development of medical tourism;
- to determine the role of health resorts and sanatoriums as a means of treatment of various diseases;
- Improving the implementation of state support for the development of medical tourism in our country.

**Object of research.** Reforms in the tourism sector in the Republic of Azerbaijan and the development of medical tourism were selected.

**Research methods.** Economic-statistical, statistical grouping, comparative economic analysis and observation methods were used in the research process.

**Keywords:** health tourism, sanatoriums and resorts, reforms, state support.

The favorable geographical location, historical monuments, mineral springs, thermal waters, and the presence of a rich national cuisine are the factors that motivate the subject.

The Azerbaijan International Tourism Exhibition (AITF) has been held in our country every year since 2002, and this has become a tradition. At the same time, Azerbaijan's tourism resources, materials showing the development of this field in Azerbaijan have been presented at many foreign exhibitions.

Another State Program is the State Program on Tourism Development in the Republic of Azerbaijan for 2007–2016. The program includes issues such as increasing human resources in the field of tourism, the correct and efficient use of tourism resources, the formation of state policy in this area and so forth.

The main focus in the organization of medical tourism is the study of medical resources, the establishment of sanatorium-resort facilities in certain areas, the organization of tourist routes to resort areas, preparation and organization of additional events for recreation of tourists and etc. [4].

In the promotion of these areas, the organization of publications, the advertisement materials with information about these areas, the creation of symbolic souvenirs in accordance with the resort, the implementation of the work are of particular importance. The announcement of 2011 as the year of tourism was an important step in the development of tourism.

However, in the 1950s and 1960s, Azerbaijan was the weakest tourist destination among the countries of the USSR. The decree adopted by the President of the Republic of Azerbaijan in 2010 approved the State Program for the Development of Tourism from 2010 to 2014.

During 2010–2015, the number of tourists visiting the country increased by 8.5 percent, the number of facilities in the field of tourism increased by 4.5 percent, and the level of employment in this sector increased by 6 percent. These indicators indicate that the development of tourism will increase in the coming years.

The sharp decline in oil prices towards the end of 2015 highlighted the need to develop the non-oil sector. As a result, increased attention was paid to the development of tourism. As in other countries, many measures are being taken in Azerbaijan to develop tourism and increase the number of tourists. As a result, positive results are obtained every year.

Thus, European and Asian tourists have been coming to Azerbaijan in recent years. These results in the development of tourism are due to the renewal of infrastructure, hotel network, sanatorium-resort network, as well as the impact of international exhibitions, events and government programs in the country.

Although the study of Azerbaijan's medicinal resources began in the early 19<sup>th</sup> century, tourists who came here in ancient times also benefited from 59 medicinal sources. At present, there are world-renowned treatment centers in Azerbaijan. The main task in this area is to promote our health facilities at the international level and to hold a PR campaign and complex events for tourists to come to the country.

There is a great need for propaganda in this area. If we pay attention to the measures taken by the Association for Health and Thermal Tourism Support established in our country for the development of this field, it is possible to see that important work has been done. Information on the location of the association's health centers, various entertainment programs in the health centers, the organization of excursions to the surrounding area, medical services, service personnel was posted. He started working on the preparation of catalogs. A map showing the location of treatment facilities is also being prepared. The info-tours organized by the Association to Naftalan and Masalli also play an important role in the development of medical tourism.

According to the Decree of the President of the Republic of Azerbaijan dated December 6, 2016, "The Strategic Roadmap for the Development of the Specialized Tourism Industry in the Republic of Azerbaijan aims to increase Azerbaijan's cooperation



with other countries, improve service standards at enterprises and facilities in this sector”. The treatment is related to the measures to be taken in the development of medical tourism: an action plan for the development of medical tourism for 2017–2020 will be prepared.

This plan will be developed by the Ministry of Culture and Tourism. According to the plan, mainly in Gabala, Masalli, Lankaran and other regions. It is also envisaged that natural resources will be used. The action plan will be implemented after 2020 to stimulate the development of medical tourism. The event is planned.

Thus, a research group consisting of professionals and scientists should be established to create products in the regions, and information on Azerbaijani tourism should be placed on the products. Short-term tours to treatment-dependent regions should be organized and the participation of relevant companies and authorities in these plans should be encouraged. Attention should be paid to the improvement of transport routes for the convenient transportation of tourists to the resort areas. Azerbaijan pursues a state policy on the organization and development of resort business [5].

A developed tourist complex has been established with the support of the implemented state policy. Sanatoriums-resorts, which play an important role in terms of recreation, treatment and health of people, also play an important role in increasing employment, socio-economic development of the region, infrastructure, services and other related areas. The main work in the organization of resorts is to update the network of resorts and sanatoriums, to organize them at the level of international standards.

To regulate the implementation of this work at the state level, the “State Program for the Development of Resorts in the Republic of Azerbaijan for 2009–2018” was adopted. The program is expected to have the following results in the future:

- Correct assessment of natural treatment resources in the country;

- International level of treatment and health centers operating in the republic development;
- The development of the industry-resort network in other areas related to this sector.
- Therapeutic measures and human resources of industrial and resort enterprises Reduction of many diseases as a result of improving its quality;
- The formation of an image that will recognize the country as a result of the development of this field and this service use of tourists, low-income families;
- Increase in income as a result of the development of the industry-resort network at the same time as the existence of these resorts, the population living in the surrounding areas of the time. increase in employment indicators [2].

On June 9, 2017, a conference was organized under the title “The Greatest”.

The conference is organized by the Azerbaijan Health and Thermal Tourism Support Association. During the conference, with the participation of sanatoriums, resorts and tourism enterprises and organizations, the future development of medical tourism in the world and the international tourism market integration were discussed. The decrees signed by the President of the country were noted in the conference. Governments and government programs show that there is a constant concern for this area.

Every year there is a big increase in this area. In 2016, the European History of the “Galati” medical and recreational complex was opened. The election of each member of the Association is one of the achievements in this field. In 2015, 35,000 tourists visited the Naftalan resort area, which is the result of the measures taken.

Certain work is being done to attract tourists to our country. If 5–10 years ago there were 30 tourism companies in Azerbaijan, now there are more than 120 of them. In order to improve the quality



of staff in this field, the University of Tourism trains its students and sends them to a foreign country for experience. In addition, [www.azerbaijan.travel](http://www.azerbaijan.travel) tourism portal organized tourism companies, hotels in the country. The portal is important for obtaining information about the nature and transport of the territories.

In order to promote tourism in other countries, electronic banners are placed on the websites.

By the Decree of the President of the Republic of Azerbaijan dated December 29, 2012, "Azerbaijan 2020: The "Concept of the Future" Development Concept has been approved. The concept includes support for the development of the non-oil sector, new jobs in areas such as the opening of infrastructure, the development of infrastructure and transport. Issues such as the acquisition of property were highlighted.

Sustainability of economic development, increase in the level of welfare of the population, assessment of the country's resources and potential, strategic goal of the concept of issues such as the protection of human rights were taken into account.

The concept includes the development of tourism, increasing its role in economic growth, increasing its share in per capita national income, the development of various types of tourism in the regions. support of the Caspian Sea, assessment of the tourism potential of the Caspian Sea, measures and implementation of legislative rules. Creation and improvement of air transportation and railway transport in tourism regions are also substantial. Furthermore, the measures taken in the field of education are comprehensive in this area since it will create the ground for development.

Development of the specialized tourism industry in the Republic of Azerbaijan in 2016 "Strategic Road Map" plays an important role in the organization of medical tourism. Taking into account the potential of Azerbaijan for the organization of medical tourism, a "Working Group" has been established in accordance with the relevant provisions of the Road

Map. The Working Group was established for the development and organization of medical tourism.

In other areas with potential medical tourism, infrastructure upgrades are underway. Draft of "Action Plan for the Development of Medical Tourism for 2018–2020" is already prepared. The plan envisages that the measures will be implemented using international experience. Galaalti, Naftalan and Duzdag resorts are selected for the recognition of our country at the international level. It will be ensured that it will pass international certification [2].

In 2018, the next forum of the Global Medical Tourism Forum was organized. The forum was held in Dubai, United Arab Emirates. About 30 countries participated in the Global Travel Forum. The forum, which was attended by about 500 delegates, was organized under the auspices of the Emirate of Dubai.

The exhibition provided information about Naftalan, Galalati, Istisu, Absheron. Active topics discussed include accreditation, global medical tourism, and health. There have been topics such as relations between the countries of the world, branding, medical tourism and so on. According to the information provided, the purpose of the meeting was to provide experience in the field of medicine and tourism. It was an exchange of knowledge and skills. For this reason, important leaders in the field of tourism from each country have been brought together.

### Results

It can be concluded from the research that the development of tourism, along with many other factors, directly depends on the treatment – medical tourism, which is of special importance in the development of tourism in our country.

The essence of medical tourism and its place in Azerbaijani tourism, the problems arising in the direction of industrialization have a negative impact on human and public health. In an unhealthy society, there is a decrease in working capacity and production capacity.

Medical tourism is the most priority direction in Azerbaijan. Thus, the development of medical tour-

ism using its own oil, the famous Naftalanin and the KalbajarIstisu mineral water in Karabakh, is one of the most important issues of the day.

The “Strategic Roadmap for the Development of the Specialized Tourism Industry in the Republic of Azerbaijan” approved by the Presidential Decree dated December 6, 2016 has opened wide opportunities for the organization of the tourism industry and the development of medical tourism in our country. The development of medical tourism is expected to accelerate in the near future [1].

### **The objectives of the study are:**

- The current state of medical tourism was assessed;
- Factors influencing the development of medical tourism have been identified;
- Resorts and sanatoriums as a health facility have been identified as a tool for the treatment of various diseases;
- treatment – directions of state support for the development of medical tourism were identified and proposals were made.

### **References:**

1. “Strategic Road Map for the development of the specialized tourism industry in the Republic of Azerbaijan”. Decree of the President of the Republic of Azerbaijan dated December 6, 2016.
2. State Program on Development of Resorts in the Republic of Azerbaijan for 2009–2018. Order, – No. 125 of the President of the Republic of Azerbaijan dated February 6, 2009.
3. Law of the Republic of Azerbaijan. “On tourism activities”.– Azerbaijan, 1999. July 27.
4. Bilalov B., edited by Gulaliyev Ch.G. “Fundamentals of tourism”.– Baku, “NGO Publishing House”, 2015.
8. Bilalov. B. Medical tourism in Azerbaijan: problems and prospects. “Tourism and Hospitality Research” magazine,– No. 3.– Baku, “Crescent 3”, 2013.
5. Dr. Kazimov Hasan. “Health from Petrol: Naftalan”. “IRS” International Azerbaijan Magazine,– No. 9. 2014.
6. Heydarov Parvan. “Diamond model of Azerbaijan Naftalan region in terms of health tourism”. Higher undergraduate thesis,– Sakarya University, Institute of Social Sciences. 2016.
7. Gamze Bayın. “Internal assessment of theses made in the field of health tourism in Turkey”. Hacettepe University,– Ankara, 2015.
8. URL: <http://www.mct.gov.az/en/tourism-news3>.<http://www.medeniyyet.az/pages/news/5637/Mualice-tourism:-natural-opportunities-vezeruri-infrastructure.html>
9. URL: <http://www.saglikturizmi.org.tr/tr/saglik-turizmi/genel-bilgi>
10. URL: <http://www.bilgeh-sanatoriyasi.az>

## Section 6. Economics, organization and management of enterprises, branches, complexes

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### DEVELOPMENT OPPORTUNITIES OF MATERIAL AND TECHNICAL RESOURCE POTENTIAL IN THE AGRICULTURAL SECTOR

**Abstract.** The market of material and technical resources is one of the most fundamental concepts of meeting the needs of the agricultural sector with machinery. From this point of view, the development of the market of material and technical resources at the expense of enterprises producing local agricultural machinery is one of the priorities of agrarian policy. Therefore, currently one of the primary issues is to improve the legal framework for the interaction of production and supply entities in agriculture, to ensure the creation of the necessary organizational structure for the development of the market mechanism of the economy.

**Keywords:** material-technical resources, resource potential, requirement, demand and supply, market.

The market economy system reflects the development of large-scale reproduction on the basis of demand and supply of commodity-money relations in all sectors of the economy. The market economy system ensures the sustainable development of the economy if the necessary market modification, including market infrastructure, is formed from both sectoral and territorial complexes. The diversity of one or another type of market is analogous to the functions of market infrastructure in terms of the de-

velopment of a specific sector of the economy. In this regard, the development of the market of material and technical resources has an important role in the sustainable development of the agrarian economy.

The market of material and technical resources reflects the economic relations based on free competition between the institutions producing or offering material and technical resources and their producers [5] (Дороговцева А. А., 2013). The market of material and technical resources is not only an entity that

carries out the process of purchase and sale. The market of material and technical resources is aimed at the development of large-scale reproduction in the economy as a whole, serving to meet the demand for technical means of this and other economic entities, regardless of ownership.

Demand and supply are the most important components of the market of material and technical resources. Demand in the market of material and technical resources is the volume of agricultural machinery in terms of natural and value that will be used by agricultural producers in a given period and is characterized mainly as a manifestation of demand.

Research has shown that attempts to determine demand without the effect of price are unfounded and vary depending on the price. In this regard, the law of demand exists in microeconomics. The essence of the law is that when other conditions do not affect the change in demand for goods, there is a contrary relation between it and the price. This arises mainly due to two reasons. First, when prices are low, the buyer tries to get more goods, and second, when the price of a good falls, the ratio of other goods becomes cheaper and the buyer has the opportunity to make a relatively profitable technique for himself.

The supply characterizes the economic relations between producers and sellers of resources with agricultural producers. The main part of the supply is the supply of goods and reflects the products that are on the market or can be put on the market in response to the solvent demand of agricultural producers in the market. Although the supply is closely related to the production of material and technical resources, these categories differ from each other both in their economic content and in their volume. If production is a category that directly reflects the process of resource development, supply is mainly characterized by exchange and market relations. The supply of goods is less than the volume of production. Thus, the goods produced are intended for sale in the domestic market, as well as for off-market consumers, stock replenishment and export. The resource supply

has a dialectical character and is constantly in motion. It is realized on the one hand, and completed on the other. The supply of goods is determined by quantitative and value indicators, acting in kind and value. The natural form of supply characterizes its consumption value by expressing its ability to meet the demand for material and technical resources. The value form of supply reflects the exchangeable capacity of a commodity and its exchange value. The process of supply formation is mainly characterized by two aspects. Firstly, the adaptation of resources to the ever-increasing demand in terms of quantity and quality, and secondly, its active influence on the rationalization of demand, supply and demand is the main principle of the development of the market of material and technical resources [4] (*Воронкина Д. В., 2012*).

Unlike demand, there is no direct relationship between price and resource supply, in other words, there is a direct relationship. In this regard, the essence of the law of supply in macroeconomics is characterized as follows: While other factors affecting the supply of goods remain unchanged, its volume varies depending on the price. In other words, when prices rise, the seller's incentive to offer more products to the market increases, otherwise a fall in prices leads to a decrease in the volume of products sold. The change in supply in line with the price is primarily explained by the fact that in the event of rising prices, the firm entering the market of material and technical resources uses a high level of production capacity by applying new technology, which ultimately leads to increased supply. Secondly, in the context of a consistent and stable rise in prices, other producers are involved in the industry, which leads to a further increase in production and, accordingly, supply.

Research has shown that it is impossible to achieve labor productivity in agriculture without creating the necessary material and technical base, to reduce labor costs per unit of output, to increase the economic efficiency of production. Most



economists have come to the conclusion that high economic performance in this area is impossible without providing agriculture with machinery and equipment. However, complex mechanization in the agricultural sector can be effective only if the machines and mechanisms required in the process of production of each specific product are applied in a complex way. In other words, the technical resources in the machine-tractor park should lead to complex mechanization, ensure increase in labor productivity on the basis of creating a favorable ratio between individual technical resources [3] (Алфєрєв В., 2012).

As mentioned above, the material and technical base of agriculture also includes land and water resources paired with material and technical resources. In agriculture, material resources consist of fixed assets and material resources and paired with land and water resources, are a significant part of the productive forces as a means of agricultural production. From this point of view, if we look at the park of the main types of agricultural machinery in the example of the Republic of Azerbaijan, we can see that the technical supply indicator for 2016–2020 increased from 21,236 units to 51,470 units, which in general results in increase by 2.4 times. The number of tractors in 2020 compared to 2016 increased by 2.1 times, the number of ploughs by 4.5 times, the number of cultivators by 16.2 times, the number of seeders by 1.1 times, the number of mowers by 10.25 times, the number of mineral fertilizer spreaders by 6.2 times, the number of sprayers and dusters increased 9.9 times and the total number of combines increased 2.4 times. Improving the technical base in agriculture prevents excessive and inefficient use of this equipment by increasing the supply of tractors and machines per 100 hectares. Thus, compared to 2016, in 2020 the number of tractors per 1,000 hectares increased by 2.02 times, and accordingly the amount of sown area per 1 tractor decreased by 51% to 47 hectares. In addition, there was an increase in the number

of cultivators, ploughs, seeders and mowers per 100 tractors. A similar situation is observed in the number of combines per thousand hectares. Thus, this indicator has increased 2.71 times for grain harvesters, 2 times for corn harvesters, 9 times for potato harvesters, 68 times for beet harvesters and 2.82 times for cotton harvesters [11].

However, the modernization of the agricultural sector is one of the priorities of agrarian policy. Excessive use of agricultural machinery leads to a decrease in productivity, adversely affecting the time and quality of implementation of agro-technical measures [1] (Алыев İ. H., Солтанли İ. Q., 2017). In this regard, important attention should be paid to the constant improvement of material technical supply of this area.

In recent years, special attention has been paid to the sale of agricultural machinery on preferential terms to agriculture. The study shows that sales of agricultural machinery in 2016–2020 have a downward trend. Thus, compared to 2016, sales of tractors in 2020 decreased by 77.9% and accounted for 266 units. During this period, 80% of plough sales, 61.4% of cultivators, 73.9% of sowing units, 87.2% of cotton harvesters, 96.8% of fertilizer spreading machines, 82.4% of hay rakes, the number of tractor trailers decreased by 60.6%. The meanwhile, the total cost of machinery and equipment sold in 2020 decreased by 62.3% compared to 2016 and amounted to 52.3 million manats. In addition, it should be noted that per 2016–2020, the highest sales of most agricultural machinery and equipment were observed in 2017. Starting in 2017, preferential sales have tended to decline. Here, in addition to the general downward trend, it should be noted that in 2017, preferential sales of tractors increased by 36.6%, ploughs by 25.1%, cultivators by 5.4 times, sowing units by 70.1%, cotton harvesters by 90.4%, spraying and spraying machines 70.6% and sales of other agricultural machinery and equipment increased by 4.9 times. The cost of machines and equipment sold, increased by 94.2%



in 2017 and accounted for 269.4 million manats [11]. It should be noted that the growth of sales is due to the introduction of preferential terms by the state for the purchase of agricultural machinery and favorable prices.

Strengthening of material and technical resources consolidates scientific and technical, economic and organizational, and other system of measures. These measures should be aimed at the efficient and effective use of these resources and, ultimately at reducing their consumption per unit of output. All these are important condition for solving social and economic problems of society development.

Research has shown that import plays a significant role in meeting the needs for material and technical resources. Thus, in 2016–2020, the import of mineral fertilizers had a positive dynamics, increasing from 166.9 thousand tons to 350.5 thousand tons. Thus, the import of nitrogen fertilizers increased 2.2 times during the reporting period, the import of other types of fertilizers increased 2.1 times, on the other hand, the import of potassium fertilizers decreased by 3.8%. In the first 9 months of 2021, 111.3 thousand tons of fertilizers were imported. This is 2.5 times less than in the first 9 months of 2020 (274.9 thousand tons).

Research indicates that the cost of material and technical resources has a significant share in the structure of expenditures on agricultural products. The physical depreciation of resources leads to crop losses and, ultimately, to the loss of economic activity.

It can be concluded from the research that the market of material and technical resources is the main direction of meeting the needs of the agricultural sector in machinery. It should be noted that the formation of the market of material and technical resources in the agricultural sector at the expense of enterprises producing local agricultural machinery covers a long period. Therefore, the organization of work in the sphere of circulation of means of production in accordance with the

requirements of market relations, it is possible to carry out this process in stages with the necessary state support. The meanwhile, the legal framework for the interaction of production and supply entities operating in market conditions should be improved, and the necessary organizational structure should be achieved to implement the market mechanism of the economy. Obviously, according to the laws of market relations, the funds required for the material technical supply and maintenance of these private farms must be made at the expense of their own funds [8] (*Мамэ Э., Тускье Д., 1993*). Therefore, the import of technical resources from abroad through private institutions is becoming an objective necessity. For this purpose, the legal framework for entrepreneurs to import technical resources from abroad should be improved, and the issue of providing them with soft loans by the state should be considered. First of all, soft loans should be provided at a low interest rate, or the practice of continuous lending should be tested. All these can play an important role in the development of the market of material and technical resources in the agricultural sector.

Establishment of new agricultural machine-building enterprises by attracting foreign investments in order to develop the market of material and technical resources in the agrarian sector, transformation of some existing industrial machine-building enterprises into agricultural machine-building enterprises and the production of various types of machines and mechanisms, equipment, devices and aggregates used in agriculture should be given priority [6] (*Кормаков Л., 2014*). It should be noted that meeting the demand for material and technical resources of local producers at the expense of domestic resource supply leads to the expansion of import channels. This ultimately leads to both shortages and the inability of local producers to meet their needs due to the high cost of equipment.

Assistance in the development of the market of material and technical resources in the agricultural

sector can be carried out in two directions. The first is the establishment of enterprises producing agricultural machinery in the country, and the second is the state subsidizing the level of prices for imported machinery.

Enterprises producing the means of production for agriculture of the Republic can meet a certain part of the existing demand. This is possible only if the enterprises of the machine-building complex of the Republic are supplied with special equipment and advanced technologies to ensure the production of high quality products. Demand for the released products directly depends on its high quality and long service life [9] (*Литвишиков Е., 2010*).

Provision of machine-building enterprises of the Republic with advanced technologies is the main prerequisite for the formation of supply in the market of material and technical resources at the expense of local production. For this, the produced agricultural machinery should satisfy international standards and be able to compete in the world market. One of the important issues is to improve the design and research work in machine-building enterprises in order to increase the competitiveness of agricultural machinery to be produced. For this purpose, first of all, it is important to increase the professional skills of engineering and technical personnel.

In order to assist agricultural producers in meeting their technical needs, it is necessary to implement the following measures:

- creation of the necessary material and technical base for the production of technical means for agriculture, the technical level and indicators of which meet international standards;
- establish the necessary material and technical base for the production of material and technical resources in the agricultural sector, first of all, to adapt the capacity of existing plants and enterprises to the needs of the agricultural engineering industry [7] (*Крохмаль С. С., 2013*);

- establishment of separate auxiliary production areas in order to neutralize the dependence of agricultural machinery manufacturers on other areas;
- establishment of scientific-research, design-technological enterprises and their experimental bases in the field of agricultural engineering, training of skilled workers along with engineers and technicians;
- building of mutually beneficial relations with the relevant industrial enterprises of the republic and other foreign countries;
- development and implementation of complex measures for the access of manufactured agricultural machinery and other means of production to the world market;
- organization of joint production with machine-building enterprises of foreign countries.

That should be taken into account that the financial capacity of various agricultural enterprises is not enough not only to invest in the acquisition of material and technical resources, but also to carry out ordinary production. Therefore, in most cases, the funds raised are widely used. The state target programs are being developed in order to meet the needs of the agricultural sector in material and technical resources in the world practice, as well as prioritizes budget funds.

Intensification of production in the agricultural sector plays an important role in improving the system of supply of agricultural material and technical resources. The effective development of the market of material and technical resources in the agricultural sector depends on the mutual integration of sectors [2] (*Quliyev E. A. 2015*). As it is known, the material and technical resources used in the agricultural sector are mainly imported. In general, as a result of increasing investment in the industrial sector of the national economy, destructive tendencies are emerging in the development of agriculture. Thus, the development of industries is accompanied by an increase in the flow of

labor from agriculture to other sectors, and the emergence of structural contradictions in agriculture on the other hand. The intensification of the agrarian sector depends on the industrialization of agricultural production. Historically, this function has been performed by processing industries. It is obvious that agricultural products are delivered to the trading enterprises via passing through the industrial stage in processing enterprises, and then to consumers. The meanwhile, if the products come to consumers directly from agriculture itself – crop production and animal husbandry, now most of these products go through the stage of industrial processing and are consumed as finished products.

According to conducted researches, accurate economic mechanisms are not used in pricing, and those who sell resources determine prices as they wish. When analyzing the activities of farms, it becomes clear that their resource needs are often not fully met. This in turn, has a negative impact on production and quality.

For the efficient functioning of the market of material and technical resources, it is necessary to ensure a parity ratio of prices for agricultural and

industrial products. One of the most important directions in the development of the market of material and technical resources in the agricultural sector is the creation of favorable conditions for the availability of machinery and mechanisms necessary for the implementation of agro-technical measures, meeting the demand for agrochemicals and plant protection products [10] (Степанов В. И., 2009). Sustainable development of the agrarian sector, ensuring equipment growing for affordable agricultural products is to ensure the optimal implementation of agro-technical measures in the regions of the country with different soil and climatic conditions, mechanization of manual labor and the creation of a complex system of machines and mechanisms.

State regulation of the market of material and technical resources in agriculture is one of the main directions of the effectiveness of this market. From this point of view, in the conditions of increasing the material and technical base of consumers, economic improvement of farm entities, the main task is to gradually achieve the efficiency of free supply and sales market.

### References:

1. Aliyev İ. H., Soltanlı İ. Q. "Aqrar sahənin modernləşməsi və rəqabət qabiliyyətliliyinin təmin olunması problemləri". – Bakı; "Avropa". 2017. – 428 p., P. 61–63, 117 p.
2. Quliyev E. A. "Aqrar iqtisadiyyat" Ali məktəblər üçün dərslik. "Kooperasiya" nəşriyyatı, – Bakı, 2015. – 322 p.
3. Алферьев В. Совершенствование рынка материально-технических ресурсов: моногр. / Владимир Алферьев. – М.: Palmarium Academic Publishing, 2012. – 902 с.
4. Воронкина Д. В. Резервы и методы повышения эффективности производительного использования материальных ресурсов / Д. В. Воронкина // Известия ТулГУ. – № 1. 2012. – С. 113–143.
5. Дороговцева А. А. Определение эффективности комплексного использования материальных ресурсов / А. А. Дороговцева // Проблемы развития территории. – № 4. 2013. – С. 52–70.
6. Кормаков Л. Рынки материально-технических ресурсов для села: проблемы и решения / Леонид Кормаков. – М.: LAP Lambert Academic Publishing, 2014. – 196 с.
7. Крохмаль С. С. Управление материальными ресурсами на промышленном предприятии / С. С. Крохмаль // Бизнес информ. – № 10. 2013. – С. 87–110.
8. Матэ Э., Тискье Д. Материально-техническое обеспечение деятельности предприятия. Пер. с франц. А/О Издательская группа «Прогресс», – М., 1993. – 16 с.

9. Литвишков Е. Материальные ресурсы предприятия: анализ использования / Е. Литвишков. – Москва: Лаборатория книги, 2010. – 49 с.
10. Степанов В. И. Нормирование расходов материальных ресурсов: учебное пособие / В. И. Степанов. – М.: Издательский центр «Академия», 2009. – 176 с.
11. URL: <http://www.stat.gov.az>

<https://doi.org/10.29013/EJEMS-22-1-69-76>

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## **THE ROLE OF WOMEN LEADERSHIP IN PRIVATE COLLEGE ORGANIZATIONS IN MANADO CITY (A PHENOMENOLOGICAL APPROACH)**

**Abstract.** Women's leadership is a public issue that is always being discussed, and has provoked polemics and debates between the pros and cons of women leaders in a country, although recognition of basic human rights seems to have increased significantly in various parts of the world. This study aims to determine the role of women's leadership, and what role is prominent and dominant as well as what obstacles are encountered by female leaders at Private Universities in the City of Manado. This research uses a phenomenological approach. This study provides the results that women's leadership can be accepted in an organizational environment. The ability to interact and motivate is the key to the success of women's leadership. Instructional leadership is a style of leadership that is relevant and suitable in an effort to improve the performance of the teaching staff in the organization of private universities in the city of Manado.

**Keywords:** Women Leadership; Woman's Role; Organizational Environment; Instructional Leadership; and Manado City.

### **I. Introduction**

Leadership is a mutually encouraging process through the successful interaction of individual differences, controlling human resources in pursuit of shared goals. Leadership is not based on gender (men and women) or race (Martinez-Leon et al. [17]), but controls the situation (Archanjo de Souza et al. [2]), understanding of planning actions, and also has the ability to coordinate in completing tasks.

The difference between male and female leadership has been brushed aside by the leadership of women in various roles and strategic positions in social life (Archanjo de Souza et al. [2]). Reality shows that women's participation in carrying out

a leadership process proves that women are also a potential resource if given equal opportunities to play a role in various aspects (Billava & Nayak [3]). Women have the ability to gain and manage the highest position, authority and power (Hausermann [11]). This causes women not only to become housewives by doing domestic work alone but also have a leadership spirit that needs to be developed (Horlings et al. [12]). With the creation of the role of women in the opportunity to play a role as leadership can bring a positive impact (Haack [9]), namely the issue of gender equality is characterized by the absence of difference (discrimination) between women and men. Thus, women and



men have the same opportunity or access in leadership (Gupta [8]).

In an organization or institution, the dominance of men as leaders is still so strong. When in fact, women also have the potential that is not inferior to men in terms of leadership. Leadership, cannot be separated from individuals who act as leaders themselves. Many link between the ability of individuals to lead with biological aspects inherent in the leader that is based on differences in the sexes of men and women (McTavish & Miller [18]). This then led to the emergence of the term gender inequality (male and female sexes) which then put women in an unfavorable condition, even though women are human resources whose numbers are even greater throughout the world than men.

This research was conducted to explore the role of women's leadership in educational institutions, namely Private University in Manado City. The results of this study are expected to provide an overview of the leadership of women in the bureaucracy of private tertiary institutions and their obstacles. This knowledge can then be useful for developing the potential of women in the field of leadership, particularly in accelerating the development of private institutions in Manado City. In addition, it also aims to classified some specific issues such as follows: describing the leadership role implemented by Women's Leaders in Private Universities in Manado City; what dominant leadership role is implemented by women leaders in Private University in Manado City; describing the role of relevant leadership in an effort to improve the performance of the teaching staff in the organization of Private Universities in Manado City; and describing what obstacles women leaders, face in carrying out their leadership duties at the Private University in Manado City.

## **II. Literature review**

### **A. The Role of Women's Leadership**

To become a complete leader, the leader in carrying out leadership is required to carry out the leadership role effectively, both as a determinant of direc-

tion, agents of change, spokespersons and trainers, in order to improve the ability of employee resources in an organization. The role comes from the word role, meaning something that is part of or holds leadership primarily. The role according to (Levinson [16]) was a concept about what individuals can do that is important for the social structure of society, the role of covering norms developed with one's position or place in society, roles in this sense are a series of rules who guides someone in social life. According to (Currie & Procter [4]), a role was a series of formulations that limit the behaviors expected of a particular position holder. For example, in the family, mother's behavior in the family is expected to give advice, give judgment, give sanctions and others. Adopting the opinions of these two experts,

Starting from the general definition, the leadership role is nothing but attitude and behavior in influencing Human Resources or employees, so that they are willing and willing to work and work together, to achieve organizational goals effectively and efficiently, in accordance with those set by the organization. Adopting the opinion from (Kamlesh & Aarti [15]), stated from the opinion that a leader will appear if he can perform a real role in carrying out activities such as setting direction for his subordinates / staff, inviting his subordinates to participate in implementing policies or facing various changes, becoming a spokesperson in making decisions for the benefit of the organization and the welfare of its members even if the decision is risky.

The realization of the role of women in having the opportunity to take a role as leadership has a better impact on the issue of gender equality characterized by the absence of discrimination between women and men (Indrasari et al. [14]). Thus, between women and men have the same access in achieving a leadership role. (Wolfman [24]) said that the priority of women is the ability to maintain relationships. Women are interested in helping others develop and express themselves and help them find satisfaction. The nature of nurturing comes from the biological

role of women. Women have the natural ability to create, nurture and encourage the growth of all that is done for and with others.

(Harvey et al. [10]; Wolfman [24]) stated that the suggesting several key factors for achieving women's leadership success, including as follows:

1. The ability to recognize, create and capture opportunities;
2. Be aware of the needs of people at work;
3. The need for support at all levels;
4. Determination to succeed;
5. Qualification;
6. Having sensitivity will be expressive.

Meanwhile, according to the ability of women to lead formed and influenced by individual characters, from within and from outside the environment. This can be seen, for example, when they choose certain choices in acting differently from others, maintain their attitude, often decide on something for a long period of time, and when facing various difficulties and problems. (Wolfman [24]) went on to say there are four specific statements about the quality of women's leadership:

1. Women leaders are more persuasive than men;
2. When feeling resistance, women leaders learn from the difficulties they are experiencing;
3. The female leader shows an overall involvement, building team work, including problem solving and decision making;
4. Female leaders are more likely to ignore rules and take risks.

(Algahtani [1]) stated that Mintzberg as suggesting some of the roles of a leader in managing an organization. (Mintzberg [19]), put forward the role of every leader regardless of the hierarchy laid out in three main roles. The role is described in more detail in ten roles. These roles include the following as follows:

#### 1. The Role of Interpersonal Relations (Role)

The picture associated with this role is the status and authority of the leader, and matters related to interpersonal relationships. Activities used in this

role include ceremonial activities related to positions attached to the leader. Because the leader has a high position, then the excess leader must always hold certain contacts to outside parties. This role is divided into three roles by Mintzberg as a further breakdown of this interpersonal role, namely:

a) The role of the figure (figurehead role). A leader has legal, social, ceremonial responsibilities and also acts as a corporate symbol. A manager is expected to be a source of inspiration. For example, a manager will usually do ceremonial things such as attending the deduction of the inauguration, signing legal documents, greeting guests and serving as reception hosts;

b) The role of a leader (leader role). A manager serves as a leader in a team, department or organization. Selecting and training employees and managing performance and motivating employees;

c) The role as a liaison role. A leader must maintain communication with the company's internal contacts as well as the company's external contacts. For example, participating in meetings with representatives from other divisions / departments or other organizations.

#### 2. The role associated with information (informational role):

The leader conducts outward relations to obtain information from outside the organization. Information is obtained and collected by company leaders who are then shared with employees. Making leaders the center of information for their organizations. This role is divided into:

a) The role of a monitor (Monitor role). In this monitoring role, a manager acts as a seeker of information relating to the industry and its organization. A manager also monitors the team he leads both in terms of productivity, performance and work comfort of his team members;

b) The role as information sharing (disseminator role);

c) Role As a spokesman (spokesman).

#### 3. The role of decision making (decisional role)

The role that makes leaders involved in the process of making strategy in the organization being led. The process of making this strategy is simply called a process that makes organizational decisions made significantly and related. The role of decision making by the leader is a role that must not be carried out, after all this role is what distinguishes between managers and implementers. There are four role leaders who are grouped into decision making as follows:

- a) The role of an entrepreneur (entrepreneur role);
- b) The role of a disturbance handler role;
- c) The role as resource allocator (resource allocator role);
- d) The role as a negotiator (negotiator role).

(Grove & Montgomery [7]) conducted research in education and concluded that there were differences in the leadership styles of women and men, namely:

1. It lies in how to understand leadership. Men see leadership as directing and women see leadership as facilitating;

2. In terms of aspects of work, even though male and female leaders perform the same tasks in their work, there are still many different aspects of work. Women strengthen relationships, togetherness and process. But men focus on tasks, achieving goals / objectives, mastering information;

3. Men in leadership positions are more likely to lead from the front, trying to have all the answers for their men. Women tend towards facilitative leadership, letting their men contribute through delegation, assistance (encouragement) and push from behind;

4. In the world of education, women emphasize instructional leadership in supervision practice and pay close attention to individual differences, regarding methods of teaching curriculum and teaching objectives. In instructional leadership (education), women spend more time as school leaders and teachers, have higher degrees than men, they emphasize the importance of curriculum and teaching in their work. Women leaders focus on instructional leadership, men are more concerned with organizational issues.

5. Because women's main focus is on relationships, they more often interact with teaching staff, students, parents, communities, colleagues and superiors. Instead, men emphasize the completion of tasks and they tend to lead through a series of tangible rewards including giving rewards to employees for the completion of a job and giving punishment to employees who do not complete their work;

6. Many women support decision making and are contributive and consensual and emphasize aspects of the process, but men tend to choose majority rule and tend to emphasize products and goals;

7. Men use traditional top-down leadership styles, while women are more interested in transforming people's personal interests toward organizational goals by strengthening feelings, self-esteem, active participation and sharing power and information;

8. Women leaders spend more time in unscheduled (informal) meetings. Prefer to interact with staff and spend more time with subordinates to discuss academic issues and curriculum teaching. Women leaders are better able to influence their subordinates to use better teaching methods.

In addition, according to (Goethals & Hoyt [6]) mentioned that both male and female have the similar opportunities in a leadership organization as far as they can take a role in creating the better condition in their organization that they have been led. In such this condition, they should have been able to solve the problem by being fair or neutral without seeing the gender or racial background around this environment, the fairness come from their ability and responsibility as well as skill in managing an organization. Therefore, the leader should have a knowledge broadly relates on leadership management and human resource management. According to (Rollero et al. [21]) the fair role between man and women in an organization sometime relates on political role. When a women have the higher position in an organization, usually, they are been underestimated by male parties because the psychological of woman itself. Mostly woman determine their feeling that the logical thing,



but nowadays, woman is able to put both of the feeling and logical term in a decision-making process.

### III. Research methods

The research technique used in this study is phenomenology. Phenomenology is one of the qualitative research methods. (Fischer & Miller [5]; Moleong [20]) mentioned that, basically research was an activity or a systematic process to solve problems carried out by applying scientific methods. Then the suitable scientific method to solve the problem in this research is to use phenomenology techniques. Phenomenology is a technique that studies everything related to the description of one's experiences that are directly experienced, the way a person experiences that direct experience, and the meaning of experiences experienced by someone (vom Lehn [23]). Phenomenology does not only focus on the problem of mere phenomena, namely the conscious experience from the point of view of the first person to experience the experience firsthand. Phenomenology seeks to understand how informants construct meaning from the symptoms of the experiences they experience firsthand. Phenomenology research aims to look for phenomena that do not appear in order to become visible facts and analyze phenomena that appear based on the results of the search for facts that are not visible.

This research uses two data sources, namely primary data and secondary data. Primary data sources, obtained from field studies, namely the process of gathering information, data, and facts directly on the object of research, by: Observation, in-depth interviews (in-depth interviews) (Hox & Boeijs [13]). Secondary Data Sources, obtained through the study of literature / literature, namely secondary data collection techniques by studying books or written materials that are related to the topic to be studied, including other written data originating from institutions that are used as research objects including studying documents which are related.

The research instrument is a tool used for data collection in research. Research with qualitative methods, the instrument is the researchers them-

selves, the role of researchers who determine the entirety of what he designed. Thus, the research instruments used in research with qualitative methods are the researchers themselves.

The use of researchers as research instruments aims to obtain empirical data in the field. The research instrument used was interviews and observations of research objects through a number of deepening. Interviews through a number of focused questions are carried out logically related to the research problem, and each question is an answer that has meaning. In conducting in-depth interviews, the authors determine several sources or informants who are considered the most representative to answer questions regarding the focus of the study. The determination of informants is based on position, experience and understanding of the problem under study.

The selection of informants is done purposively, that is, those who have sufficient knowledge and are able to explain the true state of the research problem to obtain specific data. Informants are people who are in the scope of research, meaning people who can provide information about the situation and conditions of the research background. So, he must have a lot of experience on research issues and voluntarily becoming sources of information, although not formally, they can provide their insights from the values, attitudes, buildings, processes and culture that are the setting of local research. According to (Shakman et al. [22]) stated that data analysis in qualitative research is the process of organizing data sequences, organizing them into patterns, categories from a basic description.

Broadly speaking, the steps in the data analysis proposed by (Shakman et al. [22]) above are as follows: Study the data; Data reduction; Triangulation; Interpretation of data creates final conclusions.

### IV. Results and discussion

The role of women's leadership is none other than the attitudes and behavior of women in influencing human resources, so that they are willing and willing to work and work together, to achieve organizational goals effectively and efficiently, in accordance with

those set by the organization. With the creation of the role of women in the opportunity to play a role as leadership can bring a positive impact, namely the issue of gender equality is characterized by the absence of difference (discrimination) between women and men.

The results of the study can be described as follows; The specific characteristic of the difference between female and male leadership was acknowledged by the informant. But not really felt. Certainly, different leadership characteristics. It has been a common opinion that women are more sensitive and emotional. Whereas men are more rational. But the most important thing is how the quality of one's leadership regardless of gender. Both women and men have a leadership spirit that is not much different and also has the same right to be a leader. The relationship between leaders and subordinates is one of the supports of success. (Grove & Montgomery [7]) mentioned that women's leadership places more emphasis on establishing relationships with subordinates. Research shows that informants do recognize that establishing strong relationships with subordinates is inseparable. Good cooperation between leaders and subordinates opens as wide a space as possible in achieving organizational goals. In this case communication needs to be done to equalize perceptions about work and goals to be achieved.

Women leaders take a role as facilitators and motivators. The results of the study confirm that women's leadership is more directed at how she acts as a facilitator and motivator. This good and right leadership style is really needed by employees as role models to become successful people and can become good when they can become positions as leaders. Women are very suitable if they are made as facilitators and motivators in the organization, remembering the spirit that exists in women who, if empowered, will show a greater personality in leadership. In this position women are more able to provide good examples for their subordinates and can invite them to further hone their abilities in self-actualization. Female leaders focus on instructional leadership. The informant acknowledged that instructional leader-

ship was more appropriate to be used by women in carrying out their leadership. Especially considering the progress of the era and technology today all systems in the organization must be based on learning. In the context of private tertiary institutions as educational institutions, all must be adapted to the applicable curriculum and existing facilities and infrastructure so that learning outcomes will be seen very clearly in the achievements made.

Female leaders interact more often with staff. Research results prove this. The informant stated that as a leader a woman must interact more with her subordinates. The decision-making process of women leaders prioritizes consensus. The informant acknowledged that even though a leader has strong authority, in terms of decision making, it must be done by consensus because it involves togetherness and how to maintain a good relationship between leaders and staff. Women leaders prioritize transformation by strengthening feelings and self-esteem. The informant said that transformation was a dream for leaders who wanted their organizations to be able to survive in a very dynamic political, economic and social situation, certainly in order to bring the organization to a better place. On the other hand, integrity is something that must be upheld by anyone (male or female) because if self-esteem is mortgaged the organization will lose its credibility in the eyes of the people so that goals cannot be achieved. But it must be recognized that perhaps as women tend to be emotional in dealing with a particular problem faced.

The leadership of women leaders is willing to share power and information with staff. Research shows that informants do not fully recognize this. They say that there are things that can be shared and some that are not. Sharing power according to informants can actually have bad consequences, namely weakening a woman's leadership position. Women leaders spend more time in informal meetings. The informant said that in the capacity as a leader, being present at informal events was needed to add refer-



ences and as a learning process that could contribute to his leadership. Female leaders prefer to interact with their staff and spend more time with subordinates to discuss organizational issues. This research informant acknowledged that as a leader, he must be able to establish good communication with his staff. This is a good strategy. Leaders can also learn to understand the character of their subordinates.

The role of leadership in improving the performance of educational staff. The informant said that efforts to improve the performance of education staff can be done in various ways, the first starting from the leader himself. Discipline carried out by the leader will be a motivating factor for subordinates to work. Besides of course the informant acknowledged that training programs were important to be followed by the education staff. In addition, remuneration is also an important aspect to be carried out in order to achieve the performance of the teaching staff which in turn will make a positive contribution to the organization. Barriers experienced in running leadership. Research informants said that communication barriers were the main problem faced in his leadership. In addition, there are still parties who lack respect and appreciation for women's leadership.

## V. Conclusions and recommendations

Based on the results of the analysis and discussion, several conclusions can be drawn, namely:

1. In general, every woman has been able to carry out their duties and leadership roles well even though there are still obstacles such as lack of communication and low recognition and appreciation from other parties. Especially from the organization he leads.

2. Leadership style that is relevant and dominant in relation to efforts to improve the performance of teaching staff is instructional style because basically not all leaders are able to lead as leaders.

Referring to the conclusions above, the following steps can be carried out, namely:

1. Women leaders in the private university environment in the city of Manado should improve their communication skills with the ranks of leaders and also with their subordinates. Evaluation and improvement of leadership performance is the right step to prove that leadership responsibilities can be carried out properly.

2. In the current era of globalization, leadership success can be measured by the ability of a leader and the organization he leads to adapt to many changes. Then the style and quality of leadership needs to adapt to the changes that occur.

## References:

1. Algahtani D. A. Are Leadership and Management Different? A Review. *Journal of Management Policies and Practices*. 2014. URL: <https://doi.org/10.15640/jmpp.v2n3a4>
2. Archanjo de Souza D. S. de O., Pedro Salgado A. M., Marins F. A.S. & Muniz J. The influence of leaders' characteristics on the relationship between leadership and knowledge management. *Knowledge Management Research and Practice*. 2020. URL: <https://doi.org/10.1080/14778238.2020.1730716>
3. Billava N. & Nayak N. S. Empowerment of Women Representatives in Panchayat Raj Institutions: A Thematic Review. *Journal of Politics and Governance*. 2016. URL: <https://doi.org/10.5958/2456-8023.2016.00001.2>
4. Currie G. & Procter S.J. The antecedents of middle managers' strategic contribution: The case of a professional bureaucracy. In *Journal of Management Studies*. 2005. URL: <https://doi.org/10.1111/j.1467-6486.2005.00546.x>
5. Fischer F. & Miller G.J. *Handbook of public policy analysis: Theory, politics, and methods*. In *Handbook of Public Policy Analysis: Theory, Politics, and Methods*. 2017. URL: <https://doi.org/10.4324/9781315093192>

6. Goethals G.R. & Hoyt C.L. Women and Leadership: History, Theories, and Case Studies. Forum on Public Policy Online. 2017.
7. Grove R. & Montgomery P. Women and the leadership paradigm: Bridging the gender gap. National Forum Journal. 2000.
8. Gupta N. Gender inequality in the work environment: A study of private research organizations in India. Equality, Diversity and Inclusion. 2017. URL: <https://doi.org/10.1108/EDI-04-2016-0029>
9. Haack K. Women, Organizational Crisis, and Access to Leadership in International Organizations. Journal of Women, Politics and Policy. 2017. URL: <https://doi.org/10.1080/1554477X.2016.1219581>
10. Harvey G., Kelly J., Kitson A., Thornton K. & Owen V. Leadership for evidence-based practice-Enforcing or enabling implementation? Collegian. 2020. URL: <https://doi.org/10.1016/j.colegn.2019.04.004>
11. Hausermann H. E. Unintended Developments: Gender, Environment, and Collective Governance in a Mexican Ejido. Annals of the Association of American Geographers. 2014. URL: <https://doi.org/10.1080/00045608.2014.910075>
12. Horlings L.G., Roep D. & Wellbrock W. The role of leadership in place-based development and building institutional arrangements. Local Economy. 2018. URL: <https://doi.org/10.1177/0269094218763050>
13. Hox J.J. & Boeijs H. R. Data Collection, Primary vs. Secondary. In Encyclopedia of Social Measurement. 2004. URL: <https://doi.org/10.1016/B0-12-369398-5/00041-4>
14. Indrasari D.N., Rahman F. & Abbas H. Middle Class Women Role in the 19th Century as Reflected in Bronte's Wuthering Heights. ELS Journal on Interdisciplinary Studies in Humanities. 2020. URL: <https://doi.org/10.34050/els-jish.v3i2.9143>
15. Kamlesh G. & Aarti C. Role of Opinion Leadership and Communication Strategies in Innovation, Adoption and Diffusion. Journal of Management Sciences and Technology. 2016.
16. Levinson R. Promoting the role of the personal narrative in teaching controversial socio-scientific issues. In Science and Education. 2008. URL: <https://doi.org/10.1007/s11191-007-9076-8>
17. Martinez-Leon I.M., Olmedo-Cifuentes I., Martínez-Victoria Mc. & Arcas-Lario N. Leadership style and gender: A study of spanish cooperatives. Sustainability (Switzerland). 2020. URL: <https://doi.org/10.3390/su12125107>
18. Mc Tavish D. & Miller K. Management, leadership and gender representation in UK higher and further education. Gender in Management. 2009. URL: <https://doi.org/10.1108/17542410910950868>
19. Mintzberg H. Unconventional wisdom: A conversation with Henry Mintzberg. Leadership in Action. 2003. URL: <https://doi.org/10.1002/lia.1028>
20. Moleong L. J. Metodologi penelitian kualitatif/penulis, Prof. DR. Lexy J. Moleong, M. A. In PT Remaja Rosdakarya. 2018.
21. Rollero C., Rutto F. & De Piccoli N. Political leadership from a gender perspective. In Perspectives in Leadership. 2013.
22. Shakman K., Goodyear L., DeLisi J., Schiavo N., Mansori S., Rodriguez S., McMahan T., Louie J., Greller S., Fitzhugh G. & Irwin C. Book Review: Qualitative Research & Evaluation Methods: Integrating Theory and Practice (4<sup>th</sup> ed.). American Journal of Evaluation. 2017. URL: <https://doi.org/10.1177/1098214016689486>
23. vom Lehn D. Phenomenology-Based Ethnography for Management Studies and Organizational Analysis. British Journal of Management. 2019. URL: <https://doi.org/10.1111/1467-8551.12309>
24. Wolfman T. G. The Face of Corporate Leadership. New England Journal of Public Policy. 2007.

<https://doi.org/10.29013/EJEMS-22-1-77-81>

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## ORGANIZATIONAL DIRECTIONS OF BEE-KEEPING PRODUCTS BASED ON THE INDUSTRY IN OUR REPUBLIC

**Abstract.** Converting bee-keeping into industry-based households is a long-lasting and complicated process and needs empowerment of material-technical base and advanced ways of production technologies. It consists of the specification, centralization and the improvement of organisational structure of production. Main purpose of industry-based bee-keeping is to increase the volume of the production with low-cost labor and financial resources. It is obtained with the centralization of production tools, succession of specialization, appliance of industrial technology and mechanisation, effective organization of production procedure and all other kinds of stock sources of production.

**Keywords:** specialization, increase of production, centralization of means, effective use, concentration of household structure.

Related to the passage to market economy, in Azerbaijan the development of the provision of food among the nation balancing various branches of the economy, meeting the raw material needs of industry, raising export potential of this field, by this way reaching other developed countries is an actual problem currently.

As the implementation of economic reforms become deeper and deeper gradually, most branches of agrarian sector face with difficulties in the solution of a number of historical, economical tasks, cannot afford to execute its basic functions.

Lately, one of these fields – bee-keeping has not been able to totally meet the needs of people to honey – irreplaceable food for the nation irrespective of the fertile soil and climatic conditions.

Hence, one of the radical tasks ahead is the export of bee-keeping products, provision of local demand, its organizational sides.

Bee-keeping is such a kind of agriculture that contains keeping of honey-bees, their increase, preservice, their usage in the pollination of entomophil plants, production of bee products and so

on. Development of this field will play a vital role in both gaining economic/medical benefit and improvement of ecological situation [4].

In our republic, even in the Soviet era, a number of beekeeping enterprises were active. In the territory of the country, some collective farms and sovkhozes were kept in large numbers and used for the pollination of plants. In this way, clean, quality agricultural products were obtained.

In our country, special attention is paid to the development of beekeeping in recent years. Based on the Law of the Republic of Azerbaijan “On bee-keeping” dated 02 February 2009 and the Decree of the President of the Republic of Azerbaijan dated April 14, 2009 on the approval of this Law, special attention is given to the development of beekeeping farms in separate regions of our country. Important measures are being taken to increase bee families, as well as to increase productivity.

However, the fact that honey production in our country is still low is very sophisticated. Thus, at present, very small part of the population's demand for the population is paid out of domestic capacity.

Research has shown that in modern conditions the material base of this area is obsolete, and beekeepers lack even the smallest equipment and materials. The infrastructure that serves the beekeeping industry in our republic has not been fully formed. Beekeepers face great difficulties in selling their products. Despite the fact that the population is in demand among the good quality of Azerbaijan, the mechanism of delivery of points to buyers has not been developed. In this regard, scientific research on the organization of honey production in our Republic is of great urgency.

Despite the fact that the population is in demand among the good quality of Azerbaijan, the mechanism of delivery of points to buyers has not been developed. In this regard, scientific research on the organization of honey production in our Republic is of great urgency. Beekeeping in Azerbaijan has developed from very ancient times. Beekeeping is one of the safest environmental aspects of agriculture. The development of beekeeping is of particular importance in today's global food security. The 21<sup>st</sup> Century, characterized by globalization and integration, is also regarded as the century of information in the world. Naturally, in such a period, expanding foreign economic relations, accessing the foreign market, becoming an active participant in global economic events, and ensuring national interests in all of these contexts has become a prerequisite for the existence of every independent state. Deepening the globalization and integration process in the world greatly contributes to competition, which puts certain tasks in the national economy, science, and economics. The "Azerbaijan 2020 – Vision for the Future" Development Concept, designed to succeed in addressing these challenges, has clarified many aspects of the new era, and demonstrated the proper solutions to the problems.

The successful implementation of the socio-economic development programs of the regions (2004–2008, 2009–2013, 2014–2018) in recent years has contributed to the development of the regions, the reduction of the country's economy's oil dependence

and the development of the non-oil sector caused. This, in turn, contributed to the increase of production in the agrarian sector and improvement of the employment of the rural population on the basis of other measures, and solution of social problems of the villages. The "Development Strategy for Agro-Industrial Complex in the Republic of Azerbaijan for 2014–2020" defines the key development priorities that ensure sustainable development of the agrarian sector for a long-term perspective and continually improve the living standards of the population engaged in agriculture, as well as broader reforms. The strategy identifies key methodological approaches to the development of the agricultural and food industries, including key policy instruments that will support the agrarian sector in the next seven years. Considering that one of the main components of government support for agriculture, the state procurement and packaging of beekeeping products has been specifically considered as a problem and its solutions have been identified.

Thanks to the economic reforms in the Republic of Azerbaijan and the complex measures taken, the tendency to decline in agrarian production has been prevented and a solid foundation has been laid for many important areas of the economy. It was emphasized that issues such as the establishment of a legal and regulatory basis for the implementation of radical economic reforms in the agrarian economy system, the implementation of land reform, the development of new forms of ownership and business, the growth of sales channels of produced products, and the formation of market relations in agriculture compared to other sectors of the economy. Despite all this, it is clear from studies that the creation of complex bee-keeping farms and its development on the basis of the available achievements in the field of agrarian industry, which is one of the traditional areas of the agrarian sector, is one of today's most important issues.

Perennial observations and experiments on beekeeping have shown that in recent years, the country's availability of bee-keeping fodder has been reduced,



leading to a loss of interest in beekeeping, thereby reducing the productivity and the negative impact on the production of stable beekeeping products. Therefore, the creation of bee-keeping farms and transition to professional beekeeping is a necessity in our republic.

Increasing the number of bee families (more than 100) in the openings for improving livestock farming in our country, improving the basements of the hive, introducing modern cutting technology in this field and specializing in the production of beekeeping products (bee breeding, bee, honey, flower powder, etc.) should be made. The process of transferring beekeeping farms to industry is a complicated and long-term process, requiring the strengthening of the material and technical basis, the application of advanced production technology. The process of transferring beekeeping to the industry is based on the specialization and concentration of production and the improvement of the organizational and economic structure. The main purpose of the organization of beekeeping on the basis of industry is to increase the volume of production by using less labor and funds. This is achieved by the concentration of production assets, the sequence of specialization, application of industrial technology and mechanization, the efficient organization of production processes and the efficient utilization of all the spare sources of production. Increased labor productivity in the dumps can be achieved by applying new and progressive technologies in large-scale openings. Large beekeeping farms are able to obtain more mechanical means and, when used efficiently, costs are quickly paid.

Use of inter-sectoral and inter-farm specialization is crucial when transporting beekeeping to industry. It is better to select the following directions during such specialization:

- score;
- balloon-pollinator;
- Do not search.

When organizing a large ballooning industry, it is necessary to dismiss the ridge and its assistant from the work of breeding mattresses for high labor produc-

tivity and to reduce the cost of produced honey. The arykanean must be provided with the exclusive aryshilik of the farm only with the fermented mother bee.

Thus, it is clear from the investigation that the creation, deployment, management of modern beekeeping farms and their organization on the basis of industry can be accomplished by the use of the latest technologies using specialization, concentration [5].

Specialization plays a major role in raising labor productivity in beekeeping farms, applying cutting-edge techniques, improving production technology and improving product quality.

“It is essential to improve the productivity of beekeeping farms, to apply advanced techniques, to improve the production technology and to improve the quality of the product” [3, P. 410].

Today small-scale private farms operating in different regions of our country have achieved high results in various fields, taking advantage of economic reforms in our country. Research shows that, in modern times, stock societies, one of the most widespread forms of corporate governance, operate in all spheres. In my opinion, it would be more expedient to create a joint stock company by pooling small volumes of small businesses in regions. Thus, the creation and operation of large beekeeping farms would be economically more efficient. It would be beneficial for the development of both sectors, such as joint stock companies, small farms, and their own farming. In the Soviet period, a number of beekeeping farms functioned in the Republic as a part of collective farms and sovkhoses.

Existence of kolkhozes and sovkhoses facilitated the solution of many problems of these farms: – financial provision of farms; – Provision of feed bases; – veterinary service, support and supporting materials, – taking account of beekeeping farms when combating pests and application of drugs; – Arrangement of beekeeping products, etc. The solution of the above mentioned problems with the full support of kolkhozes and sovkhoses created the conditions for complete adjustment and ultimate efficiency of

beekeeping farms. Today in our Republic favorable conditions for the development of this sphere have been created. To my mind, our scientists need to prepare their own concepts for the development of this field and to carry out scientific researches in the direction of creation of modern beekeeping farms.

For the establishment of such farms, specialists from different fields should work together: – biologists deal with biological issues of this area; – ecologists, environmental factors that affect the site; – republican and local executive authorities, – economists, economic issues of the field, etc.

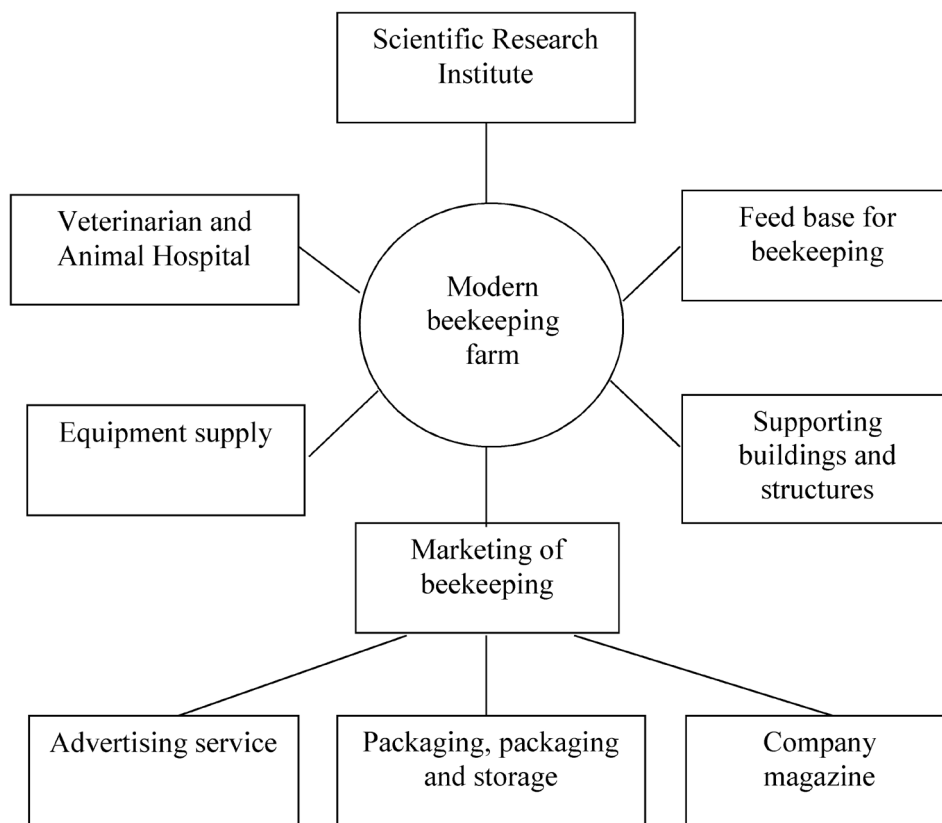


Figure 1.

As it is seen from the scheme, it would be expedient to create a modern complex of beekeeping farms in the complex of the Scientific Research Institute. Also, the creation of modern beekeeping details is based on the conservation of Aryagers, the Aristocrats' Association, placement of archaeans in various plant products, veterinary services to ensure the fight against bee diseases, and providing them with facilities and facilities for the normal functioning of beekeepers, packaging, packaging, storage of beekeeping products and, in the end, sales are important issues. It is clear from the survey that today or the above listed issues have not been solved in a complex way in the beekeeping farms operating in our country. In the current period of mar-

ket relations, the rise of beekeeping farms, increase in productivity and economic efficiency are directly dependent on the proper organization of the products produced. Thus, the organization and management of modern beekeeping farms directly depends on marketing issues in this area. Advertising, packaging, packaging and storage of beekeeping products is a good option for those farms and, ultimately, the sale of the farm at the "Firm" store.

In the developing countries, the main problem of the artery is the issue of selling beekeeping products to one of the suppliers on the basis of previously concluded contractual terms. Establishing the supply mechanism relieves the arachn from packing and

marketing costs and expands the time and cost of the product, generating more and more productive products at the expense of the savings. Therefore, it would be expedient to establish a supply chain of beekeeping products. Research shows that it is also possible to obtain high yields from the production of other beekeeping products (bee bags, bee, flower, honey, bee, bee poison, etc.), and in some cases the income from other bee products many times more. In our country, it is possible to transform this area into a more profitable area by creating bee-keeping farms specializing in the production of bee, bee packets, bee milk, flour powder, tuberculosis and bee-keeping, and turn the country into an exporter of bee products. The lack of interest of our beekeepers in the production of other beekeeping products

is caused by the low demand for these products. We think that in the near future, the mechanisms for establishing a favorable production and consumption environment for the country's breeding should be worked out, large-scale projects and activities that stimulate the activities of beekeeping farms should be implemented.

The "Beekeeping Center" operating under the Institute of Livestock Research and Research of the Ministry of Agriculture of Azerbaijan is a bright example of the joint work of science and production and contributes to the development of beekeeping in our republic. Increasing the number of such beekeeping enterprises would have ensured the development of this field on a scientific basis by having a positive impact on the development of beekeeping.

#### References:

1. Law of the Republic of Azerbaijan. "On beekeeping". February 2, 2009.
2. "Development Strategy of Agrarian Industry in the Republic of Azerbaijan for 2014–2020".
3. Sultanlı H. Q. "In the world of honey bees".– Baku, 2011.– 410 p.
4. Dmitrievich O. A. "The Encyclopedia of Enchanted Encyclopedia".– Moscow. 2014.– 272 p.
5. Humbatov Y. A. "Organization of beekeeping farms in Azerbaijan, improving the mechanism of economic management".– Baku. European publishing house.– 256 p.

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