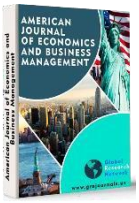

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Article

Analysis of The Competitive Environment: Examples, Methods, and Stages

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Abstract: In an increasingly dynamic market economy, analyzing the competitive environment is essential for enhancing the effectiveness of small business strategies and ensuring sustainable development. Small enterprises often operate under unique conditions shaped by local market structures, consumer influence, short product turnover cycles, and close proximity between production and consumption. This necessitates tailored tools for evaluating competitive dynamics and formulating strategic responses. Despite the acknowledged importance of competitive analysis, existing models often fail to capture the nuanced realities of local markets, particularly for small businesses lacking access to comprehensive statistical data. This study aims to develop a practical algorithm and methodological framework for assessing the competitive environment, defining local market boundaries, and constructing competitive maps to guide small business strategy. The research outlines a six-stage diagnostic process including market segmentation, substitutability analysis, market growth assessment, profitability evaluation, competition intensity metrics, and the formulation of strategic positioning through Herfindahl–Hirschman indices and competitive matrices. The proposed methodology integrates qualitative and quantitative tools including empirical observation, expert evaluations, and elasticity models within a unified framework specifically designed for application in fragmented or data-limited market contexts. The findings provide a robust basis for strategic decision-making by enabling firms to assess their relative positions, anticipate competitive pressures, and select appropriate tactics for growth, adaptation, or exit. The regular application of competitive mapping is recommended as a monitoring tool for dynamic market positioning and performance management.

Keywords: Competitiveness, Competitive Environment, Competitive Map, Innovation, Local Market, Competitive Position, Outsider

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1. Introduction

One of the essential tools for shaping a competitive environment in our economy is the objective assessment of its current state based on specific indices and coefficients. All researchers agree that competition—or more precisely, its intensity affects the innovation process in one way or another, acting as a key driver for businesses to develop innovations and various improvements in pursuit of additional income, the preservation of existing advantages, and the discovery and exploitation of new opportunities [1].

As noted by the President of the Republic, Shavkat Mirziyoyev, "In order to ensure a decent standard of living for our people, it is first and foremost necessary to build a strong economy and enhance the country's competitiveness on the international stage" [2].

The forms and intensity of competition depend on the type of local market, its level of saturation, and the quantity and nature of actions taken by competing firms.

When assessing the competitive environment of small businesses, we believe it is important to take into account a number of fundamental and distinctive features, including:

a. The strong influence of the consumer;
b. Individual consumers as the primary customer base;
c. Short turnover cycles of produced goods;
d. Production being located close to the point of consumption.

We consider it appropriate to incorporate these characteristics into any model designed to manage the competitive environment. Therefore, we propose conducting a comprehensive assessment of the competitive landscape within local markets.

However, the development of small businesses is also influenced by a range of specific factors, such as socio-demographic characteristics, natural and climatic conditions, resource availability, distribution of productive forces, and the geographic boundaries of the local market. In our view, it is advisable to analyze these factors in combination with inter-sectoral dynamics when assessing the competitive environment [3].

The geographic boundaries of a local market can be defined through the study of goods or product groups, based on principles such as comparability of consumer properties, substitutability in production and consumption, the potential for inter-product competition, and consumer perceptions regarding the equivalence of utility, usage conditions, availability, and pricing.

The classification of products into a specific product group is determined using two criteria of substitutability: **demand-side substitutability** and **supply-side substitutability**. In substitution theory, the "hypothetical monopolist" test is widely used: if a hypothetical monopolist cannot profitably raise the price of product X above the competitive level due to consumers switching to a competing product Y, then both X and Y belong to the same product market. The main criterion for demand-side substitutability is **cross-price elasticity of demand**, which measures the percentage change in sales volume of a given product in response to a percentage change in the price of another (similar) product. This concept is fundamental in classifying products as either substitutes or complements, and is instrumental in defining market boundaries between product groups that actually or potentially compete with one another [4].

In markets where demand and supply are unbalanced, calculations based on cross-price elasticity often lead to distorted outcomes. In practice, substitutability is commonly assessed using expert evaluations, consumer interviews, and consultations with marketing specialists [5].

Another important criterion is **functional substitutability**, which is determined by comparing the intended use of the product and its possible alternatives. The similarity in consumer properties of a product and its substitutes based on physical, technical, performance-related, and price characteristics—can also serve as an effective criterion for establishing substitutability.

In conditions of shortage in the local market, the degree of product substitutability tends to increase significantly, although only within the boundaries defined by the product's intended function.

In assessing substitutability from the production perspective, it is necessary to identify available production capacities that could be redirected toward manufacturing one of the products within the relevant product group, and to assess the technological feasibility of reallocating production facilities to switch output from one product type to another [6].

The consumer's ability to access goods given existing economic, technological, and administrative barriers plays a crucial role in defining the geographic boundaries of a local market. In this context, we believe that several conditions should be considered:

a. The availability of transport options for consumers to reach sellers;
b. Minimal transportation costs in the product's delivery;
c. Preservation of product quality and consumer attributes during transportation;
d. Absence of administrative restrictions on the import/export of goods within the territory in question;
e. Comparable price levels for specific product groups within the boundaries of the local market.

Moreover, geographic market boundaries may be variable, as they are influenced by the costs incurred by consumers in acquiring products. The development of market relations and interregional trade expands consumer access, which, in turn, may broaden the geographic scope of local markets [7].

To reliably identify and analyze the composition of sellers and buyers, it is necessary to identify all suppliers operating within a particular local product market. In addition, buyer groups for each specific seller should be defined. A group of buyers may be classified based on the following criterion: each buyer within the group should have the ability to purchase the product from any seller offering it within the relevant local market [8].

When evaluating the intensity of competition in a given local market, we believe it is essential to use data on market shares of producers, taking into account information from suppliers and adjusted with empirical observations. However, we note that data on production volumes broken down by enterprise are not fully adequate for calculating relative concentration coefficients or entropy indicators, and thus may not fully capture market concentration at the local level [9].

Therefore, when calculating such indicators, it is more appropriate to use data not only on production volumes but also on the quantity of goods supplied and sold within the respective local markets. Unfortunately, such data is not tracked by statistical agencies due to limitations in the current statistical reporting system. In the course of our research, we primarily dealt with generalized sales data expressed in financial terms, as well as import/export statistics categorized by product type and monetary value—but not by specific producers.

As a result, we propose tracking the market share of economic entities empirically, based on observation and survey data—that is, by collecting primary data. In our view, the appropriate metric for determining a firm's market share is the **frequency of occurrences** of products from various manufacturers, including foreign ones, within the specific local market under analysis.

2. Materials and Methods

In this context, we propose determining the market share of a particular small enterprise using the following formula:

$$C = \frac{N}{R} \times 100 \quad (1)$$

Where:

N – the number of retail outlets where the product was identified, categorized by manufacturer (units);

R – the total number of product occurrences (units).

A comprehensive assessment of the intensity of competition in a specific local market is only possible after a thorough, step-by-step diagnostic of the competitive environment.

At the **first stage**, it is necessary to compile a list of firms (a "competitive roster") operating in the local market and forming its competitive landscape. Following this, initial data should be collected for both the reference and base periods, and all monetary and financial indicators must be adjusted to comparable values.

At the **second stage**, we consider it advisable to determine the type of market using the expert method—specifically, whether it is a seller's market (where sellers hold more power and buyers must act more actively) or a buyer's market (where buyers have greater leverage and sellers must act more proactively) [10].

The **third stage** involves calculating indicators that reflect the current condition of the market. We propose evaluating the following characteristics:

a. **Market volume**, defined as the total resources of all firms operating in the market under analysis;
b. **Market growth rate**, which represents the annual growth rate of the analyzed market at constant prices.
c. **Market growth rate**, which represents the annual growth rate of the analyzed market at constant prices.

We suggest calculating the market growth rate (**Tm**) based on market volumes at the end of the analyzed period (**V′m**) and at the base period (**Vm**), as well as the duration of the period (**t**), using the following formula:

$$Tm = \frac{V_m' - V_m}{V_m} \cdot \frac{12}{t} + 1$$

It should be noted that the market growth rate, along with its upper and lower boundaries, typically ranges between 140% and 70% annually. Therefore:

If $T_m > 1.4$, the market is in a phase of rapid growth; If T_m lies between 1.4 and 0.7, the market is undergoing positional growth, stagnation, or decline; If $T_m < 0.7$, a market crisis is anticipated. Market profitability is defined as the ratio of total profit to its overall potential.

$$Rm = \frac{P_r}{V_m'} \cdot \frac{12}{t}$$

Market profitability (R_m) can be assessed based on retrospective financial data regarding the profits earned by competitors operating in the given market. In doing so, it is possible to estimate the assets and profits of competing firms. Under such circumstances, profitability can be calculated as follows:

Where:

Pr – profit earned by competitors during the analyzed period;

V′m – competitors' assets at the end of the analyzed period;

t – duration of the analyzed period, in months.

At the fourth stage, an assessment of the degree of market monopolization should be conducted. This assessment can be made with the understanding that the degree of monopolization is inversely proportional to the intensity of competition.

$$ИХХ = \sum_{i=1}^{n} x_i^2$$

It is also possible to calculate the Herfindahl–Hirschman Index (ИХХ):

Where:

x_i – market share of the i-th firm, in percentage terms;

n – total number of firms in the market.

The *И*ХХ represents the sum of the squares of the market shares of all entities operating within the local market. Its values can range from 0 (in the case of complete market decentralization) to **10,000** (in the case of absolute monopolization).

3. Results and Discussion

In our view, it is advisable to examine the relationship between the *И*ХХ and the market shares of a fixed number of firms under conditions where the total number of market participants is unrestricted or arbitrary [11].

The table illustrates the relationship between the Herfindahl–Hirschman Index (HHI) values and market concentration, indicating the minimum number of firms and the maximum allowable market share held by the top one to four firms. Higher HHI values signify increased market monopolization and reduced competitive intensity, see Table 1.

Table 1. The Relationship Between the Herfindahl–Hirschman Index (*И*ХХ) and the Market Shares of a Fixed Number of Firms.

Value *И*ХХ	Minimum Possible Number of Firms in the Market	Maximum Allowable Market Share of the Largest Firms, %			
		One	Two	Three	Four
500	20	22	31	39	44
1000	10	31	44	54	63
1800	6	42	60	72	85
3000	4	54	75	95	100
5000	2	70	100	100	100

Rubin Yu.B. Theory and Practice of Competition. — Moscow: Moscow State University of Economics, Statistics, and Informatics, 2004. — 200 p.

As can be seen from the table, a non-monopolized local market (with an *И*ХХ of up to 1000) implies the presence of at least 10 competing firms, with the share of the largest firm not exceeding 31%, the share of the two largest firms not exceeding 44%, the share of the three largest firms not exceeding 54%, and the share of the four largest firms not exceeding 63%.

At the fifth stage, the calculation of generalized characteristics of competitive intensity can be initiated. Competitive intensity in terms of market dynamics reflects the growth opportunities of a firm without encountering conflicts with competitors' interests. Competitive intensity based on market profitability characterizes the relationship between supply and demand in the local market; specifically, the higher the market profitability, the greater the demand exceeds supply, and the weaker the influence of competitors. Competitive intensity in terms of market share distribution indicates the strength of influence exerted by competitors holding equal market shares and likely employing similar strategies. The generalized indicator of competitive intensity represents the overall measure of the attractiveness of the analyzed market [12].

The competitive intensity indicators (Ut) are calculated based on the market growth rate. It can be assumed that if $Tm > 1.4$, then $Ut = 0$; if $0.7 < Tm < 1.4$, then $Ut = (1.4 - Tm) / 0.7$; and if $Tm = 0.7$, then $Ut = 1$. In this case, the competitive intensity indicator characterizes the sharpness of competition, with $Ut = 1$ indicating the maximum level of competition [13].

At the sixth and final stage, we propose constructing a competitive market map and identifying the typical strategic positions of firms within the market. The competitive market map involves classifying competitors according to their market positions and analyzing the distribution of market shares. This analysis allows for the determination of

a competitor's or the firm's own standing (e.g., leader, outsider) in a specific local market based on their positioning within individual product markets [14].

To develop the competitive map, firms' market shares and their rates of change are calculated, and the following matrix is completed:

The matrix classifies firms based on their initial market share and growth dynamics. It identifies 16 strategic positions, ranging from leaders with rapid improvement (cell 1) to outsiders with rapid deterioration (cell 16), aiding firms in determining their competitive stance and formulating targeted strategic responses in dynamic market conditions, see Table 2.

Table 2. Competitive Map of Firms' Market Shares.

	Classification Groups (as of the Beginning of the Period)			
By Market Share **By Market Share Growth Rate**	**I.Leader**	**II. Strong Competitive Position**	**III. Weak Competitive Position**	**IY. Outsider**
I. Rapid improvement of competitive position	1	5	9	13
II. Improvement of competitive position	2	6	10	14
III.Deterioration of competitive position	3	7	11	15
IY. Rapid deterioration of competitive position	4	8	12	16

Reference: Prosvetov, G.I. Mathematical Methods in Economics: Educational and Methodological Guide. Moscow: RDL Publishing.

Conclusions and Recommendations, in determining the boundaries of changes in indicators (market share and growth rate) for each group (leader, strong competitive position, weak competitive position, outsider), both statistical methods and expert-based assessments can be employed. Once the matrix is constructed, the potential strategies for firm development can be approximately outlined, as presented in the following table:

This table outlines competitive strategies based on a firm's market dominance. Leaders pursue offensive growth, stabilization, or aggressive rivalry. Firms with strong positions target niche markets or emulate leaders. Those with weak positions focus on cost control and short-term gains. Outsiders consider reorganization, downsizing, or exiting unprofitable markets, see Table 3.

Table 3. Possible development strategies for entrepreneurial structures based on their degree of dominance on the market competitive map.

Degree of Firm Dominance on the Competitive Market Map:	**Probable methods of competitive struggle**
Leader	• Continuation of the offensive: This strategy involves evaluating the adequacy of resources necessary to sustain innovation and intensify pressure on competitors. • Stabilization of positions: This strategy involves maintaining the achieved level of profitability, establishing entry barriers for potential competitors, improving service quality, balancing prices, and preserving market share. • Competition with rivals: This strategy involves launching uncompromising campaigns aimed at exerting pressure on competitors,

	attracting consumers and suppliers, discrediting competitors, and poaching their personnel. • Search for an untapped niche with weak competition • Adaptation to the chosen target market
Strong competitive position	• Creation of a perfect service • Imitation of the actions of the leader • Acquisition of smaller competitors • Creation of a distinctive image • Cost Reduction or Service Differentiation • Maintaining Existing Market Share and Profitability
Weak Competitive Position	• Reinvestment at the minimum sufficient level for short-term profits: extracting resources from shrinking business areas to redirect them into promising sectors • Radical reorganization of the firm: business repositioning, exploration of internal reserves, merging with a competitor, and reducing unprofitable assortment
Outsider	• Increase in prices when demand is inelastic • Comprehensive cost reduction • Asset liquidation, workforce reduction, and service downsizing • Exit from business

We believe it is important to emphasize that the competitive map should be constructed regularly. Changes in the positions of firms on the map should serve as a signal for conducting a more thorough analysis and identifying the causes of such changes [15].

4. Conclusion

In conclusion, the study presents a comprehensive and structured methodology for analyzing the competitive environment of local markets, particularly for small enterprises. By integrating empirical observation, elasticity-based market definitions, and tools such as the Herfindahl–Hirschman Index and competitive mapping, the research effectively identifies strategic positions and intensity levels of competition. The findings highlight that accurate assessment of market structure, substitutability, and firm dynamics is critical for informed decision-making and strategy development. The proposed six-stage algorithm offers practical insights for business positioning and market behavior analysis. This approach provides a valuable framework for understanding competitive interactions and anticipating market shifts. The implications of the study suggest that continuous monitoring and recalibration of competitive maps are necessary to sustain strategic agility in dynamic environments. Further research should explore sector-specific adaptations of the methodology, the impact of digital transformation on competitive behavior, and the integration of real-time data analytics to enhance forecasting and strategic planning in competitive market systems.

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