RNI – MPENG/2011/46472 **ISSN-2249-9512**

Journal of Management Value & Ethics

(A quarterly Publication of GMA)

GWALIOR MANAGEMENT ACADEMY
C-17 Kailash Nager, Near New High Court, Gwalior-M.P. 474006 (INDIA)
Phone No. 0751-2230233,9425121133

C O N T E N T S

Legal Instructions :

- The GMA is publishing a Journal of Management Value & Ethics from times a year in January, April, July, and October.
- No part of this publication may be reproduced or copied in any form by any means without prior written permission.
- The views expressed in this publication are purely personal judgments of the authors and do not reflect the views of GMA.
- All efforts are made to ensure that the published information's is correct. GMA is not responsible for any errors caused due to overright or otherwise.
- All legal disputes jurisdiction will be Gwalior.

Publisher/Printer/Owner/Editor-in-Chief :
Dr. Prabhakar Singh Bhadouria,

Gwalior Management Academy
Regd. Office: C-17 Kailash Nagar Near New High Court Gwalior M.P. INDIA-474006,
e-mail : jmveindia@yahoo.com, www.jmveindia.com

Annual subscription Rs.2000.00 (India) $ 170 & euro 150 (foreign Airmail)

Printed at:
Sai offset Throat palace, Lashkar Gwalior (M.P.)

Graphics & Designed:
Shivani Computer Graphics, Gwalior (M.P.)
Mob. 9826480017

Message

Editor in Chief / Managing Editor

Dear Academicians & Research Scholars,

Wishing you a very very Happy New Year 2026…

Dear Authors, as you know thatour referred an international research journal listed with many research organizations like, Global Impact Factor Australia, Google scholar, LinkedIn and also approved in Higher Education Supreme Authority Uzbekistan. We are also member of PILA(Crossref) USA. The motive of our research journal is to publish worthy and original research papers after double blind peer review process. There is no doubt that today we have given international platform to our journal where everyone, who belongs to management, knows very well. During the last nine years of our research journey, you can see that there are so many research papers, case studies, book reviews coming from across the world, in the field of management. Many academicians, research scholars & students have approached from different countries like USA, Thailand, Indonesia, Saudi Arabia, Iran, Spain, Nigeria, Kenya, Nepal, Pakistan, Sri Lanka, Uzbekistan to publish their research papers in our esteemed International research Journal. We have considered most of them to publish after peer blind review process. We have also published many research papers from different management institutes of our country. They are sending regularly for publication in the upcoming issues. In addition to, it, there are many academicians, research scholars and institutes subscribing for our journal for reading by students and faculties. There are so many academicians who are approaching for being associated with our editorial & advisory board or as a review expert. We have selected some of them from foreign countries like USA, Nigeria, Uzbekistan and Sri Lanka, Nepal. The standard of our all research papers like empirical, conceptual, book review and case study is increasing the popularity of this Journal day by day. The most inspirable things of our journal are Motivational quotations which are appreciated by readers. Our renowned advisory board & editorial board membersgiving me advise to maintain quality of the journal and its become a real mile stone of our success.

Research is a need of today's life, without research nothing is possible in the universe. Because, research bringing revolutionary change in the life. Research based study always support academicians & scholars to upgrade their innovative skill and academic profile as per UGC and AICTE norms. I would also like to request those, who are interested to get their research papers published in the field of Retail, Tourism, Hospitality, Event Management, Import and export, HRM, Finance, Marketing, Advertising, Accounting, Economics, Aviation, and IT etc. to send their research papers through email.

Dr. P. S. Bhadouria

THE RELEVANCE OF STRATEGIC MANAGEMENT IN BUSINESS ORGANIZATIONS

Shramistha Srivastava[1], Aditi Mishra[2], Khushboo Joshi[3], Avantika Tripathi[4]

ABSTRACT

This paper presents strategic management as an important business management concept. It defines strategy and explains the key concepts in strategic management; strategic vision, objectives, strategy formulation, strategy implementation, evaluation and initiating corrective action. The research also focuses on the corporate governance aspect of strategic management; role of the board of directors in crafting and executing strategy. The different levels of pitching strategy are also discussed in this paper; corporate, business, functional and operational. All these concepts are examined with a view to highlight their importance in the effective and efficient management of business organizations. In an operating environment that is dynamic and highly competitive, business organizations need to appreciate the importance of crafting and effectively executing strategies that can help them create sustainable competitive advantage.

***Key Words**: Strategic Management, Vision, Objectives, Strategy Formulation, Strategy Implementation, Evaluation, Corporate Strategy, Business Strategy, Functional Strategy, Operational Strategy, Corporate Governance.*

1.0 Introduction to Strategic Management

Thompson, Strickland and Gamble (2007) define strategy as "…management's action plans for running the business and conduction operations." They further assert that "a company's strategy consists of the competitive moves and business approaches that managers are employing to grow the business, attract and please customers, compete successfully, conduct operations, and achieve the targeted levels of organizational performance." Strategic management therefore entails the environmental scanning process, strategy formulation, strategy implementation and monitoring, evaluation and review of the implementation process to ensure effective and efficient accomplishment of organizational long term objectives. Eden and Ackerman (1998) perceive strategy as 'a coherent set of individual discrete actions is support of a system of goals, and which are supported as a portfolio by a self-sustaining critical mass, or momentum of opinion in an organization.' Ackerman's "coherent set of individual discrete actions" may be equated to Thompson, Strickland and Gamble's "competitive moves and business approaches". The other common element between these authors in their definition of strategy is that its focus is sustainable achievement of targeted levels of organizational performance. Mint berg (1998) as quoted by Beckman and Rosenfield (2008) captures the bulk of the key issues that organizations need to focus on in crafting and executing strategy: "Strategy depends on basic building blocks, which are used in attack, defense and maneuver. Strategy making relies on finding and executing new combinations of these blocks. In every age, technology and social organization limit the combinations. After some time, these limits seem inevitable and hence natural.

[1] Assistant Professor, IMCE, Shri Ramswaroop Memorial University, Barabanki, U.P.
[2] Assistant Professor, IMCE, Shri Ramswaroop Memorial University, Barabanki, U.P.
[3] Assistant Professor, IMCE, Shri Ramswaroop Memorial University, Barabanki, U.P.
[4] Assistant Professor, IMCE, Shri Ramswaroop Memorial University, Barabanki, U.P.

Strategists cease to question received wisdom and confine themselves to variations on acceptedthemes. It is therefore left to the great commanders, such as Napoleon, to innovate strategically by recognizing and bringing about new combinations." Kim and Mauborgne (2005) who concur with Mintzberg assert that companies need to continuously seek untapped market spaces outside the traditional boundaries of their industry, in which to compete and outperform those that stay within those bounds. What strategic thinking therefore calls for is questioning the status quo and innovatively developing new product offerings, new ways of delivering those offerings to existing and new markets and creating sustainable competitive advantage in the process. The theme of creating sustainable competitive advantage is clearly articulated by Ohmae (1982) who postulates that: "What business strategy is all about – what distinguishes it from all other kinds of business planning – is, in a word, competitive advantage. Without competitors there would be no need for strategy, for the sole purpose of strategic planning is to enable a company to gain, as efficient as possible, a sustainable edge over its competitors. Corporate strategy thus implies an attempt to alter a company's strength relative to that of its competitors in the most efficient way."

2.0 The Importance of Strategy in Business Organizations

Thompson, Strickland and Gamble (2007) identify two primary reasons why strategy is important in business organization. The first important aspect about strategy is that management needs to proactively craft how the organization's business will be conducted. They further assert that a clear and well thought out strategy is management's prescription for doing business, its road map to competitive advantage, its game plan for pleasing customers and improving financial performance. Secondly, they say that a strategy-focused enterprise is more likely to be a strong bottom line performer that a company whose management views strategy as secondary and puts its priorities elsewhere. Effective strategy formulation and execution have a significantly positive impact on revenue growth, earnings, and return on investment. Dyson etal (2007) prefer terming the strategic management process a 'strategic development process.' They assert that the strategic development process embraces the management process that inform, shape and support the strategic decisions confronting an organization. Their inclination towards the term strategic development process is premised on three key issues which they highlight. Firstly these authors argue that strategy formulation and implementation are inseparable business activities in which organizations engage on a continuous basis; hence the idea of ongoing development is central to their thinking. Their second reason for their approach is that the widely used term 'strategic planning' has become debased by association with the creation of deterministic, one-shot 5-and 10-year plans, which suggests rigidity in thinking about the future. Their third argument is that 'strategic management' is too loose a term to describe the emphasis that has to be placed upon reflective engagement and analytical questioning that characterizes their recommended approach. Despite their slight digression from the conventional approach to strategic management, they share a common view with Thompson, Strickland and Gamble (2007) who assert that crafting and executing strategy are core management functions; excellent execution of an excellent strategy is the best test of managerial experience – and the most reliable recipe for turning companies into standout performers. It is the latter authors' contention that how well an organization's management team charts the company's direction, develops competitively effective strategic moves and business approaches, and pursues what needs to be done internally to produce good day-in, day-out strategy execution and operating excellence, determines an organization's ultimate success or failure.

3.0 The Strategic Management Process

The strategic management process can be summarized into two broad concepts, that is, strategy making and strategy executing. According to Thompson, Strickland and Gamble (2007), the strategy making, strategy executing process consists of five interrelated and integrated phases:

1. Developing a strategic vision of where the company needs to head and what its future product/market/customer technology focus should be.
2. Setting objectives and using them as yardsticks for measuring company's performance and progress.
3. Crafting a strategy to achieve the objectives and move the company along the strategic course that management has charted.
4. Implementing and executing the chosen strategy efficiently and effectively.

These phases are briefly explained in the sections that follow.

3.1 **Developing and Communicating a Strategic Vision** Parikh and Neubauer (1993), as quoted by Meadows and O'Brien (2007) define vision as 'an image of a desired future state of an organization.' Meadows and O'Brien (2007) also allude to Kouzes and Posner (1996) who describe four attributes of vision: ideality, uniqueness, future orientation and imagery. According to Thompson, Strickland and Gamble (2007), the defining characteristic of a well conceived strategic vision is what it says about the company's future strategic course – "the direction we are headed and what our future product/market/customer/technology focus will be." They further distinguish between a strategic vision and a mission statement wherein they assert that 'a strategic vision portrays a company's future business scope ("where we are going") whereas a company's mission typically describes its present business purpose ("who we are, and what we do, and why we are here"). It is important that organizations develop strategic visions because they set the critical direction in which the organization is supposed to go and how resources are effectively and efficiently allocated in pursuit of that set direction. This important aspect of visioning is captured by Walker (1996) who intimates that a common motivation for engaging in a visioning process is an awareness of the dissatisfaction with the way things currently are, or the direction in which things are heading. Over and above developing the strategic vision, it is also important to clearly communicate it to the rest of the members of the organization. Thompson, Strickland and Gamble (2007) assert that an effectively communicated vision is a valuable management tool for enlisting the commitment of company personnel to actions that get the company moving in the intended direction. They further reinforce the importance of communicating the strategic vision effectively by emphasizing that strategic visions become real only when the vision is imprinted in the minds of organization members and then translated into hard objectives and strategies.

3.2 Setting Objectives According to http://worldacademyonline.com, objectives are the end results of planned activity, and they state what is to be accomplished by when and should be quantified if possible. The effective and efficient achievement of corporate objectives should result in the fulfillment of an organization's mission. Thompson, Strickland and Gamble (2007) define objectives as an organization's performance targets – the results and outcomes management wants to achieve. These objectives function as standards against which organizational performance may be measured. http://worldacademyonline.com highlights some of the areas in which organizations may establish their objectives: Profitability (net profits)•

Efficiency (low costs, etc.);• Growth (increase in total assets, sales, etc.);• Shareholder wealth (dividends plus stock price appreciation);• Utilization of resources (ROE or ROI);• Reputation (being considered a "top" firm);• Contributions to employees (employment security, wages);• Contributions to society (taxes paid, participation in charities, providing a needed• product or service); Market leadership (market share);• Technological leadership (innovations, creativity);• Survival (avoiding bankruptcy); and/or• Personal needs of top management (using the firm for personal purposes, such as• providing jobs for relatives). Phatak, Bhagat and Kashlak (2009) refer to Sumantra Ghoshal's article "Global Strategy: An Organizing Framework," and allude to his framework that explains the broad categories for setting organizational objectives in a globally competitive environment, and the sources for developing an international or global competitive advantage for the organization. The three broad categories of objectives that a firm competing in a global market can pursue are: 1) achieving efficiency, 2) managing risks, and 3) innovating, learning, and adapting. Thompson, Strickland and Gamble (2007) contend that there are two broad categories of objectives that any given organization has to set; financial objectives and strategic objectives. The financial objectives relate to the financial performance targets management has established for the organization to achieve. On the other hand strategic objectives relate to target outcomes that indicate a company is strengthening its market standing, competitive vitality, and future business prospects. However, it can be observed that in pursuing both strategic and financial objectives, an organization has to strive to achieve efficiency, manage risks and in the process, innovate, learn and adapt to changes within the operating environment. Hence both categories of objectives are very important. Thompson, Strickland and Gamble (2007), intimate that the managerial purpose of setting objectives is to convert strategic vision into specific performance targets – results and outcomes the company's management wants to achieve. They further assert that well-stated objectives are quantifiable or measurable, contain a deadline for achievement, and reflect managerial commitment to achieve particular results and outcomes. This summarizes the generally accepted "SMART" criteria for setting objectives, which means that objectives must be specific, measurable, attainable/achievable, realistic and time-bound/time-framed.

3.3 Crafting a Strategy According to Thompson, Strickland and Gamble (2007), the task of crafting a strategy entails answering a series of 'hows': how to grow the business,• how to please the customers,• how to outcompete rivals,• how to respond to changing market conditions,• how to manage each functional piece of the business and develop needed competencies and• capabilities and, how to achieve strategic and financial objectives• Baumol and Blackman (1991) postulate that in crafting strategy, there is need to proactively search for opportunities to do new things or to do existing things in new or better ways. This process entails developing and choosing among various strategic alternatives. In developing and weighing these strategic alternatives, organizations need to be conscious of the environment within which they operate and as such a process of scanning the environmental both internally and externally should be undertaken. The scanning process may take different approaches or use different models but largely involves both PESTLE and SWOT analyses for an organization's management to have a clear understanding of both internal and external environments. Under PESTLE analysis, organizations seek to understand the Political, Economic, Socio-cultural, Technological, Legal and Environmental factors that affect their business operations. The SWOT analysis also assists organizations to appreciate their internal Strengths and Weaknesses and the Opportunities and Threats that characterize the external environment. Only after understanding both the internal and external environments can organizations effectively craft strategies that can guarantee them competitive advantage in their respective spheres of influence (markets). According to http://worldacademyonline.com/article/18/1/strategy_development_process.html, an

organizational strategy must be developed for each functional area within its mission statement. The resulting strategies must contain a clear purpose, measurable expected outcomes, fall-back plans in the event the primary strategy cannot be implemented, and a cost and benefit analysis. Mitchell (2010) asserts that in strategy formulation, organizations attempt to modify the current objectives and strategies in ways that make the organization more successful, creating sustainable competitive advantage in the process. He further states that a good strategy should be effective in solving the stated problem(s), practical (can be implemented in this situation, with the resources available), feasible within a reasonable time frame, cost-effective, not overly disruptive, and acceptable to key "stakeholders" in the organization. An important aspect to consider at this point is the strategic fit between an organization's resources plus competencies with opportunities, as well as the fit between risks and expectations. According to Mitchell (2010) there are four primary steps in this phase: Reviewing the current key objectives and strategies of the organization, which usually• would have been identified and evaluated as part of the diagnosis Identifying a rich range of strategic alternatives to address the three levels of strategy• formulation, including but not limited to dealing with the critical issues Doing a balanced evaluation of advantages and disadvantages of the alternatives relative• to their feasibility plus expected effects on the issues and contributions to the success of the organization Deciding on the alternatives that should be implemented or recommended•According to Thompson, Strickland and Gable (2007), the strategy making task involves four distinct types or levels of strategy, each of which involves different facets of the company's overall strategy: 1. Corporate Strategy consists of the kind of initiatives the company uses to establish business operations in different industries, the approaches corporate executives pursue to boost the combined performance of the set of businesses the company has diversified into, and the means of capturing cross-cutting business synergies and turning them into competitive advantage. Senior corporate executives normally have lead responsibility for devising corporate strategy. 2. Business Strategy concerns the actions and the approaches crafted to produce successful performance in one specific line of business. The key focus is crafting responses to market circumstances and initiating actions to strengthen market position, build competitive advantage, and develop strong competitive capabilities. This level of strategy is for the manager in charge of the business. 3.Functional-area Strategies concern the actions, approaches, and practices to be employed in managing particular functions or business processes or key activities within a business. This level represents strategies for functional departments within an organization such as marketing, finance, human resource management, and purchasing. The heads of functions are entrusted with the lead responsibility of crating functional strategies for their respective functional departments or sections. 4.Operating Strategies concern the relatively narrow strategic initiatives and approaches for managing key operating units (plants, distribution centers, geographic units and specific operating activities with strategic significance (advertising campaigns, the management of specific brands, supply chain-related activities and Web site sales and operations. These four levels of strategy largely relate to large corporate organizations that have more than one strategic business unit. In single-business entities, the corporate and business levels strategies are usually collapsed into one level – the business strategy, leaving these type of organizations with only three levels of strategy; business, functional and operational. Beckman and Rosen field (2008) emphasize the importance of consistency or strategic fit not only in crafting strategy but also in implementation. They allude to Nath and Sudharshan (1994) who contend that there are three critical elements that need alignment in strategy development/crafting; 1) internal alignment to the firm where the implementation of strategy focuses on obtaining fit between the strategy and the structure of the organization, 2) external to the firm, where the strategy formulation process seeks a fit between the firm's strategy and the environment in which it

operates, and 3) internal-external fit, where the formulation and implementation of strategy are considered to be interactive elements.

3.4 Implementing and Executing the Strategy The fourth phase of the strategy-making, strategy-executing process is the implementation and execution stage. Barrows (2010) looks at strategy execution as a step-by-step process. In his article on "What is Strategy Execution" on http://www.amanet.org/training/articles/What-Is-StrategyExecution.aspx, Barrows summarizes a 10-step process, postulating that these steps provide both high level direction and the intricate detail for guaranteeing strategy execution success:

Step 1: **Visualize the strategy-**One of the most pressing challenges in all of strategy simply understands what a strategy is. An effective way to improve this understanding is to visualize the strategy via an illustration that shows both the important elements of the strategy and how each relates to one another. Frameworks such as the Strategy Map by Kaplan and Norton, the Activity Map by Michael Porter, or the Success Map by Andy Neely help in this regard.

Step 2: **Measure the strategy** Key elements of the visualized strategy should be assigned an easily understood performance measure. The full set of strategic performance measures can be organized into a dashboard, a Balanced Scorecard, or some other framework so the reader can determine that progress is being made toward completion of the strategy.

Step 3: **Report progress** In the same way that a budget is reviewed monthly to ensure financial commitments are being kept, the strategy should be reviewed regularly, but with more of an eye toward determining if the strategy is producing results, versus controlling performance.

Step 4: **Make decisions** Strategy execution is much like sailing a boat toward a planned destination. A defined course and a full complement of navigational charts will never eliminate the need to remain vigilant, to assess the environment, and to make corrections as conditions change. As part of the regular reporting process leaders must make ongoing strategic decisions to keep the strategy current and on course.

Step 5: **Identify strategy projects** Organizations may have scores, if not hundreds, of projects ongoing at any point, but they rarely have a firm grasp on the type and range of these projects. The first step in improving project-oriented strategy execution is to capture and organize all projects— strategy projects in particular—that are underway in throughout an organization.

Step 6: **Align strategy projects**. Once projects are captured they must then be aligned to the strategies or goals for the organization. This step entails comparing each project, either proposed or ongoing, to the strategic goals to determine if alignment exists. Only those projects that directly impact the strategy should be resourced and continued.

Step 7: **Manage projects**. Organizations must develop a capability in project management if they are to execute strategy effectively. In some settings, projects receive very little management. In others, projects persist well beyond their scheduled completion. The full complement of projects in any organization should be coordinated and controlled by a central project office or officer with the responsibility for monitoring both progress and performance. Step 8: Communicate strategy. It is difficult to execute strategy when the strategy itself isn't well understood, or performance relative to it is not communicated. Leaders must communicate their visualized strategy to the workforce in a way that will help them understand not only what needs to be done, but why.

Step 9: **Align individual roles**. Employees want to know they are making a meaningful contribution to their organization's success. It's up to senior leaders to ensure that employees at all levels can articulate and evaluate their personal roles toward achievement of specific strategic goals. This is perhaps one of the most critical aspects of the execution process.

Step 10: **Reward performance**. In strategy execution, as in any other area of management, what gets measured gets done. Taking this one step further, what get measured and rewarded gets done faster. After explaining the strategy and aligning the workforce to it, senior manager's institute According to Thompson, Strickland and Gamble (2007), managing the strategy execution process includes the following principal aspects: Staffing the organization with the needed skills and expertise, consciously building and• strengthening strategy-supportive competencies and competitive capabilities, and organizing the work effort. Allocating ample resources to these activities critical to strategic success.• Ensuring that policies and procedures facilitate rather than impede effective execution.• Using best practices to perform core business activities and pushing for continuous• improvement. Organizational units have to periodically reassess how things are being done and diligently pursue useful changes and improvements. Install information and operating systems that enable company personnel to better carry out• their strategic roles day in and day out. Motivating people to pursue the target objectives energetically and, if need be, modify their• duties and job behavior to better fit the requirements of successful strategy execution. Tying rewards and incentives directly to the achievement of performance of objectives and• good strategy execution. Creating a company culture and work climate conducive to successful strategy execution.• Exerting the internal leadership needed to drive implementation forward and keep improving• on how the strategy is being executed. When stumbling blocks or weaknesses are encountered, management has to see that they are addressed and rectified in timely and effective fashion.

3.5 Evaluating Performance and Initiating the Corrective Adjustments According to Thompson, Strickland and Gamble (2007), monitoring new external developments, evaluating the company's progress, and making corrective adjustments – is the trigger point for deciding whether to continue or change the company's vision, objectives, strategy, or strategy execution methods. Tapinos (2005) highlights two important reasons why organizations need to put performance measures in place; to provide a signal that something is wrong and corrective action is needed and, to provide information that facilitates a review of the strategy execution process. Dyson etal (2007) concur and also intimate that performance measurement is an important component of the feedback path that enables management to learn about the actual success or failure of their strategic initiatives when they compare them with the desired organizational direction they want to head towards. Thompson, Strickland and Gamble (2007) consider two possible scenarios in the strategy evaluation process. Firstly, an organization's direction and strategy may be aligned to industry and competitive conditions, and the performance targets being met. In this scenario, the organization's management can possibly decide to stay on course, refining the strategic plan and continuing with efforts to improve the strategy execution process. Secondly, an organization may experience changes within the environment that disrupt the efficient and effective achievement of its set objectives. In this case, the organization may need to revisit the appropriateness of its direction and strategy. If a company that persistently falls short of its performance targets or loses its market position, for example, there is need to probe the possible causes; poorly formulated strategy, poor strategy execution or both. An organization has to periodically evaluate the appropriateness of its strategic vision, direction, objectives and strategy and these can be modified as and when external and/or internal conditions necessitate. 4.0 Corporate Governance; The Role of the Board of Directors in Strategic Management Thompson, Strickland and

Gamble (2007) assert that while top management take the lead responsibility in crafting and executing the organization's strategy, the board of directors have a duty to exercise strong oversight and ensure that the five phases of the strategy crafting and execution are undertaken effectively and efficiently to benefit both shareholders and various other stakeholders. The board not only ensures that management actions are designed to achieve organizational objectives but also aligned to the interest of stakeholders. In carrying out its mandate, the board of directors has four key functions to undertake:- 1. Be inquiring critics and oversee the company's direction, strategy, and business approaches. 2. Evaluate the caliber of senior executives' strategy-making and strategy-executing skills. 3. Institute a compensation plan for top executives that reward them for actions and results that serve stakeholder interests, and most especially those of shareholders. 4. Oversee the company's financial accounting and financial reporting practices. According to http://worldacademyonline.com the Board of Directors in an organization has three distinct strategic management responsibilities; 1) Monitoring; through its committees, a board can keep abreast of developments in both the organization's internal and external environments. The board may therefore bring to management`s attention certain developments that management might have overlooked. This is the barest minimum that a board should undertake as a task in ensuring effective and efficient strategy formulation and execution. This particular task is more or less the same as what Thompson, Strickland and Gamble (2007) refer to as the duty to 'Be inquiring critics and oversee the company's direction, strategy, and business approaches.' This monitoring function also covers oversight over the organization's financial accounting and reporting practices, which the latter authors consider as the fourth important obligation for the board f directors. 2) Evaluating and Influencing; a board can examine management`s proposals, decisions, and actions; agree or disagree with them; give advice and offer suggestions; and outline alternatives. More active boards do so in addition to monitoring management`s activities. This task identifies with what Thompson, Strickland and Gamble (2007) have termed 'Evaluate the caliber of senior executives' strategy-making and strategy-executing skills.' 3) Initiate and Determine: A board can delineate a corporation`s mission and specify strategic options to its management. Only those boards of directors that take a very active role undertake this task in addition to monitoring and, evaluating and influencing. From a corporate governance perspective, the board of directors has a critical role of ensuring that management's plans and actions in crafting and executing strategy are effective and efficient in meeting stakeholder and more importantly shareholder expectations.

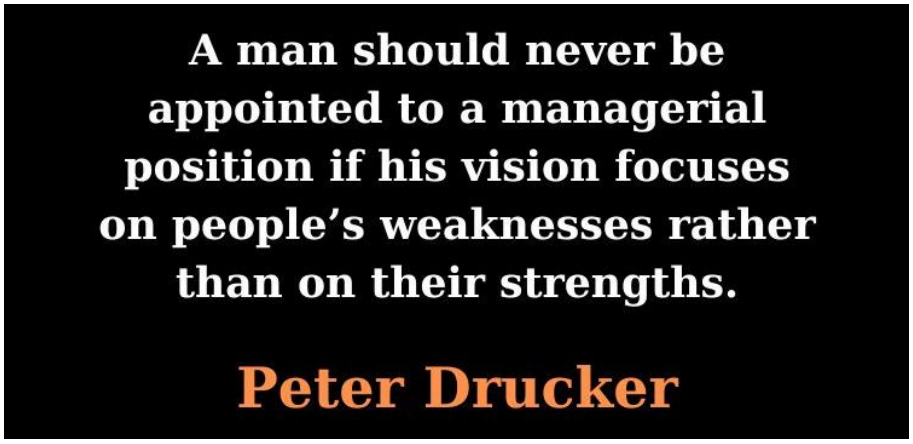
Conclusion

The importance of strategic management in running business organizations cannot be overemphasized. Developing a strategic vision which sets critical direction and guides resource allocation within the organization is key. Crafting strategy, effective implementation, monitoring, evaluating performance and developing corrective interventions where necessary, are some of the critical aspects that can assist organizations in creating and maintaining sustainable competitive advantage. The role of the board of directors in the crafting and execution of strategy is also a very important component of corporate governance. Organizational boards and management teams therefore need to give strategic management in all its facets the attention it deserves for ensuring superior performance in their respective industries.

References

- *Saunders M. and Lewis P. (2012, pages 201-216): "Doing Research in Business & Management – An Essential Guide to Planning Your Project".*

- *Saunders M., Lewis P. and Thornhill A. 2009, Research Methods for Business Students. 5th Edition, Essex: Pearson Education Limited*
- *Thompson Jr., A., Strickland III, A. J. and Gamble J. E. 2007, Crafting & Executing Strategy. 15th Edition, New York: McGraw-Hill Irwin*
- *O'Brien F. A. and Dyson R. G.2007, Supporting Strategy, Framework, Methods and Models.*
- *West Sussex: John Wiley & Sons Limited 5. Gravetter F. J. and Forzano L. B.2009, Research Methods for the Behavioral Sciences. 3rd Edition, California: Wadsworth*
- *Creswell J. W. 2009, Research Design. 3rd Edition, California: Sage Publications.*
- *Beckman S. L. and Rosenfielf D. B. 2008, Operations Strategy: Competing in the 21st Century, New York: McGraw-Hill Irwin.*
- *Phatak A. V., Bhagat R. S. and Kashlak R. J. 2009,International Management. 2nd Edition, New York: McGraw-Hill Irwin. 9. Rouse, W. B.2001,*
- *9 John Wiley & Sons, Inc. 10. Kim, W. C., and Mauborgne, R.*
- *"Blue Ocean Strategy: From Theory to Practice." California Management Review 47, No. 3 (Spring 2005), pp. 105-121. 11. Mintzberg, H., Ahlstrand, B., and Lampel,*
- *J. Strategy Safari: A Guided Tour through the Wilds of Strategic Management. New York: The Press, 1998.*
- *Harrison, E. Frank (1999). The Managerial Decision-Making Process (5th Ed.). Boston: Houghton Mifflin.*
- *McCall, Morgan W., Jr., & Kaplan, Robert K. (1990). Whatever it takes: The realities of managerial decision making (2nd Ed.). Englewood Cliffs, NJ: Prentice-Hall.*
- *Porter, Michael E. (1980). Competitive Strategy: Techniques for analyzing industries and competitors. New York: Free Press.*
- *Porter, Michael E. (1985). Competitive advantage: Creating and sustaining superior performance. New York: Free Press.*



ADVANTAGES OF OUTSOURCING SERVICES IN THE DIGITAL ECONOMY

Mirkhanov Mirfoziljon Olimjon oglu[1]

ABSTRACT

This article discusses the advantages and effective aspects of improving outsourcing services in the development of the service sector in the digital economy. Today, opportunities are revealed for improving outsourcing services in the field of digital technologies, increasing the efficiency of production processes and business systems of enterprises and organizations, as well as simplifying the work of enterprises and organizations, reducing costs and increasing their competitiveness.

Keywords- *Outsourcing Activities, Public Sector, Outsourcing Services, Advanced Technologies, Cost Reduction, Increasing Competitiveness.*

I. INTRODUCTION

Legal frameworks are being created for outsourcing activities in the public sector in Uzbekistan. Based on the fact that the main task is to improve the activities of all links of the education and upbringing system in accordance with modern requirements, a number of advantages of using outsourcing in the public sector are demonstrated in this and other areas.

The fact that outsourcing services provide a number of advantages for enterprises and organizations in the public sector (for example, in terms of human resources and productivity) indicates the need for this service. If a few years ago the “outsourcing” mechanism was used only in the private sector, today the effective use of “outsourcing” in the provision of social services is being established in budgetary organizations as well.

Outsourcing is the transfer of one or another function of an organization to external performers specializing in carrying out this activity. In other words, outsourcing refers to the total volume of purchases of goods, works, and services by the public sector from the non-public sector.

II. LITERATURE REVIEW

When studying outsourcing services, first of all, it is necessary to understand the product of labor as a service. The main definition of this product is the satisfaction of specific human requirements. In other words, a service is an activity aimed at satisfying the needs and requirements of people.

In the dictionary of the Russian scientist V.I. Dal, the concept of service is interpreted as follows: To provide service, help, favor, support, to please, to fulfill a desire. However, the interpretations given in these dictionaries do not fully reflect the essence of the concept of “service”.

The American economist F. Kotler, in his book “Fundamentals of Marketing”, stated that “services are actions taken to satisfy one’s own interests, to obtain a certain profit in the process of selling an object,” and

[1] Independent Researcher of the Samarkand Institute of Economics and Service. Uzbekistan.

continued his opinion, believing that “services in production may or may not be associated with tangible goods.”

Western economists K.R. McConnell, S.L. Brew defined services as follows: “services are invisible, but for which the consumer, firm or its representative is always ready to give something more valuable”.

Reizberg, Lozovsky, Starodubtseva defined outsourcing in the modern economic dictionary as “...transferring traditional non-core functions of the organization... to external performers...”

Researcher Ivlev (2021) defines outsourcing as follows: “... this is an organizational decision that optimizes the configuration of a business system based on the parameters “quality-cost-ownership”; “... outsourcing is borrowing from this side”. This scientist put forward a unique approach in his definition, presenting services as a loan.

III. RESEARCH METHODOLOGY

This scientific article used methods such as the logical approach to the theory of knowledge, induction and deduction, comparative and factor analysis, time and space, comparison, and monographic presentation.

IV. ANALYSIS AND RESULTS

Today, the importance of advanced technologies and innovations in the development of the economy around the world is increasing. These digital technologies are becoming increasingly important in increasing the efficiency of production processes and business systems. As the latest technologies penetrate all spheres and sectors of human activity, they are having an impact on changing traditional approaches and working methods.

In the development of the global economy, the widespread introduction of digital technologies in all aspects of state and public administration, socio-economic systems, and social life expands the possibilities of increasing efficiency, social development, and improving the well-being of the population. The digital economy is not just a type of activity, it is business, systematic and developed industry, quality education, and services. If in a regular economy, material goods are considered the main resource, in a digital economy, it is information and data that are processed and transmitted. After analyzing them, solutions are developed for their correct and effective management. To date, digital technologies are actively used in all areas of our life. This contributes to the rapid development of the economy, banking, service sectors, as well as the education system and other processes.

In the digital economy, the organization of outsourcing services is becoming increasingly important for enterprises. Thanks to modern technologies, rapid information exchange and online platforms, outsourcing services are becoming more convenient, economical and effective.

One of the noteworthy aspects is that in the digital economy, outsourcing services have many useful and significant aspects for the enterprise, as well as a number of advantages. These are:

1. Quick access to global specialist resources

Digital infrastructure makes it easier to cooperate with experienced specialists in any country. This increases the quality of service and solves the problem of qualified personnel.

2. Cost reduction using technological solutions

With the help of online platforms (cloud services, automated programs), services are provided remotely, which significantly reduces infrastructure costs.

3. Process automation and rapid execution

Outsourcing companies often use advanced technologies (AI, RPA, Big Data). This helps to perform tasks quickly and accurately, using less human input.

4. Flexibility and rapid modernization

The digital economy is changing very quickly. Through outsourcing, an enterprise uses modern technologies through service organizations, without spending time and resources on updating its internal systems.

5. Data analysis and digital monitoring capabilities

Many outsourcing services provide real-time analysis of the results of their activities. This greatly helps the enterprise in accurately assessing its activities and making decisions.

6. Having innovative approaches and creative solutions

Outsourcing companies working in the field of digital services monitor new technologies and allow for the rapid implementation of innovative ideas.

7. Strengthening information security through external services.

Through IT security outsourcing, enterprises keep their information base under professional protection. This is an important factor in the face of digital threats.

Summarizing the above thoughts and considerations, we found it appropriate to focus on outsourcing services.

Outsourcing services are when a company or organization transfers some of its functions (for example, IT, accounting, customer service, marketing, cleaning, logistics, etc.) to external specialists or organizations. This service is widely used in various industries and is carried out for the following main purposes:

The advantages of improving outsourcing services in the digital economy are:

1. Cost reduction: Outsourcing helps to significantly reduce costs, especially in developing countries, where labor is cheaper. Digital technologies facilitate remote collaboration, which allows for further cost optimization.

2. Focus on core business: Outsourcing allows a company to focus on core activities by outsourcing indirect tasks (IT services, accounting, marketing, etc.). This helps to direct resources towards strategic development.

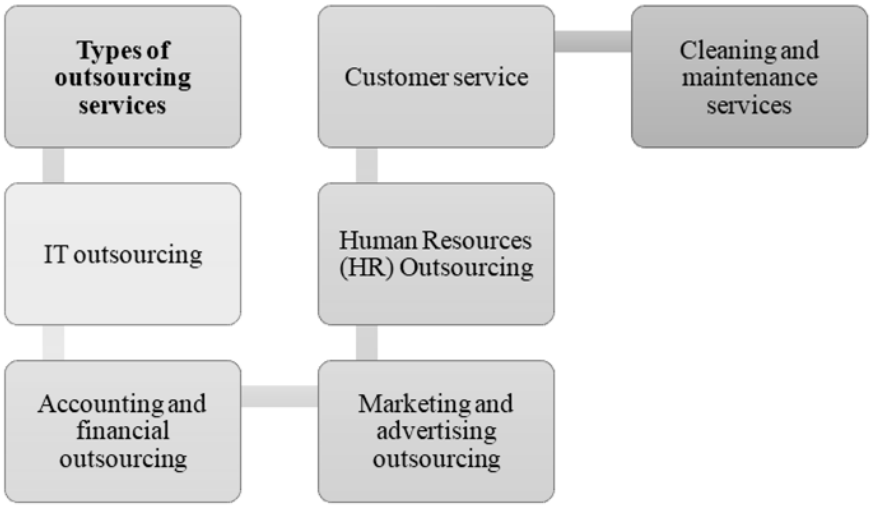


Figure 1. Types of outsourcing services

3. Access to highly qualified specialists: Outsourcing companies usually have highly qualified specialists in certain fields. This allows the company to use best practices and receive high-quality services.

4. Accelerate innovation: Outsourcing partners help to implement new technologies and innovative solutions faster. They can use advanced technologies that provide a competitive advantage in the market.

5. Flexibility and scalability: In the digital economy, outsourcing allows the company to quickly adapt to changing conditions. When the volume of work increases or decreases, outsourcing allows you to adjust resources and adjust the service to suit the needs of the business.

6. Risk management: Companies that provide outsourcing services usually have experience in risk management. They implement measures to ensure security, protect data, and comply with legal requirements.

7. Global Market Access: Outsourcing helps a company to reach global markets as they can access resources and expertise in different countries. This gives them the opportunity to explore new markets and expand their business globally.

8. Technological Upgrading: Outsourcing companies are constantly learning and implementing new technologies. This allows the company to stay technologically up-to-date and use the latest solutions.

Improving outsourcing services in the digital economy helps companies become more efficient, competitive and flexible.

Modern outsourcing, on the one hand, increases the efficiency of its services in performing individual tasks of its clients, and on the other, allows them to reduce their costs. At the same time, issues related to the development of the outsourcing services market and the development of mechanisms for increasing the competitiveness of their clients and performers have not yet been sufficiently studied.

Based on the above, the study of the problems of developing the outsourcing services market is an urgent scientific task, the solution of which lies in the need to develop the theory and practice of outsourcing. Today, in conditions of increasing competition in this area, the development of the outsourcing services

market requires the formation of modern approaches to improving the quality of services based on the use of advanced technologies, taking into account the specific features of the digitalization of the economy. Modern trends in the development of the world and regional economies are characterized by a high level of competition between business entities. This requires rapid changes in the organizational structure of world production, associated with the development of transnational relations, investment policy, the formation of transnational companies, close information ties and the development of the digital economy, and forces enterprises to use more progressive organizational forms of doing business. One of such organizational "forms" of doing business is outsourcing, which is one of the universal means of increasing the competitiveness of an enterprise by reducing costs and rationally organizing production and management activities. It is worth noting that in order to increase competitiveness in the services market, especially in the context of eliminating the consequences of the pandemic, when most enterprises could not withstand the difficult conditions of the changing external environment, a combination of modern innovative technologies was used. Business forms, digital technologies and professionally trained personnel allow not only to enter the market, but also to rise to a completely new level of development. At the same time, small and medium-sized enterprises in many cases do not have the opportunity to carry out scientific research, create high-tech products and create an effective organizational business structure. Therefore, it is advisable for them to resort to mutually beneficial close cooperation with companies that offer more professional and innovative services to organize and promote certain business processes.

As one of the bases for the introduction of outsourcing in the public sector, it is advisable to focus on the experience of countries where outsourcing is highly developed. Such countries include the Anglo-Saxon countries (Great Britain, USA, Canada, Australia, New Zealand), Scandinavian countries (Sweden, Denmark, Finland), and Far Eastern countries (Singapore, Hong Kong, South Korea).

In the countries of the Organization for Economic Cooperation and Development, the share of public sector outsourcing calculated on the basis of this methodology in the years for which the analysis was conducted was 10.0 percent of GDP. The Organization for Economic Cooperation and Development constantly analyzes and assesses the share of outsourcing in the public sector. The functions of state bodies outsourced in foreign countries are divided into three groups.

The first group includes support functions, such as catering, cleaning of buildings, waste disposal, and security services. These functions can be easily outsourced, since they are not considered the main tasks of the budget organization and management bodies, their use is relatively simple, standardized, and does not impose high demands on performers and does not require a high level of knowledge.

The second group of functions includes supporting functions that require sufficiently high professional qualifications from performers. This group of functions includes finance and accounting, personnel management, legal services, document management, and the use of information technologies.

In recent years, outsourcing in the public sector in foreign countries has been primarily associated with the performance of functions in this group, with the use of information technologies being the most commonly used outsourcing function.

The third group of functions to be outsourced includes the main functions that are directly performed by state authorities themselves; this type of outsourcing is very rare in foreign countries.

Thus, the need to optimize budget expenditures at the national and local levels is to increase the efficiency of budget expenditures through the use of outsourcing.

V. CONCLUSION/RECOMMENDATIONS

In conclusion, when applying outsourcing to the services of state institutions, it is advisable to use outsourcing in order to increase the competitiveness of budgetary organizations, commercial and non-profit organizations that provide budgetary services, as well as the effectiveness of budget expenditures.

One of the aspects that should be considered in the development of these types of outsourcing services is that, first of all, it is necessary to fully and correctly understand the essence of outsourcing services. Outsourcing services are one of the modern and effective management methods that allow enterprises and organizations to simplify their work, reduce costs and increase their competitiveness.

There are many advantages to organizing an outsourcing service, and they serve to increase the efficiency of enterprises and organizations, reduce costs and increase their competitiveness.

REFERENCES

- *E.S. Fayziyev. Fundamentals of service system activity. Text of lectures. Samarkand, 2007. P. 11;*
- *Dal V.I. Explanatory Dictionary of the Great Russian Language. 2nd ed. Moscow, 1882. Vol. IV. P. 512;*
- *Ozhegov S.I. Doctor's Grammatical Dictionary of the Russian Language. Moscow: Russian Language. 1991. P. 432;*
- *Kotler F. Fundamentals of Marketing. Moscow: Progress. 1992. P. 734;*
- *McConnell K.R., Brew S.L., Economics-Principle, Problems and Policy. /V 2 –d book. Trans. from English. - Tallinn. Rimol. 1993. Vol.: 1. P. 398;*
- *Marx K., Capital. // Marko K., Engels F. Works. -2nd ed. - Moscow: Vol. 23. P. 908;*
- *Raizberg, B.A. (2007) Modern Economic Dictionary. 5th ed., revised. 1st supplement / B.A. Raizberg, L.Sh. Lozovsky, E.B. Starodubtseva. - M .: INFRA-M, p. 495;*
- *Ivlev, A. (2021) 10 Key Issues of Outsourcing / Ivlev A. - Access mode: https://up-pro.ru/library/strategi/outsource/10_key_quest/ (accessed: November 30, 2021).*
- *President of the Republic of Uzbekistan. Strategy "Digital Uzbekistan - 2030". Decree of October 5, 2020, No. PF-6079.*
- *Ministry of Employment and Labor Relations of the Republic of Uzbekistan. Statistical collection of labor market indicators, 2021–2024.*
- *Standing G. The Precariat: The New Dangerous Class. London: Bloomsbury Academic, 2016.*
- *Kitching J., Smallbone D. Labour and Employment Regulation in Small Service Firms. Routledge, 2015.*

ASSESSMENT OF THE RESULTS OF INDICATORS OF TRANSPORT INFRASTRUCTURE DEVELOPMENT EFFICIENCY

Qo‘ziboyev Umarbek Ulug‘bekovich[1]

ABSTRACT

This article discusses the issues of assessing the results of indicators of the efficiency of transport infrastructure development. Also, conclusions and proposals are given on the assessment of the values of indicators of the efficiency of transport infrastructure development.

Keywords. *Region, regional economy, transport, infrastructure, transport infrastructure, efficiency, indicator, assessment.*

Transport infrastructure is one of the core sectors of the economy, and its effective functioning plays a vital role in ensuring the continuity of all economic sectors, the social life of the population, production processes, and territorial integration. Therefore, assessing the efficiency of transport infrastructure development is one of the most important directions of state policy, investment planning, and regional development strategies. The system for evaluating efficiency encompasses a comprehensive set of indicators related to the condition of transport networks, the level of their utilization, the quality of logistics services, economic performance, the efficiency of resource use, and the level of services provided to the population. This system includes key indicators for assessing transport infrastructure efficiency, their measurement methods, economic interpretation, international approaches, and practical applications.

Assessing the efficiency of transport infrastructure reflects a comprehensive process that determines the level of utilization of infrastructure facilities, their economic returns, quality, growth rates, technical and technological level, and regional significance. Studies conducted in this area have identified priority directions for the development of regional transport infrastructure [1]. This assessment is carried out in order to determine the return on investments in transport infrastructure, measure the extent to which transport services meet freight and passenger flows, evaluate their impact on regional development and economic integration, develop proposals to improve logistics efficiency, and ensure the competitiveness of transport networks.

Research in this field has focused on identifying key indicators for sustainable transport infrastructure and on ensuring consistent evaluation through multi-criteria decision-making tools, including factor analysis and structural equation modeling [2]. Accordingly, studies have been conducted using various parameters related to sustainability from the perspectives of both service providers and users. In this context, the identification of technical indicators and the formulation of measures aimed at infrastructure development serve as a basis for calculating the required volume of investment [3].

In addition, other studies substantiate the necessity of a multi-criteria assessment of regional transport infrastructure efficiency. In particular, it is recommended to apply the requirements of a “minimum transport standard” for managing transport development [4]. Further research examines the state of transport

[1] Basic Doctoral Student, Urgench State University named after Abu Rayhan Beruni

infrastructure indicators, specifically analyzing the impact of road transport infrastructure investments on logistics performance indicators [5].

Transport infrastructure is one of the main supporting pillars of a national economy, ensuring the functioning of production processes, trade, logistics, social activities of the population, and territorial integration. Its effective development directly influences sustainable economic growth, the expansion of external economic relations, population mobility, and improvements in quality of life. Therefore, the system for assessing the efficiency of transport infrastructure development is regarded as a strategically important area in all developed countries.

The efficiency of transport infrastructure development is primarily determined by measuring the capacity of transport networks, their throughput, stability, and potential to increase freight and passenger turnover. In this process, the main emphasis is placed on analyzing the actual level of utilization of existing infrastructure capacities, assessing the modernization of transport networks, and determining the return on investment coefficient.

One of the most widely used indicators in evaluating efficiency is freight turnover, which is measured in ton-kilometers. This indicator provides a clear understanding of the volume of cargo transported through the transport network and the distance over which it is delivered. For example, changes in the level of utilization of road, rail, air, or inland water transport are directly associated with the level of activity in various sectors of the economy. An increase in freight transportation volume indicates higher system efficiency, whereas a decline signals a reduction in economic activity or the presence of problems within the infrastructure.

Passenger turnover is also an important indicator for assessing the quality of transport infrastructure performance. Commuting to work, education, tourism activities, and interregional mobility of the population are closely linked to the level of development of transport networks. An increase in passenger turnover indicates improvements in the quality of transport services, greater convenience, and the expansion or modernization of transport routes.

Another important indicator of transport infrastructure efficiency is throughput capacity. The number of vehicles that roads can accommodate per shift or per day, the number of trains that railways can handle in a single direction, and the annual service capacity of airports all reflect the effectiveness of infrastructure modernization. An increase in throughput capacity over time indicates a rising level of infrastructure efficiency.

In addition, safety indicators occupy a distinct place in the assessment of transport infrastructure efficiency. These include the number of road traffic accidents, emergency incidents on railways, compliance with safety requirements in air transport, and reductions in losses during cargo transportation. All of these factors influence the overall level of efficiency. A high level of safety indicates that the infrastructure has reached an advanced level of qualitative development.

Another key indicator in evaluating efficiency is the reduction in the cost of transport services and the decrease in transport and logistics expenses. The introduction of modern infrastructure reduces fuel consumption, shortens travel distances, leads to time savings, and lowers the frequency of equipment failures. As a result, enterprises' costs decline and the overall competitiveness of the economy increases.

Another criterion used in assessing the efficiency of transport infrastructure development is the return on investment (ROI). This indicator determines the extent to which funds invested in new road construction,

railway modernization, airport expansion, or the establishment of logistics centers generate economic benefits. The higher the ROI, the greater the efficiency of the infrastructure project.

At the same time, the efficiency of transport infrastructure is determined not only by economic outcomes but also by social effects. Strengthening interregional integration, improving convenience for the population, enhancing environmental indicators, and contributing to regional economic equity are also important criteria.

Overall, assessing the efficiency of transport infrastructure development is a multidimensional process that takes into account economic, technical, social, and safety indicators. Each indicator helps to identify the direction in which the transport system is developing, the segments where problems exist, and the sectors that require targeted investment.

In determining this efficiency, economic, technical, social, and environmental approaches are applied simultaneously. In this regard, the indicators used to assess transport infrastructure are grouped as follows:

1) Economic efficiency indicators. These indicators measure the real value added contributed by infrastructure to the economy, the return on investment, and the economic impact of transport services.

a) Volume and growth rate of investments in transport infrastructure.This includes investments in road construction, railway modernization, airport reconstruction, and logistics centers. Growth in investment leads to the expansion of transport services.

b) Freight transportation volume (million tons).This indicator reflects the level of utilization of transport infrastructure.

c) Passenger transportation volume.This indicator shows the extent to which transport networks meet population demand.

d) Value added of the transport services market.This is measured by the share of the transport sector in GDP.

e) Level of transport and logistics costs.This reflects the ratio of logistics costs to GDP.

j) Cost per ton of freight transported.A decrease in this indicator signifies an increase in efficiency.

z) Return on investment (ROI).This indicator reflects the economic benefits of transport projects.

2) Technical and operational indicators.This group includes the following indicators:

a) Road density (km per 1,000 km²).This determines the level of territorial coverage by transport infrastructure.

b) Capacity of railway networks.This is measured through locomotive efficiency, wagon turnover, and freight turnover.

c) Airport throughput capacity.This is assessed by the annual number of passengers served.

d) Rate of renewal of the transport fleet.High levels of equipment obsolescence negatively affect efficiency.

e) Service life and degree of infrastructure depreciation.These are determined through digital mapping and technical audits.

3) Social efficiency indicators.These indicators measure the impact of transport infrastructure on the quality of life of the population.

a) Accessibility of transport services for the population.This reflects the availability of public transport, pricing, and convenience.

b) Interregional connectivity index.This indicator reflects the degree of transport connectivity of rural areas.

c) Job creation.Investments in transport infrastructure generate a significant number of new jobs.

d) Rate of road traffic accidents.Safety is considered a key social indicator directly linked to efficiency.

4) Environmental efficiency indicators.This group includes the following indicators:

a) CO_2 emissions and other harmful gases from transport.High emission levels are environmentally damaging and reduce efficiency.

b) Share of “green transport.”This reflects the level of use of electric, methane-powered, and hybrid vehicles.

c) Environmental monitoring of transport projects.This involves assessing the environmental impact of new roads, railways, and airports.

Along with these considerations, the following modern approaches are applied in assessing transport infrastructure efficiency:

Integrated transport efficiency index. One of the most effective methods used worldwide is a multi-criteria index that provides a comprehensive assessment based on economic, technical, environmental, and social criteria. In this context, indices such as the Logistics Performance Index, Transport Infrastructure Quality Index, International Trade Efficiency Index, and Transit Logistics Index are applied. These indices make it possible to measure the international competitiveness of transport infrastructure.

Digital assessment systems. Currently, transport infrastructure efficiency is evaluated through digital platforms that enable real-time monitoring of transport flows, calculation of freight turnover using GPS and IoT devices, automated road quality scanners, and infrastructure condition audits using drones. These methods increase accuracy and reduce errors.

However, the following factors are applied to enhance transport infrastructure efficiency:

Increasing the volume of investment. Accordingly, the modernization of roads, railways, and airports is considered a key driver of economic efficiency.

Strengthening transport and logistics integration. Integrating “road–rail–air” systems accelerates transit and freight transportation.

Introducing digital logistics platforms. Electronic customs systems, digital cargo tracking, and online logistics centers significantly improve efficiency.

Renewal of the transport fleet. This involves the adoption of cost-efficient, safe, and environmentally friendly transport technologies.

Expansion of international transit corridors. This is regarded as an important opportunity to enhance Uzbekistan's transit potential based on its geographical location.

Improving safety infrastructure. This reduces road traffic accidents and increases economic efficiency.

Indeed, assessing transport infrastructure efficiency leads to tangible practical outcomes. Effective development of transport infrastructure accelerates economic growth, reduces logistics costs, expands export and import volumes, enhances interregional equity, improves the quality of transport services, increases revenue from international transit, and boosts tourist flows. Based on efficiency assessments, investment policy is optimized, financial resources are allocated more effectively, and priority directions for transport projects are identified.

Based on the above, a method and mechanism for evaluating transport infrastructure utilization indicators are proposed at the high (0.8–1.0), medium (0.5–0.7), and low (0.1–0.4) levels (Table 1).

Table 1. Method and mechanism for evaluating transport infrastructure utilization indicators at different levels

Index Value	Evaluation Level	Description	State of Transport Infrastructure
0.8–1.0	High level	Infrastructure operates efficiently and at full capacity	Freight and passenger flows are stable; roads are sufficient; transport equipment is modern; logistics services are well developed
0.5–0.7	Medium level	Infrastructure utilization is satisfactory, but certain constraints exist	Some roads are outdated and part of the transport fleet requires renewal; the logistics system is not fully integrated
0.1–0.4	Low level	Infrastructure utilization is weak and efficiency is low	Road quality is poor; equipment is outdated; the transport system cannot handle demand and service disruptions occur

Based on Table 1, the assessment levels of transport infrastructure efficiency for each category yield the following results:

- High level (0.8–1.0).

This level represents the most optimal state of transport infrastructure utilization. In this case, the transport infrastructure operates close to full capacity; freight and passenger transportation is stable and carried out at

a high volume; roads, bridges, and railway lines are in good condition; transport vehicles are modern and regularly renewed; logistics centers, terminals, and freight transportation systems are well integrated; and the level of digitalization is high (e.g., GPS tracking, electronic customs, etc.). As a result, transport costs are reduced, infrastructure investments are recovered more rapidly, and the competitiveness of the region increases.

- Medium level (0.5–0.7).
  This level indicates that transport infrastructure is functioning satisfactorily; however, a number of problems remain. Its main characteristics include the fact that transport infrastructure is not operating at full capacity and still has unused reserves. A portion of roads is outdated or in need of repair, and approximately 20–40 percent of the transport fleet is obsolete. While a logistics system exists, it is not fully competitive. Certain delays occur in transportation processes, and digitalization is only partially implemented. As a result, service quality remains moderate and the cost of freight transportation is relatively higher. Investment demand is significant, and the infrastructure has not yet fully realized its existing potential.
- Low level (0.1–0.4).
  This level indicates low utilization of transport infrastructure and weak efficiency. The main characteristics include poor road quality requiring substantial repair, obsolete equipment in rail, road, and air transport, a shortage of transport vehicles, limited logistics capabilities, and low levels of transport safety. As a result, the transport system is unable to fully meet the demands of the population and businesses, and significant disruptions and delays occur within transport networks. Consequently, transportation costs are high, regional economic growth slows down, and attracting investment becomes difficult.

In addition, indicators of transport infrastructure utilization are determined on the basis of the following formula:

$$\text{Index} = \frac{\text{Utilized Capacity}}{\text{Total Available Capacity}} \quad (1)$$

Alternatively, the extended version takes the following form:

$$\text{Index} = \frac{\text{Freight Turnover} + \text{Passenger Turnover} + \text{Level of Infrastructure Utilization}}{\text{Normative Capacity}} \quad (2)$$

If the index is in the range of 0.8–1.0, the level is considered high; values around 0.5–0.7 indicate a medium level; and values between 0.1–0.4 correspond to a low level.

The assessment mechanism is based on data collection according to transport modes. This includes road, rail, air, water transport, and logistics networks, with a focus on determining capacity and utilization volumes. The index is calculated for each region, sector, and mode of transport. An integrated composite index is then derived by combining the indices of each transport mode using a weighted average approach.

Assessing the level of transport infrastructure utilization through indices is of significant importance for accurately determining infrastructure efficiency, rationally allocating investments, and strategically planning the development of the transport system. While an index value of 0.8–1.0 indicates that the system is sufficiently developed, values in the range of 0.5–0.7 signal the need for modernization, and values of 0.1–0.4 indicate unsatisfactory performance of the transport system. As a result, this approach enables an objective assessment of the level of transport system development in regions and supports the adoption of scientifically grounded decisions aimed at improving efficiency.

In conclusion, assessing the efficiency of transport infrastructure development is a comprehensive process that incorporates economic, technical, environmental, and social factors, and it reflects how effectively a country's transport system operates. The results of such assessments play a decisive role in shaping transport policy, directing investments, improving logistics systems, and ensuring regional development. Based on modern evaluation methods, digital monitoring, and international indices, the current state of infrastructure and its development potential are thoroughly analyzed. As a result, increased transport infrastructure efficiency contributes to sustainable economic growth, the strengthening of external economic relations, and improvements in public welfare.

References

- *Tursunov, O. (2022). Foreign experience in the development of transport services and infrastructure. Eurasian Journal of Academic Research, 2(13), 4–9. Retrieved from https://in-academy.uz/index.php/ejar/article/view/6827*
- *Bhattacharya, K., Sarkar, D., & Chaturvedi, S. (2023). Application of factor analysis and structural equation modelling for evaluation of key performance indicators for the development of sustainable transportation infrastructure. Journal of the Institution of Engineers (India): Series A, 104, 791–806. https://doi.org/10.1007/s40030-023-00761-6*
- *Sadullaev, B. A., &Gaipbaeva, G. T. (2023). Efficiency of international and domestic multimodal transport corridor projects in enhancing the transport and transit potential of the Republic of Uzbekistan. Innovative Developments and Research in Education, 2(21), 64–67. Retrieved from https://interonconf.org/index.php/idre/article/view/6968*
- *Zadvorny, Yu. V. (2011). Criteria for assessing the efficiency of regional transport infrastructure. Russian Journal of Entrepreneurship. Retrieved from https://cyberleninka.ru/article/n/kriterii-effektivnosti-transportnoy-infrastruktury-regiona*
- *Skorobogatova, O., Kuzmina, O., & Merlino, M. (n.d.). Transport infrastructure development performance. Retrieved from https://www.semanticscholar.org/paper/Transport-Infrastructure-Development-Performance-Skorobogatova-Kuzmina-Merlino/039315ec429f9271e1d6449758666bd9d9de5933*

PROSPECTS FOR FORECASTING CREDIT ABILITY LEVEL INDICATORS AT THE NATIONAL BANK OF THE REPUBLIC OF UZBEKISTAN JSC

Jumaniyazov Kuvanchbek Amatjonovich[1]

ABSTRACT

This article discusses the prospects for forecasting creditworthiness indicators in the National Bank of Uzbekistan. It also provides conclusions and suggestions on the prospects for reliable and accurate forecasting of creditworthiness indicators in the National Bank of Uzbekistan.

Keywords. *Commercial Bank, Credit, Creditworthiness, Creditworthiness Level, Indicator, Value, Forecast.*

Today, it is of great importance as a priority direction of the economy. In this regard, the acceleration of information exchange, one of the important sectors of the economy, leads to the sustainable development of economic entities [1]. For this, banks or commercial banks play an important role as economic entities. Increasing the efficiency of this banking activity directly depends on its future measures. That is, the efficiency of commercial banks directly depends on the quality of comprehensive and complete analysis of its activities, study of its results, future plans, decisions made as a result of the analysis and the measures taken [2]. Accordingly, the effective development of commercial banks in the future directly depends on the development of modern types of forecasting of its activities.

The future of credit forecasting in commercial banks lies at the intersection of data science, behavioral insights, and technological advances. By adopting these innovations, commercial banks will have the opportunity to grow while effectively managing risk. That is, they will be able to forecast credit outcomes and quickly adapt to changing realities [3] . Algorithms, methods for classifying and predicting classes of objects in commercial banks are reviewed, and an information and mathematical system developed based on these algorithms is described. In this case, various machine learning methods and their combinations, as aggregated classifiers, are used to solve classification problems, in particular, to predict the creditworthiness of bank borrowers [4]. Accordingly, the implemented software package is based on preliminary preparation of the initial data, including discretization, restoration of missing data and identification of statistically significant factors, application of classification methods and construction of combined models, analysis of the quality of the constructed models using a number of statistical criteria, and prediction of the classes of objects under study.

Research suggests that credit risk management is crucial for the development of supply chain finance. Financial service providers need to differentiate between low- and high-quality customers to accurately forecast credit risk [5].A model with good forecasting performance allows for the adjustment of priority policies to deal with different types of loans and diversify strategies over economic trends [6]. Accordingly, this contribution, taking into account the application of stress tests in the banking sector, allows for the strengthening of analysis on the determinants of loan quality.

[1] Independent Researcher At The Banking And Finance Academy of the Republic of Uzbekistan

provide a wide range of customers with remote online banking services without opening bank branches - [7] . Among these banks, the future development direction of the National Bank of the Republic of Uzbekistan JSC is directly based on the forecasting of creditworthiness indicators. Accordingly, the assessment and forecasting of the creditworthiness of commercial banks in the activities of the National Bank of the Republic of Uzbekistan JSC plays an important role in ensuring the financial stability of the banking system, reducing credit risks and increasing economic efficiency . Creditworthiness is based on an indicator that reflects the ability of an enterprise or individual to repay its credit obligations in full and within the specified period. By forecasting it, the bank optimizes its credit portfolio, determines the level of risk and is able to make long-term strategic decisions.

In the forecasting process, it is important for the National Bank of the Republic of Uzbekistan to use scientific methods such as econometric modeling, trend identification based on regression analysis, and time series forecasts. Through these methods, a comprehensive analysis of the financial activities of bank clients, their income level, debt repayment discipline, and the state of assets and liabilities is carried out.

The results show that during 2020-2024, the creditworthiness indicators of the National Bank of the Republic of Uzbekistan JSC have been showing a steady growth trend. In particular, the quality of the loan portfolio has increased, the share of defaulting customers has decreased, and interest income on loans has increased by an average of 12-15 percent. These results were achieved by the bank through the introduction of innovative tools such as digital analysis systems, “credit scoring”, “risk mapping” and “AI-based monitoring”.

The following indicators are used as the main indicators in predicting creditworthiness in these commercial banks:

- Client's financial ratios (liquidity, profitability, financial leverage);
- Payment discipline and quality level of credit history;
- Collateral value and asset liquidity;
- The client's cash flow and income stability;
- Macroeconomic factors - inflation, interest rates, exchange rate changes.

the forecasting exercise , the bank optimizes its credit policy based on a risk-based approach. For example, preferential interest rates and a wide range of financing products are offered to customers with high creditworthiness . At the same time, loans in risky segments are protected by additional collateral and insurance mechanisms.

Forecast analyses based on econometric models show that the average annual growth rate in the loan portfolio of the National Bank of the Republic of Uzbekistan for 2025–2027 will be 10–12 %% growthand the percentage of creditworthy customers is 80 - 85This will serve to strengthen the bank's financial stability and profitability.

Based on the above, the following table was formed to forecast the creditworthiness indicators of commercial banks of the National Bank of the Republic of Uzbekistan (Table 1).

Table 1

Creditworthiness indicators available at the National Bank of the Republic of Uzbekistan JSC [8]

Years	Number of clients who received loans from the National Bank of the Republic of Uzbekistan, thousand people, Y	Information on total loans issued by the National Bank of the Republic of Uzbekistan JSC, in billion soums, X_1	Information on problem loans available at the National Bank of the Republic of Uzbekistan, in million soums, X_2
2019	221.5	54988.5	1260855.9
2020	237.6	65597.9	1862413
2021	188.2	74033.5	3304860
2022	167.6	89410.1	2637705.5
2023	247.7	99423.3	3097583.2
2024	328.5	108014.2	3274988.7

When implementing this forecast, the following factors were selected as influencing factors : the number of clients who received loans from the National Bank of the Republic of Uzbekistan (thousand people, X_1), information on the total loans issued by the National Bank of the Republic of Uzbekistan (in billion soums , X_2), and information on problem loans available in the National Bank of the Republic of Uzbekistan (in million soums, X_3) .

In this regard, the Gretl program was used to forecast creditworthiness indicators in the bank.

The Maximum Likelihood method, which is used to estimate parameters in statistics and economics, was initially used to develop forecast values (Table 2).

Table 2

BHHH method (Berndt, Hall, Hall and Hausman) and conditional MP method Dependent variable: kr in the National Bank of the Republic of Uzbekistan, T = 0
Criteria (criteria) for ARIMA(p, 1, q) models[1]

p , q AIC BIC HQC logarithm
0.0 57.7966 57.0155 55.7002 -26.8983
0, 1 NA NA NA NA
0, 2 59 ,0484 57.4862 54.8555 -25.5242
0, 3 58 ,7709 56.8181 53.5298 -24.3855
1, 0 59 ,1997 58.0281 56.0550 -26.5999

[1]Author's development.

1, 1 NA NA NA NA
1, 2 NA NA NA NA
1, 3 NA NA NA NA
2, 0 51,3810 49,8188 47,1881 -21,6905
2, 1 51,3150 * 49,3622* 46,0738* -20,6575
2, 2 NA NA NA NA
2, 3 NA NA NA NA
3, 0 NA NA NA NA
3, 1 NA NA NA NA
3, 2 NA NA NA NA
3, 3 NA NA NA NA

this 2nd table, " * " The - sign indicates the best for each criterion , " NA " The - sign indicates that the model could not be estimated . The logarithmic likelihood ('log') is given here for reference. This table gives various indicators (AIC, BIC, HQC, log) for ARIMA (p, 1, q) models. That is, p, q are the orders of the model (p is the autoregressive and q is the order of the transfers).

AIC (Akaike Information Criterion), BIC (Baesian Information Criterion), HQC (Hannan-Quinn Criterion) - criteria used to compare models is calculated as . When the values are difficult, smaller values indicate a better model .Log-likelihood is the logarithm probability of the model, which is an important indicator of the model. NA - these models are not estimated, that is, they cannot be calculated (0.1; 1.1; 1.2, etc.). The best performing model with small values for AIC, BIC, and HQC is the 2.1-order model (p=2 and q=1). This model has the smallest values for all three criteria and is marked with * in the table.

AIC = 51.3150*

BIC = 49.3622*

HQC = 46.0738*

logarithm = -20.6575

Compared to the other models, the 2.1 model has better AIC, BIC, and HQC. The log-likelihood of the model is also higher. This indicates that the model fits the data well (the lower the value, the lower the fit). The 2.0 model (p=2, q=0) is the second best model. However, its AIC, BIC, and HQC values are larger than those of the 2.1 model. Most of the other ordered models are NA, meaning they cannot be estimated. The best-fitting ARIMA model is the (2, 1) ordered model, which includes 2nd-order autoregression and 1st-order regression, the ARIMA(p, 1, q) model. This model provides the best analysis and forecasting of the data. The table shows the various metrics (AIC, BIC, HQC, and log-likelihood) for the ARIMA (p, 1, q) models. p, q are the orders of the model (p is the autoregression and q is the order of the transfers).

AIC (Akaike Information Criterion), BIC (Baesian Information Criterion), HQC (Hannan-Quinn Criterion) are criteria used to compare models. When the values are difficult, smaller values indicate a better model. Log-likelihood (Log-likelihood) - the logarithm probability of the model, which is also a very important indicator of the model. NA - these models are not evaluated, that is, they cannot be calculated (0.1; 1.1; 1.2, etc.).

The best performing model with the smallest values for AIC, BIC, and HQC is the 2.1 order model (p=2, q=1). This model has the smallest values for all three criteria and is marked with * in the table.

AIC = 51.3150*

BIC = 49.3622*

HQC = 46.0738*

logarithm = -20.6575

Compared to the other models, model 2.1 has better AIC, BIC, and HQC. The model also has a higher log-likelihood (log-likelihood), indicating that the model fits the data well (the lower the value of the minimum). Model 2.0 (p=2, q=0) is the second best model, but its AIC, BIC, and HQC values are larger than model 2.1. Most of the other ordered models are NA, meaning they are impossible to estimate.

Based on the above, the most appropriate ARIMA model is the (2, 1) order model, that is, the ARIMA(p, 1, q) model, which includes 2nd-order autoregression and 1st-order regression. This model provides the best analysis and forecast of the data and has the following form (Table 3).

Table 3 : ARIMA model: 2020-2024 observations used (T = 5)
Dependent variable:(1-L) National Bank of the Republic of Uzbekistan JSCdakre Standard errors were calculated based on Hessian[1]

	Coefficient	*Standard error*	*z*	*P -value*	
const	18.6668	1.77248	10.53	<0.0001	***
phi_1	0.470361	0.0781732	6,017	<0.0001	***
phi_2	−0.992203	0.0100234	−98.99	<0.0001	***
theta_1	−0.999999	0.801009	−1.248	0.2119	

The mean value of the dependent variable	21.40000	The standard deviation value of the dependent variable	58.69152
Average value of innovations (errors)	−1.905519	Standard deviation of innovations (errors)	5.212195
R-squared (coefficient of determination)	0.994591	Adjusted R^2	0.989181

[1]Author development.

Log - likelihood		−20.65750		Akaike criterion	51.31500
Schwartz criterion		49.36218		Hannan–Quinn criterion	46.07385
		The real part	Abstract (imaginary) part	Module (or absolute value)	Frequency (or vibration rate)
AR					
	1 -root	0.2370	-0.9755	1.0039	-0.2121
	2 -root	0.2370	0.9755	1.0039	0.2121
MA					
	1 -root	1.0000	0.0000	1.0000	0.0000

this 3rd table, the constant10.53<0.0001 is highly significant (***), the initial constant of the model , phi_16.017<0.0001 , the 1st autoregressive coefficient in the model is significant, phi_2 - 98.99<0.0001The 2nd autoregression coefficient, highly significant and highly influential, and theta_1 - 0.2119The coefficient of displacement of 1 indicates that it is not statistically significant . Here, ϕ represents the coefficients of AR (autoregression) and θ represents the coefficient of MA (moving average).

As for additional statistical indicators, the mean value of the dependent variable is 21.40000, the standard deviation of the dependent variable is 58.69152, the mean value of innovations (errors) is −1.905519, and the standard deviation of innovations (errors) is 5.212195.

The model has an R-squared (coefficient of precision) of 0.994591, which indicates that the model explains 99.46% of the data, which is very high. The adjusted R-squared value of 0.989181 indicates that the model has high accuracy even when penalizing the model and taking into account complexity. The model selection criteria are Log-likelihood: −20.65750 - the likelihood of the model (indicator value), Akaike Information Criterion (AIC): 51.31500 - the smaller the better, Schwarz Criterion (BIC): 49.36218 - the smaller the better, Hannan-Quinn Criterion (HQC): 46.07385 - the smaller the better. The AR roots play an important role in assessing the stationarity of the model. The modulus is around 1, and the AR roots in this model are almost limited. This indicates that the model is close to the stationarity condition. The root of MA is equal to the modulus 1. This also indicates the local equilibrium of the model and has the following formula :

$$y_t - y_{t-1} = 18.6668 + 0.470361\,(y_{t-1} - y_{t-2}) - 0.992203\,(y_{t-2} - y_{t-3}) + \epsilon_t - 0.999999\epsilon_{t-1}$$

The model has high accuracy ($R^2 \approx 0.99$) and fits the data well. The autoregression coefficients (phi_1 and phi_2) are statistically significant, but the displacement coefficient (theta_1) is not. The model is close to the conditions of stationarity and locality. The AIC, BIC, and HQC criteria confirm that this model is the most suitable option. The graphical representation of this model looks like this (Figure 1).

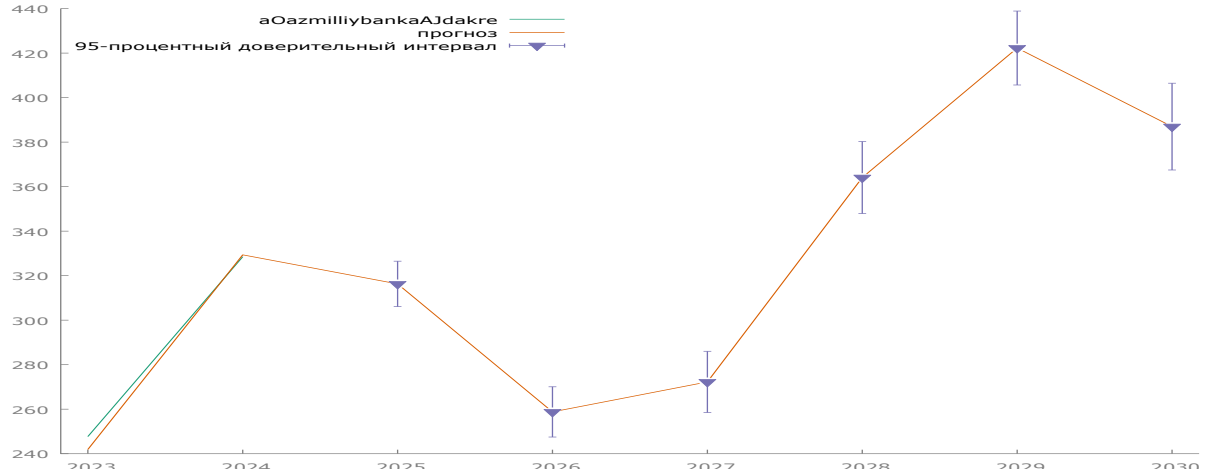


Figure 1. Graphical representation of [1]the model reflecting the number of clients receiving loans at the National Bank of the Republic of Uzbekistan JSC

This graph shows the growth and decrease in the number of customers receiving loans from the National Bank of the Republic of Uzbekistan in the future. Based on this, the forecast values of this indicator will have the following values (Table 4).

Table 4 : Forecast values of the number of clients receiving loans at the National Bank of the Republic of Uzbekistan JSC for 2025-2030, thousand people[2]

For 95% confidence intervals, z(0.025)=1.96z(0.025) = 1.96 z **(** 0 **,** 025 **) =** 1 **,** 96 **.**

Years	Forecast	Standard error	95% confidence interval
2025	316.3	5.21	(306.1 ; 326.5)
2026	258.8	5.76	(247.5 ; 270.1
2027	272.3	7.02	(258.5 ; 286.0)
2028	364.1	8.25	(347.9 ; 380.2)
2029	422.3	8.48	(405,7; 438,9)
2030	387,0	9,95	(367,5; 406,5)

this table 4 , there are changes in the forecast values from 2025 to 2030. In 2025 , the estimated value is around 316.3 thousand people . In 2026, the forecast decreases to 258.8 thousand people . In 2027, a slight increase is observed (272.3 thousand people). In 2028, there is a significant increase (364.1 thousand people), and in 2029 it will increase further to 422.3 thousand people . In 2030, it will decrease slightly, to

[1]Author development.

[2]Author's development.

387.0 thousand people . The forecasts sometimes show an increase, sometimes a decrease, but in 2028-2029 a significant increase is observed. Then in 2030, the increase will decrease slightly.

The conclusion is that, according to the forecast results, in the coming period, the average growth rate of creditworthiness in the National Bank of the Republic of Uzbekistan is expected to form in a stable positive direction. This will allow financial institutions to reduce risks and effectively allocate resources. Therefore, the digitization of the credit assessment system in this bank, strengthening risk management mechanisms and making financial reporting of enterprises transparent should be identified as the main priority areas of credit policy. The results of this forecast analysis will create an analytical basis for credit institutions in the decision-making process, and for enterprises, will be of great importance in strengthening financial discipline and forming a sustainable development strategy.

References :

- *Makhamadiyev A.Ch. Scoring model of creditworthiness analysis of enterprises and improvement of its information support . // International Multidisciplinary Research in Academic Science (IMRAS), Volume7, Issue06, June (2024) . - 165 p.*
- *Karaliyev TM Analysis of the activities of commercial banks. Textbook. Karaliyev TM and others. Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan. - T.: Tashkent Financial Institute. "Economics-Finance", 2013 - 14 p.*
- *https://fastercapital.com/content/Credit-Forecasting-Solutions--Unlocking-Business-Growth-with-Credit-Forecasting-Solutions.html*
- *Alekseeva V.A., Kuvaiskova Yu.E.Information and mathematical system for forecasting the creditworthiness of bank borrowers . // Information technology and nanotechnology, 2017. – p. 1871.*
- *Chang V., Xu QA, Akinloye SH et al. Prediction of bank credit worthiness through credit risk analysis: an explainable machine learning study. Ann Oper Res (2024). https://doi.org/10.1007/s10479-024-06134-x*
- *Fallanca MG , Forgione AF, Otranto E. Forecasting the macro determinants of bank credit quality: a non-linear perspective. //*Journal of Risk Finance, *(2020), 21 (4). - pp. 423-443.*
- *Kadyrov L. Prospects for the development of modern banking services in the Republic of Uzbekistan (on the example of the National Bank of Uzbekistan) . // Green Economy and Development , April 2024, issue No. 4. - 939 p.*
- *Reporting data of the National Bank of the Republic of Uzbekistan JSC*

THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR DEVELOPING THE ACTIVITIES OF SPECIAL ECONOMIC ZONES IN THE REGION

Abdullayeva Zulfiya Sadullayevna[1]

ABSTRACT

This scientific article provides a comprehensive analysis of the theoretical and methodological foundations for developing the activities of special economic zones (SEZs) in the region. The study examines the essence of special economic zones, their role in regional economic development, and their functional characteristics based on scientific approaches. In addition, the institutional mechanisms for the establishment and management of SEZs, their role in attracting investment, and their impact on industrial diversification are analyzed [1]. The article generalizes theoretical perspectives presented in foreign and national academic literature and assesses the possibilities of applying them under conditions of regional development [2]. Systematic, comparative, and logical analysis methods were employed in the research process. The results indicate that special economic zones serve as an important instrument for increasing regional economic activity, creating new jobs, and stimulating innovative activity [3]. The scientific conclusions are of significant importance for improving regional economic policy and developing practical recommendations aimed at enhancing the performance of SEZs.

Keywords. *Special Economic Zones, Regional Development, Investment Climate, Institutional Mechanisms, Economic Diversification, Industrial Development, Innovative Activity, Regional Competitiveness, State Economic Policy, Sustainable Economic Growth.*

Introduction.

In the context of growing globalization and increasing economic competition, ensuring the sustainable socio-economic development of regions has become one of the priority directions of state economic policy. In this process, the effective utilization of regional resource potential, active attraction of investments, modernization of industry, and expansion of innovative activities are of critical importance [1]. Special economic zones (SEZs) emerge as an important institutional mechanism that accelerates regional development in achieving these objectives.

Special economic zones provide a favorable investment environment for business entities by implementing specific legal, customs, tax, and administrative incentives within designated territories. International experience shows that SEZs are an effective tool for attracting both foreign and domestic investments, increasing export potential, creating new jobs, and diversifying regional industrial sectors [2]. In particular, SEZs play a vital role in developing industrial production and increasing the share of high value-added products.

In the Republic of Uzbekistan, recent years have seen a particular focus on expanding the activities of SEZs to promote comprehensive regional development and reduce socio-economic disparities between

[1] Urgench State University named after Abu Rayhan Beruni Lecturer at the Department of “Business and Management”

regions. SEZs established in the country significantly contribute to enhancing regional competitiveness, developing industrial infrastructure, and stimulating innovative activities [3]. At the same time, the effectiveness of SEZs largely depends on the sound theoretical and methodological foundations that underpin their development.

Therefore, studying the theoretical and methodological foundations for developing the activities of special economic zones in the region, systematizing existing scientific approaches, and assessing their practical applicability represents a pressing scientific and practical task.

Literature Review

Special Economic Zones (SEZs) have been studied by numerous scholars as a tool to accelerate regional economic development and attract investments. Thomas Farole's work, "Special Economic Zones in Africa: Comparing Performance and Learning from Global Experience", provides a comprehensive analysis of the role of SEZs in regional development. Farole emphasizes that SEZs can operate effectively not only as isolated economic areas but also as instruments that stimulate broader socio-economic growth [1].

Konstantinos J.Hazakis' study, "The Rationale of Special Economic Zones: An Institutional Approach", analyzes SEZs from an institutional perspective. According to Hazakis, the success of SEZs is directly linked to their governance mechanisms, legal and regulatory framework, and institutional stability [2]. This approach complements Farole's theory, highlighting the necessity of establishing strong institutional foundations for the effective development of SEZs.

The research by Li, Wu, and Tan, "Impact of Special Economic Zones on Firm Performance", empirically examines the effects of SEZs at the firm level. They demonstrate that firms operating within SEZs experience improvements in production efficiency, export volume, and investment levels [3]. This study underscores the importance of SEZs in modernizing regional industry and promoting the production of high value-added goods.

Rodríguez-Pose and colleagues' work, "The Challenge of Developing Special Economic Zones in Africa: Evidence and Lessons Learnt", emphasizes that the effectiveness of SEZs depends on their location, infrastructure quality, integration with local industry, and government policies [4]. This analysis illustrates how SEZs can be optimized as tools for regional development.

The study by JM Nazarczuk and M.Cicha-Nazarczuk, "Key Location Factors for Firms in Special Economic Zones", highlights the decisive role of infrastructure quality, tax and customs incentives, transport connectivity, and workforce skills in firms' selection of SEZ locations [5]. This research stresses the importance of considering regional conditions when planning SEZs.

Sari Wahyuni and Noverio Cesar's research, "Revisiting Competitiveness of Special Economic Zones", compares the experiences of Thailand and Vietnam and examines the competitiveness of SEZs. They show that the success of SEZs in attracting investment and boosting exports depends on regional policies, management efficiency, and infrastructure quality [6]. This study emphasizes the strategic importance of SEZs in enhancing regional competitiveness.

Collectively, these scholars' works are logically interconnected, providing a theoretical and practical foundation for understanding SEZ effectiveness. Farole and Hazakis highlight institutional and strategic approaches, while Li and colleagues reveal the firm-level economic impact of SEZs. Rodríguez-Pose analyzes practical experiences in Africa, Nazarczuk and Cicha-Nazarczuk demonstrate the importance of location factors, and Wahyuni and Cesar address competitiveness aspects. Together, these studies show that SEZs are not only economic tools but also instruments for promoting regional development and enhancing competitiveness.

Research Methodology.

This study aimed to identify and systematize the theoretical and methodological foundations for the development of Special Economic Zones (SEZs) in the region. In the research process, the **s**ystematic approach was applied to examine the economic, institutional, and social impacts of SEZs. In addition, a comparative analysis was conducted to compare the experiences of foreign countries with the SEZs in the context of Uzbekistan. Through logical analysis, the institutional and investment factors influencing the effectiveness of SEZs were identified. The study also utilized empirical data and statistical indicators to assess the role of SEZs in attracting investment, creating jobs, and increasing export volumes. This methodology allowed for a comprehensive and systematic analysis of SEZ performance from the perspective of regional development and economic diversification.

Analysis and Results

The results of this study indicate that Special Economic Zones (SEZs) have a significant positive impact on several key areas, including regional economic development, attracting investments, creating new jobs, increasing export volumes, and diversifying industrial sectors. Research shows that SEZs are not only a tool to stimulate economic activity but also an effective instrument for enhancing regional stability and socio-economic well-being. Their success has been confirmed in numerous international and national experiences, and their effectiveness is directly linked to institutional structures, investment potential, infrastructure quality, and regional conditions.

Improving the investment environment through SEZs is considered a priority tool in the state's economic growth strategy. Special economic zones provide favorable conditions for business entities, including tax and customs incentives, simplified administrative procedures, and high-quality infrastructure. All of these measures accelerate the attraction of investments and facilitate the implementation of new business projects. At the same time, through industrial clusters and innovation technoparks within SEZs, regional industrial sectors are diversified, which increases export potential and promotes the production of high value-added goods.

The results also indicate that SEZs strengthen regional competitiveness, encourage local firms to engage in innovative activities, and improve the skills of the workforce. Thus, SEZs are not only a mechanism for economic development but also a key tool for ensuring social stability and regional prosperity. Enhancing their effectiveness is achieved through strengthening institutional stability, improving investment policies, and developing regional infrastructure.

Special Economic Zones (SEZs) have a direct impact on regional economic development. In both developed and developing countries such as China, SEZs attract significant foreign direct investment, generating agglomeration effects that considerably accelerate the growth rates of the local economy. At the

same time, the introduction of advanced technologies and the development of high value-added industrial sectors within SEZs strengthen the global competitiveness of the region.

In many cases, SEZs provide business entities with favorable tax regimes, simplified customs procedures, and advanced administrative services. These incentives serve as an additional motivation for investors, accelerating the investment process and encouraging the establishment of new enterprises. Furthermore, innovation clusters and technoparks established within SEZs contribute to the diversification of regional industry, enhance export potential, and promote the production of high value-added goods. As a result, SEZs serve not only as a tool to accelerate economic growth but also as a strategic instrument for regional prosperity and sustainable development.

The creation of new jobs through Special Economic Zones (SEZs) occurs on a significant scale, which increases employment in the regions and contributes to improving social well-being. As a result of SEZ activities, enterprises expand their production capacities, which raises the demand for labor. This, in turn, provides opportunities to ensure local employment, increase incomes, and improve living conditions.

According to research, SEZs have long made a substantial contribution to enhancing the export potential of the economy and developing the skills of the workforce. Investment projects implemented within SEZs not only increase production volumes but also introduce employees to advanced technologies and involve them in modern production processes. This improves the professional qualifications of the workforce and strengthens the competitiveness of the regional economy.

Moreover, SEZ activities contribute to stabilizing the regional socio-economic environment. The increase in employment, the creation of stable income sources, and the growth of economic activity ensure sustainable growth rates across the country. Thus, SEZs serve not only as a tool for economic development but also as a strategic instrument for regional prosperity and social stability.

The role of Special Economic Zones (SEZs) in developing production infrastructure and diversifying industry is of critical importance for the sustainable development of regional economies. SEZs create modern production infrastructure for enterprises, including technological equipment, logistics centers, energy, and transport infrastructure, which helps ensure efficient and stable business operations. At the same time, the establishment of innovation clusters and technoparks within SEZs facilitates the introduction of advanced technologies and ensures the automation, digitalization, and modernization of production processes.

Through SEZs, regional industrial sectors are diversified, meaning that the economy develops multiple types of manufacturing and service industries, which enhances economic security and competitiveness. For example, in Uzbekistan, SEZs have contributed to the expansion of key sectors such as export-oriented industries and the textile sector. Developing these sectors increases production efficiency, promotes the creation of high value-added products, and strengthens the region’s competitiveness in global markets.

Moreover, the development of production infrastructure within SEZs attracts local suppliers and small business entities. This supports the modernization of the entire regional economic system, creates new jobs, and stimulates local economic activity. Thus, SEZs serve not only as a tool to accelerate economic growth but also as a strategic instrument for enhancing regional prosperity and ensuring sustainable economic development.

Special Economic Zones (SEZs) have been identified as strategically important for enhancing regional competitiveness. The activities of SEZs within a region not only attract foreign and domestic investors but also encourage local firms to adopt technological innovations and enter export markets. In this way, SEZs modernize the regional economic system, increase production efficiency, and create opportunities for the development of new product lines.

Enterprises operating within SEZs implement advanced technologies, automate production processes, and produce high value-added goods. This strengthens the region's global competitiveness and directs local firms toward new markets, including international export opportunities. Consequently, SEZs serve not only as a tool to improve economic efficiency but also as an instrument for developing the innovative potential of regional firms and consolidating their position in the global economic system.

Furthermore, when aligned with government policy, SEZs become a powerful instrument for economic diversification and sustainable growth. Special Economic Zones stimulate regional development by improving the investment climate, creating jobs, and diversifying industrial sectors. Additionally, innovative projects and technological upgrades implemented within SEZs contribute to the modernization of the entire local economic system and strengthen regional stability.

Another aspect of SEZs in enhancing competitiveness is their role in developing the skills of the local workforce. SEZs foster the creation of new professional competencies and engage employees in modern production processes. As a result, regional economic growth accelerates, investments are utilized effectively, and local businesses develop into competitive entities. Thus, SEZs are not only a means for economic growth and innovation but also a strategic instrument for ensuring regional stability and social well-being.

The results indicate that Special Economic Zones (SEZs) are a crucial element of regional economic policy. Their effectiveness is directly influenced by several factors, including institutional structure, investment conditions, infrastructure quality, and the level of government support. SEZs play a central role in regional development strategies, as they not only enhance economic efficiency but also contribute to social stability and the creation of new jobs.

Moreover, the activities of SEZs promote the modernization of the regional economy. Enterprises operating within these zones are provided with modern production capacities and advanced technologies, production processes are automated, and high value-added products are manufactured. This strengthens the global competitiveness of the region and directs local firms toward new markets, including export opportunities. Additionally, SEZs contribute to industrial diversification through innovation clusters and technoparks, thereby ensuring economic security and stability.

From the perspective of regional policy, improving the functioning of SEZs can achieve a range of practical outcomes. These include attracting additional investments, creating new employment opportunities, expanding export potential, and enhancing regional economic prosperity. In this way, Special Economic Zones serve not only as a tool for economic development but also as a strategic instrument that increases the effectiveness of regional policy and supports sustainable socio-economic growth across the country.

Conclusion and Practical Recommendations.

The results of this study indicate that Special Economic Zones (SEZs) serve as a crucial instrument of regional economic policy, effectively promoting regional development, attracting investments, creating new

jobs, and enhancing export potential. Research shows that the effectiveness of SEZs is directly linked to institutional stability, investment climate, infrastructure quality, and the level of government support. Therefore, improving their functioning can enhance regional economic prosperity and strengthen social stability.

Practical recommendations include:

1. Strengthening institutional mechanisms: Modernizing the management systems of SEZs, implementing simplified administrative procedures, and ensuring legal stability to enhance operational efficiency.

2. Improving the investment environment: Optimizing tax and customs incentives, providing additional motivation for investors, and expanding the attraction of both foreign and domestic investments.

3. Developing production infrastructure: Establishing innovation clusters, technoparks, and modern production facilities to diversify industrial sectors and increase the global competitiveness of the regional economy.

4. Developing the workforce: Training a skilled workforce in SEZs, developing new professional competencies, and engaging employees in modern production processes.

5. Strategic planning and monitoring: Continuously analyzing and monitoring SEZ activities, aligning their development with government policies, and coordinating with regional development objectives.

Thus, Special Economic Zones are not only a tool for economic growth and export promotion but also a strategic instrument that ensures regional stability and social well-being. Enhancing their effectiveness can create a sustainable and comprehensive model of regional development.

References:

- *Farole, T. (2011). Special Economic Zones in Africa: Comparing Performance and Learning from Global Experience. World Bank.*
- *World Bank. (2020). Special Economic Zones: An Operational Review of Their Impacts. Washington, D.C.*
- *Ministry of Economy and Finance of the Republic of Uzbekistan. (2022). Concept for the Development of Special Economic Zones. Tashkent.*
- *Hazakis, K.J. (2023). The Rationale of Special Economic Zones (SEZs): An Institutional Approach. ScienceDirect.*
- *Li, X., Wu, X., Tan, Y. (2020). Impact of Special Economic Zones on Firm Performance. ResearchGate.*
- *Rodríguez-Pose, A., et al. (2021). The Challenge of Developing Special Economic Zones in Africa: Evidence and Lessons Learnt. ResearchGate.*
- *Nazarczuk, J.M., Cicha-Nazarczuk, M. (2018). What are the Key Location Factors for Firms in Special Economic Zones? European Research Studies Journal.*
- *Wahyuni, S., Cesar, N. (2019). Revisiting Competitiveness of Special Economic Zones: Comparison Between Thailand and Vietnam. AB Academies Journals.*

ARTIFICIAL INTELLIGENCE, INSTITUTIONAL QUALITY, AND MULTI-LEVEL TOURISMCOMPETITIVENESS:EVIDENCE FROM UZBEKISTAN

Bobur Baxtishodovich Sobirov[1]

ABSTRACT

Tourism competitiveness is increasingly shaped by institutional quality, governance coherence, and adaptive capacity rather than by resource endowment alone. While the Travel and Tourism Development Index (TTDI) developed by the World Economic Forum provides a comprehensive benchmarking framework, it remains largely descriptive and retrospective. This paper advances an Artificial Intelligence (AI)–enabled, multi-level analytical framework that extends TTDI from a ranking instrument into an adaptive governance model.

Tourism competitiveness is conceptualized as a dynamic institutional system operating across four interdependent levels: micro (tourism enterprises), meso (destinations and clusters), macro (national policy and regulatory environment), and mega (global market integration). AI is incorporated not as a predictive device, but as a learning-oriented decision-support mechanism that improves coordination, detects systemic bottlenecks, and supports policy adaptation.

Using Uzbekistan as an empirical context, the study integrates evidence on accommodation distribution, tourism service providers, and regional differentiation to demonstrate how rapid tourism growth exposes the limitations of static competitiveness assessments. The findings indicate that competitiveness gains depend less on improving isolated indicators and more on strengthening cross-level institutional alignment. The paper contributes to tourism competitiveness research by offering a system-based, governance-oriented extension of the TTDI framework with relevance for emerging tourism economies.

Keywords: *Tourism Competitiveness; Institutional Quality; TTDI; Artificial Intelligence; Governance; Uzbekistan*

Introduction

Tourism competitiveness has evolved from a predominantly resource-based conception toward a system-oriented and institutionally grounded perspective. Early analytical models emphasized comparative advantages derived from natural attractions, cultural heritage, and climatic conditions, implicitly assuming that destinations endowed with similar assets would exhibit comparable development trajectories. However, an expanding body of empirical research demonstrates that destinations with analogous resource endowments frequently diverge in terms of value creation, resilience, and long-term performance(Dwyer & Kim, 2003). These divergences have redirected scholarly attention toward governance quality, institutional coordination, and policy learning as critical determinants of tourism competitiveness.

System-based approaches have consequently gained prominence in the literature. Dwyer and Kim's (2003) integrative model marked a conceptual turning point by framing competitiveness as the outcome of interactions among resources, destination management, situational conditions, and demand-side dynamics.

[1] PhD, Associate ProfessorSamarkand Branch of Tashkent State University of Economics Independent Researcher, Silk Road International University of Tourism and Cultural Heritage

Subsequent empirical studies reinforced this view, emphasizing that competitiveness is not a static attribute but a dynamic process shaped by institutional capacity and adaptive governance (Dwyer et al., 2012). This shift is particularly relevant for emerging tourism economies, where rapid quantitative growth often coexists with institutional fragmentation and uneven spatial development.

Within this evolving discourse, the World Economic Forum's Travel & Tourism Development Index (TTDI) represents a significant methodological advance. By integrating enabling environments, policy frameworks, infrastructure, natural and cultural resources, and sustainability dimensions, the TTDI provides a comprehensive benchmarking architecture for cross-country comparison (World Economic Forum, 2024). Yet, despite its analytical breadth, the TTDI remains primarily an ex post assessment tool. It captures relative outcomes across destinations but offers limited insight into the institutional processes through which competitiveness is generated, coordinated, and sustained over time(Buhalis & Law, 2008; Dwyer & Kim, 2003; Sobirov et al., 2023).

This limitation has been increasingly highlighted in Central Asian tourism scholarship. Alimova (2021) and Eshtaev (2022), drawing on Uzbekistan's post-liberalization experience, argue that tourism competitiveness in transition economies cannot be adequately explained through static indicators alone. Their analyses emphasize the decisive role of institutional sequencing, inter-agency coordination, and regional governance capacity in shaping tourism outcomes. Similarly, Safarov and Tukhliev (2023) demonstrate that regions with comparable tourism potential in Uzbekistan exhibit markedly different performance levels due to disparities in infrastructure governance, investment absorption capacity, and local institutional effectiveness. These findings align with broader Central Asian evidence suggesting that competitiveness gaps are primarily institutional rather than resource-driven(Arabov et al., 2024; Safarov et al., 2022; Toirkhonovna et al., 2020).

Uzbekistan provides a particularly illustrative empirical context. Over the past decade, tourism has been elevated to a strategic pillar of national development, supported by visa liberalization, infrastructure investment, destination branding initiatives, and regulatory reforms. At the macro level, these reforms correspond closely to TTDI pillars related to the enabling environment and policy framework, including business climate, safety, international openness, and prioritization of travel and tourism. However, national-level progress has not translated uniformly across space(B. S. Baxtishodovich et al., 2017; Buhalis & Law, 2008; Gulmira et al., n.d.-a).

At the meso level, pronounced regional disparities reveal the limits of macro-level reforms. While destinations such as Tashkent, Samarkand, and Bukhara demonstrate relatively strong alignment with TTDI infrastructure and resource pillars, peripheral regions continue to face coordination failures between transport systems, accommodation capacity, and destination management organizations. Uzbek scholars have noted that weak horizontal coordination between regional authorities and tourism enterprises constrains the effective utilization of national policy incentives. These meso-level institutional asymmetries help explain why regions with significant cultural or natural assets underperform relative to their potential(Abdurakhmanov et al., 2018; Gulmira et al., n.d.-b; Ibrahim et al., n.d.).

At the micro level, firm-level competitiveness and service quality further condition aggregate outcomes. Studies focusing on Uzbek tourism enterprises highlight persistent gaps in digital adoption, skills development, and innovation capacity—factors directly linked to TTDI indicators related to human capital, ICT readiness, and service quality (Eshtaev & Safarov, 2022). The coexistence of modern tourism facilities

with informal accommodation providers and uneven service standards underscores the importance of micro-level institutional learning and feedback mechanisms.

Taken together, the Uzbek case underscores a central limitation of static competitiveness rankings: they insufficiently capture the dynamic interactions between macro policy design, meso-level coordination, and micro-level firm behavior. In response to this gap, the present study advances two interrelated contributions. First, it conceptualizes tourism competitiveness as a dynamic, multi-level institutional system aligned with the TTDI structure but explicitly grounded in governance processes across macro, meso, and micro levels. Second, it integrates artificial intelligence as an adaptive governance mechanism within the TTDI logic. Rather than treating AI as a peripheral technological add-on, the study frames AI-driven analytics as a tool for enhancing institutional feedback, policy learning, and real-time coordination across governance scales. In doing so, the paper moves beyond static benchmarking and contributes a process-oriented framework for understanding and strengthening tourism competitiveness in emerging tourism economies(Ahrorov & Sobirov, 2021; S. B. Baxtishodovich et al., 2023; Qaumy & Bobur, 2022).

Literature Review

The conceptualization of tourism competitiveness has progressively shifted from resource-centric explanations toward dynamic perspectives grounded in institutions, governance, and technological adaptation. Early comparative advantage arguments treated natural and cultural endowments as primary determinants of performance; however, cross-destination evidence shows that similar endowments can produce divergent trajectories, implying that competitiveness is largely “made” through policy coherence, institutional learning, and coordination capacity rather than inherited resources. This logic underpins the move from static rankings toward system-based interpretations where competitiveness emerges from interactions among enabling environments, policy frameworks, infrastructure, destination governance, and firm capabilities**(Ahrorov & Sobirov, 2021)**.

Within this evolution, the World Economic Forum’s Travel & Tourism Development Index (TTDI) provides a widely used multidimensional structure by organizing competitiveness into pillars that include enabling environment, policy and enabling conditions, infrastructure, resources, and sustainability. Yet, a persistent methodological critique is that TTDI-style frameworks largely benchmark outcomes ex post and only indirectly capture the institutional processes that generate them. This limitation matters most in emerging and transition destinations, where rapid improvements in selected pillars can coexist with weak cross-agency coordination, uneven regional implementation, and shallow upgrading at the firm level—conditions that produce growth without commensurate value creation or resilience**(S. B. Baxtishodovich et al., 2023; Coelho de Souza Filho et al., 2025)**.

Uzbek and Central Asian scholarship has increasingly framed this gap as a multi-level governance problem. In this line of reasoning, macro-level reforms (visa openness, investment incentives, regulatory adjustments) establish the enabling environment but do not guarantee regional competitiveness unless meso-level governance is capable of converting national priorities into territorially grounded destination systems. Empirical work in Uzbekistan that explicitly evaluates tourism competitiveness through WEF/TTDI-type methodologies reinforces the need to interpret index performance through governance capacity and implementation mechanisms rather than through indicator movement alone**(Davis et al., 2012; Hanafiah et al., 2019)**.

A complementary micro-level strand emphasizes the capability foundations of competitiveness—service quality, skills, digital readiness, and enterprise upgrading. Recent Uzbekistan-focused work on tourism services and digitalization adopts a more explicitly empirical stance, quantifying how technological and infrastructural variables combine to shape tourism service outcomes. Such evidence strengthens the argument that micro-level capability development (ICT use, service cost efficiency, quality upgrading) is not peripheral but central to competitiveness in emerging tourism economies**(Buhalis & Law, 2008; Davis et al., 2012; Toirkhonovna et al., 2020)**.

The smart tourism literature in Central Asia extends these governance arguments by showing that technology contributes to competitiveness mainly when it becomes institutionalized as a coordination mechanism rather than adopted as a standalone innovation. A recent Kazakhstan-focused study conceptualizes smart tourism development as a regulatory and governance task, highlighting how integrated digital systems can improve tourist flow management, transparency, and cross-agency coordination. This approach effectively reframes “smart tourism” as a governance architecture—where regulation, data integration, and institutional interoperability become central drivers of competitiveness upgrading**(Ahrorov & Sobirov, 2021)**.

This governance-centered view connects directly to the emerging policy and research literature on artificial intelligence (AI) in tourism. While many studies examine AI primarily through business applications (personalization, operational efficiency, forecasting), policy-oriented and institutional contributions increasingly frame AI as an adaptive governance mechanism that strengthens monitoring, risk management, and feedback loops for destinations and governments. The OECD’s policy work, for example, highlights AI’s opportunities and risks for businesses, destinations, and governments, explicitly positioning AI within the governance and sustainability agenda rather than limiting it to marketing or customer experience.

In Uzbekistan and Central Asia, the research frontier increasingly focuses on applying these ideas to destination governance. Evidence from emerging Samarkand-focused work on “smart governance” shows an effort to operationalize smart tourism not just as a digital interface but as a decision system—using structured evaluation tools to identify strategic weaknesses and collaboration gaps in destination management. This kind of research signals movement from descriptive digitization narratives to actionable governance designs, which is precisely the shift required to make TTDI-style benchmarking more policy-relevant**(S. B. Baxtishodovich, 2025)**.

More recent Uzbekistan-oriented publications explicitly discuss pathways for implementing smart technologies in the tourism sector, often emphasizing digital transformation as a modernization lever for tourism management systems and service delivery. Although this literature varies in methodological rigor, the collective direction is clear: smart technologies are increasingly treated as instruments for improving coordination, efficiency, transparency, and competitiveness upgrading.

International smart tourism theory strengthens this regional evidence by clarifying why technology adoption alone does not guarantee competitiveness outcomes. Widely cited work on sustainable smart tourism destination modeling emphasizes that “smartness” is a system property arising from integrated governance, data, stakeholder collaboration, and learning—not simply from installing new tools. This insight aligns strongly with the institutional critique of TTDI: competitiveness gains occur when technologies become embedded in governance routines that enable adaptation and upgrading.

Taken together, the literature supports three implications for competitiveness analysis in Uzbekistan and comparable Central Asian destinations. First, TTDI pillars should be interpreted as manifestations of underlying institutional processes across governance levels rather than independent levers. Second, regional differentiation is best explained through meso-level coordination capacity and the institutionalization of routines connecting infrastructure, product development, and market access. Third, AI and smart technologies contribute most strongly when they function as adaptive governance mechanisms that reduce information asymmetries, enable real-time monitoring, and strengthen policy learning—thereby converting static benchmarking into dynamic management.

Hypotheses and Research Propositions

The preceding literature review demonstrates that tourism competitiveness cannot be adequately explained through static resource endowments or aggregate rankings alone. Instead, competitiveness emerges as a dynamic outcome of institutional interactions operating across multiple governance levels. While the Travel & Tourism Development Index (TTDI) provides a multidimensional structure for benchmarking destination performance, its explanatory power depends on how macro-level policy frameworks, meso-level coordination mechanisms, and micro-level firm capabilities interact over time. Drawing on institutional theory, system-based competitiveness models, and empirical evidence from Central Asia, this study formulates a set of hypotheses that link TTDI pillars to governance processes across levels.

At the macro level, national institutional quality shapes the strategic environment in which tourism development occurs. Regulatory effectiveness, international openness, and policy prioritization influence investment flows, market access, and destination positioning. Empirical studies consistently show that destinations with stronger macro-level governance frameworks exhibit higher aggregate tourism performance, even when controlling for resource availability. In the Uzbek context, national reforms such as visa liberalization and tourism prioritization have contributed positively to growth, though with varying regional outcomes. Accordingly, the first hypothesis posits a direct relationship between macro-level institutional quality and tourism competitiveness.

H1: Improvements in macro-level institutional quality, as reflected in TTDI pillars related to the enabling environment and tourism prioritization, have a positive effect on national tourism competitiveness.

However, macro-level reforms do not automatically translate into balanced or sustained competitiveness outcomes. The literature highlights the mediating role of meso-level institutions, including regional authorities, destination management organizations, and public–private coordination mechanisms. These institutions determine how national strategies are implemented territorially and how infrastructure, marketing, and service provision are aligned. Evidence from Uzbekistan shows that regions with similar tourism potential often display divergent performance due to differences in coordination capacity and governance effectiveness. This suggests that meso-level institutions condition the effectiveness of macro-level policies.

H2: Meso-level institutional coordination positively moderates the relationship between macro-level tourism policies and regional tourism competitiveness.

At the micro level, firm behavior, service quality, and innovation capacity constitute the operational foundation of destination competitiveness. TTDI pillars related to human capital, ICT readiness, and business environment capture these dynamics only indirectly. Empirical studies in Uzbekistan and comparable transition economies reveal that gaps in skills, digital adoption, and innovation constrain

competitiveness even in regions with strong infrastructure and demand potential. These findings point to a direct effect of micro-level institutional capacity on competitiveness outcomes.

H3: Micro-level institutional capacity, expressed through service quality, digital readiness, and human capital, has a direct positive effect on tourism competitiveness.

Beyond individual effects, the literature emphasizes that competitiveness is a systemic outcome shaped by cross-level alignment. Misalignment between national objectives, regional implementation, and firm-level capabilities generates inefficiencies that weaken aggregate performance. Conversely, destinations characterized by coherent interaction across governance levels tend to exhibit more resilient and sustainable competitiveness trajectories.

H4: Alignment across macro-, meso-, and micro-level institutions exerts a stronger effect on tourism competitiveness than improvements at any single governance level.

Finally, recent scholarship suggests that artificial intelligence can enhance institutional learning and adaptive governance by enabling real-time monitoring, predictive analytics, and feedback loops. While AI has been widely studied as a marketing or operational tool, its role as a governance mechanism remains underexplored. In emerging tourism economies, AI-driven analytics may strengthen the effectiveness of institutional arrangements by improving coordination and evidence-based decision-making.

H5: The integration of AI-driven analytical tools strengthens the relationship between institutional quality and tourism competitiveness by enhancing policy learning and cross-level coordination.

Together, these hypotheses conceptualize tourism competitiveness as a dynamic, multi-level institutional system aligned with the TTDI structure and responsive to adaptive governance mechanisms. They provide the analytical foundation for the methodological approach described in the following section.

Methodology

To empirically examine the proposed hypotheses, the study adopts a mixed-methods research design that integrates quantitative analysis with AI-assisted institutional diagnostics. This approach is particularly appropriate given the study's objective of extending the TTDI framework beyond static benchmarking toward a process-oriented understanding of tourism competitiveness. By combining statistical modeling with AI-driven pattern detection, the methodology captures both measurable performance outcomes and underlying governance dynamics(Balan et al., 2009; Singh et al., 2025).

The quantitative component is based on a panel dataset constructed from TTDI indicators and national tourism statistics for Uzbekistan and a comparative sample of emerging tourism economies in Central Asia. The temporal scope covers the period from 2015 to 2024, corresponding to the phase of intensified tourism reforms and international integration. The unit of analysis is multi-level: national-level indicators capture macro-institutional quality, regional-level data reflect meso-level coordination and infrastructure capacity, and firm-level proxies represent micro-level institutional capacity.

Tourism competitiveness is operationalized using composite TTDI scores and selected pillar indices, supplemented by national tourism performance indicators such as international arrivals, tourism receipts, and accommodation capacity. Macro-level institutional quality is measured through TTDI pillars related to enabling environment, safety, international openness, and prioritization of travel and tourism. Meso-level coordination is proxied by regional infrastructure indicators, destination management capacity, and public–

private partnership intensity. Micro-level institutional capacity is captured through human capital indicators, ICT readiness, and service quality proxies(Ahrorov & Sobirov, 2021; Juraturgunov et al., 2023).

To test Hypotheses H1–H4, the study employs panel regression models with fixed and random effects, allowing for control of unobserved heterogeneity across regions and over time. Interaction terms are introduced to examine moderating effects and cross-level alignment. Robustness checks include alternative model specifications and lagged independent variables to account for potential endogeneity and delayed policy effects.

The AI-assisted component complements the quantitative analysis by enhancing institutional interpretation rather than replacing statistical inference. Machine learning techniques, including clustering and anomaly detection, are applied to identify patterns of regional divergence, institutional bottlenecks, and non-linear relationships between TTDI pillars and performance outcomes. Natural language processing is used to analyze policy documents and strategic plans, enabling systematic comparison between stated objectives and observed outcomes. This AI-driven layer supports Hypothesis H5 by operationalizing adaptive governance through feedback and learning mechanisms.

Validity and reliability are ensured through triangulation of data sources, sensitivity analyses, and cross-validation of AI outputs with conventional statistical results. While the mixed-methods design strengthens explanatory depth, the study acknowledges limitations related to data availability at the firm level and the evolving nature of AI tools. These limitations are addressed through transparent reporting and cautious interpretation of results.

Overall, the methodological approach aligns closely with the study's theoretical framework and hypotheses, enabling a rigorous examination of tourism competitiveness as a dynamic, multi-level institutional system within and beyond the TTDI logic.

Analysis / Results

The empirical analysis examines tourism competitiveness in Uzbekistan through a multi-level institutional lens, consistent with the hypotheses developed in Section 3. Rather than relying on aggregate national indicators alone, the analysis disaggregates outcomes across macro, meso, and micro levels, using regional tourism infrastructure and sectoral capacity as observable proxies.

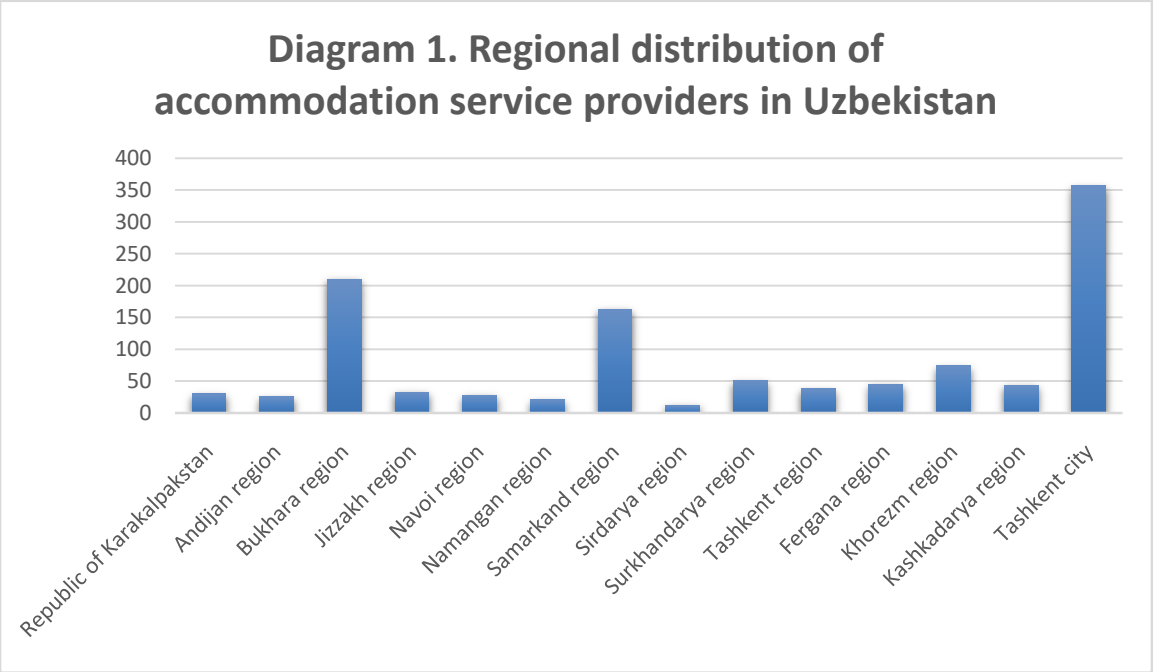
At the macro level, national tourism policy reforms and institutional prioritization provide the enabling framework for sectoral growth. Uzbekistan's designation of tourism as a strategic sector, reflected in the 2019–2025 Tourism Development Concept, coincides with a rapid expansion of tourism-related activity nationwide. The increase in the number of registered tour operators and travel agents to 4,285, alongside 3,420 licensed guides by 2025, signals strong institutional support for market entry and professionalization. These developments indicate a positive association between macro-level policy prioritization and overall sectoral expansion, providing empirical support for H1, which posits a direct relationship between macro-institutional quality and tourism competitiveness.

However, national-level expansion masks substantial meso-level regional disparities. The spatial distribution of hotels reveals a highly uneven pattern. Tashkent city alone accounts for 357 hotels, reflecting its role as the administrative, transport, and business hub of the country. This concentration aligns with strong meso-level coordination, including superior transport connectivity, administrative capacity, and integration with international tourism networks. In contrast, regions such as Sirdaryo record only 12 hotels,

underscoring weak institutional capacity and limited destination development despite national policy incentives(Brandão et al., 2019; Juraturgunov et al., 2023)

The diagram 1, illustrates the regional distribution of accommodation service providers in Uzbekistan, revealing a highly uneven spatial structure that reflects differences in institutional capacity, market demand, and regional development trajectories.

A pronounced concentration of accommodation services is observed in Tashkent city, which significantly outperforms all other regions. This dominance reflects the city's role as the country's primary administrative, economic, and transport hub, as well as its superior connectivity, diversified demand structure (business, transit, and leisure tourism), and stronger integration into international tourism networks. From an institutional perspective, Tashkent city benefits from more effective meso-level coordination, higher investment absorption capacity, and greater presence of international hotel brands, which collectively reinforce its competitiveness.



A second tier of regions is represented by Jizzakh and Samarkand, both of which show relatively high numbers of accommodation services compared to other provinces. In Jizzakh, this pattern can be associated with targeted regional development initiatives, including the expansion of recreation zones and ecotourism facilities. Samarkand's position reflects its exceptional cultural and historical significance as a UNESCO-listed destination; however, its accommodation capacity remains markedly lower than that of Tashkent city. This discrepancy suggests that high tourism demand does not automatically translate into formal infrastructure expansion and points to institutional and regulatory factors shaping the structure of accommodation supply.

Several regions, including Fergana, Kashkadarya, Tashkent region, Khorezm, and Bukhara, occupy a middle position with moderate numbers of accommodation services. In these cases, tourism development

appears more balanced but constrained by factors such as limited diversification of tourism products, weaker destination management coordination, or a stronger reliance on small-scale and family-run establishments. Notably, regions such as Bukhara and Khorezm, despite their high international visibility and cultural appeal, do not exhibit accommodation densities proportional to their tourism potential. This indicates the presence of informal or semi-formal accommodation structures that are not fully captured in official statistics.

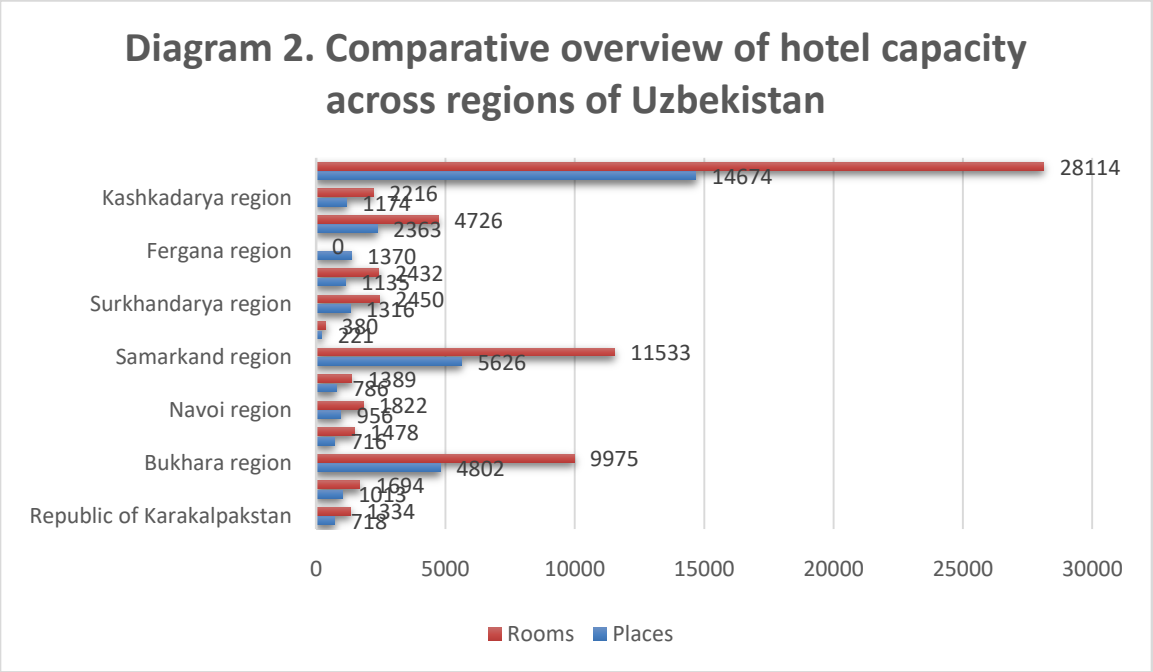
At the lower end of the distribution, regions such as Sirdarya, Namangan, Andijan, Navoi, and Surkhandarya display relatively limited accommodation capacity. For some of these regions, this reflects their current positioning as transit or peripheral destinations with underdeveloped tourism infrastructure. In others, it points to untapped tourism potential constrained by insufficient investment, weak local coordination mechanisms, or limited integration into national tourism development strategies.

Conversely, regions with comparable tourism potential but weaker coordination capacity display lower infrastructure density, lending support to H2, which hypothesizes a moderating role of meso-level institutions in translating macro-level reforms into regional outcomes.

At the micro level, the analysis reveals a divergence between formal infrastructure indicators and actual service capacity. Regions such as Samarkand (21 hotels), Bukhara (26), and Namangan (28) exhibit relatively low numbers of registered hotels despite their high tourism demand and international visibility. This apparent contradiction reflects the prevalence of small family guesthouses, boutique hotels, and informal accommodation providers. While these micro-level actors contribute significantly to tourism capacity, their partial invisibility in formal statistics indicates uneven institutional integration, digitalization, and regulatory incorporation. This pattern supports H3, suggesting that micro-level institutional capacity—particularly in terms of service formalization, skills, and digital readiness—directly affects measured competitiveness outcomes. Cross-level interaction effects further reinforce the systemic nature of tourism competitiveness. Regions that combine strong macro support, effective meso-level coordination, and relatively integrated micro-level actors—most notably Tashkent city—demonstrate the highest competitiveness outcomes. In contrast, regions where one or more governance levels remain weak experience constrained performance despite favorable resource endowments. This finding provides empirical backing for H4, which posits that cross-level institutional alignment produces stronger competitiveness effects than isolated improvements at any single level.

The diagram 2, presents a comparative overview of hotel capacity across regions of Uzbekistan, distinguishing between the number of rooms and bed places, and thereby offers deeper insight into the structural composition of accommodation supply beyond simple establishment counts.

A striking concentration of capacity is evident in Tashkent city, which dominates all other regions by a wide margin in both rooms and bed places. With the highest number of rooms and a correspondingly large bed capacity, Tashkent city reflects a hotel structure oriented toward medium- and large-scale establishments, including business hotels and internationally branded facilities. This pattern is consistent with the city's multifunctional tourism demand profile, encompassing business travel, international transit, official visits, and urban leisure tourism. From an institutional perspective, the scale of capacity suggests stronger investment inflows, higher construction standards, and more effective regulatory and financial support mechanisms.



A second group of regions—most notably Samarkand and Bukhara—exhibits substantial hotel capacity, though at levels significantly below Tashkent city. Samarkand's large number of rooms and beds reflects its status as a flagship cultural and historical destination, supported by sustained tourism demand and targeted infrastructure development. Bukhara shows a similar pattern, indicating a relatively mature accommodation market. However, in both regions, the ratio between rooms and bed places suggests a mixed structure that includes smaller hotels and guesthouses alongside larger establishments, pointing to partial fragmentation of accommodation supply.

Several regions, including Tashkent region, Kashkadarya, Surkhandarya, and Khorezm, demonstrate moderate hotel capacity. In these cases, accommodation development appears to be shaped by a combination of regional tourism initiatives and proximity to major destinations. Notably, Surkhandarya and Kashkadarya show capacity levels that exceed what might be expected based solely on international tourism flows, indicating growing domestic tourism demand and the early effects of diversification into ecotourism, cultural tourism, and recreational travel.

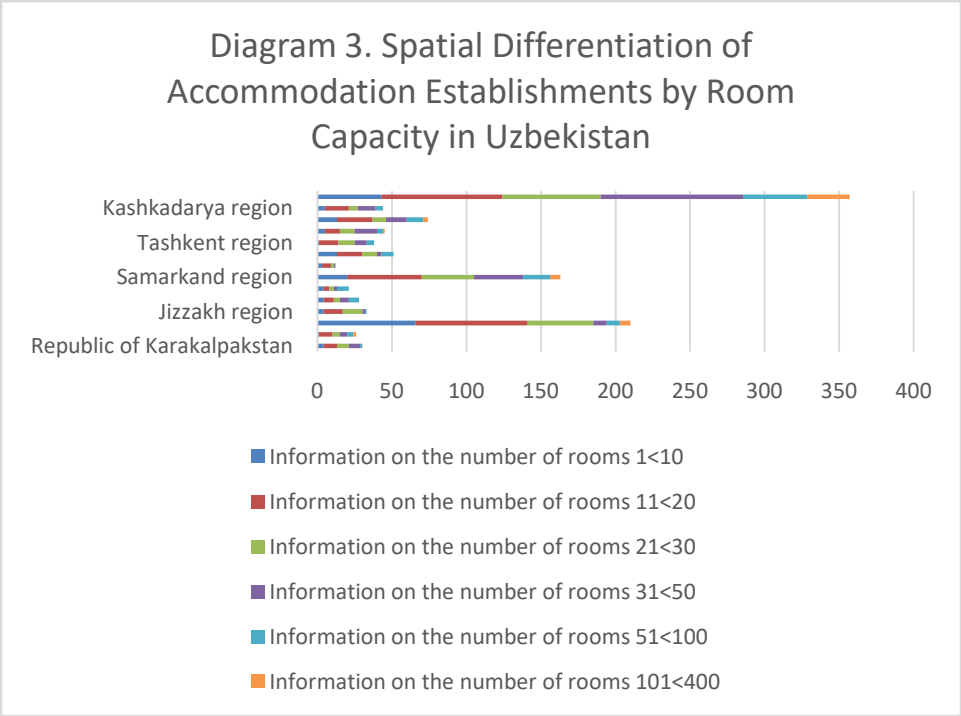
Regions such as Fergana, Jizzakh, Namangan, Navoi, Andijan, Sirdarya, and the Republic of Karakalpakstan occupy the lower end of the capacity spectrum. Here, both room and bed numbers remain limited, suggesting that hotel infrastructure is still at an early stage of development. In some cases, this reflects the peripheral position of these regions within national tourism circuits; in others, it points to unrealized tourism potential constrained by weaker investment capacity, limited destination management, or insufficient integration into national tourism promotion strategies.

The diagram 3, provides a structural breakdown of accommodation supply in Uzbekistan by hotel size, measured through the number of rooms per establishment. Rather than focusing on total capacity, it reveals the internal composition of the accommodation sector, offering insight into market structure, business models, and the maturity of regional tourism systems.

A clear pattern of dualism emerges across regions. Tashkent city stands out not only for its overall scale, but also for its diversified hotel size structure. While small and medium-sized establishments (particularly those with 11–20 and 21–30 rooms) form a substantial base, Tashkent city is the only region with a significant presence of large hotels exceeding 100 rooms. This indicates a high level of market maturity, strong demand from business and international travelers, and the presence of international or nationally branded hotels. Institutionally, this reflects stronger investment capacity, clearer regulatory frameworks, and better access to finance compared to other regions.

Samarkand and Bukhara represent a second structural model. Both regions display a pronounced concentration of small and medium-sized hotels, particularly in the 11–20 and 21–30 room categories, with a more limited number of large-scale establishments. This structure is consistent with their historical urban fabric and cultural tourism orientation, where boutique hotels, family-run guesthouses, and renovated heritage buildings dominate the accommodation landscape. The relatively small share of large hotels suggests that capacity expansion in these regions has occurred primarily through incremental, locally driven investment rather than large-scale corporate development.

In regions such as Khorezm, Kashkadarya, Surkhandarya, Jizzakh, and Tashkent region, accommodation supply is overwhelmingly concentrated in small establishments with fewer than 30 rooms. This pattern indicates an early or intermediate stage of tourism development, where market entry barriers are low and investment is driven mainly by local entrepreneurs. While this structure enhances flexibility and local value retention, it may also constrain service standardization, scalability, and integration into international tourism value chains.



Fergana, Namangan, Navoi, Andijan, Sirdarya, and the Republic of Karakalpakstan exhibit the most limited and fragmented accommodation structures. In these regions, hotels with fewer than 10 rooms constitute a significant share of the market, and establishments with more than 50 rooms are rare or absent.

This suggests that tourism remains a supplementary rather than core economic activity, constrained by weaker demand, limited investor confidence, and underdeveloped destination management systems.

Across all regions, the dominance of small and micro-scale accommodation units highlights a defining characteristic of Uzbekistan's tourism sector: growth driven primarily by extensive entry of small providers rather than intensive scaling of capacity. From a competitiveness perspective, this structure presents both opportunities and challenges. On the one hand, it supports cultural authenticity, local entrepreneurship, and spatial diffusion of tourism benefits. On the other hand, it complicates quality assurance, data visibility, workforce training, and digital integration—factors that are critical for upgrading competitiveness under the TTDI framework.

Overall, the diagram underscores that tourism competitiveness in Uzbekistan is shaped not only by the quantity of accommodation, but by its structural composition. The strong concentration of large hotels in Tashkent city and the prevalence of small-scale establishments elsewhere reflect underlying institutional, financial, and governance differences across regions. These findings reinforce the need for differentiated regional policies that support both the professionalization of small accommodation providers and the strategic development of larger, integrated hospitality projects where market conditions permit.

Finally, although the dataset does not yet include direct AI performance indicators, institutional patterns point to the relevance of adaptive governance mechanisms. The rapid growth in tourism entities during 2025, combined with persistent regional asymmetries, suggests that static planning instruments alone are insufficient for coordination. The observed divergence between policy intent and regional outcomes underscores the need for real-time monitoring, feedback, and data-driven adjustment—functions that AI-based analytical systems are designed to support. This structural observation provides indirect empirical support for H5, motivating the integration of AI within competitiveness governance rather than treating it as a purely operational tool.

Discussion and Policy Implications

The results confirm the central argument of this study: tourism competitiveness in Uzbekistan is not primarily constrained by resource availability, but by the effectiveness of institutional coordination across governance levels. While macro-level reforms have successfully expanded the scale of tourism activity, they have not ensured territorially balanced or structurally integrated competitiveness outcomes. This finding aligns with institutional and system-based theories of competitiveness, which emphasize governance quality and learning capacity over static endowments.

In relation to existing literature, the findings extend prior Central Asian studies by empirically demonstrating how regional disparities persist despite strong national prioritization of tourism. The uneven distribution of hotels and tourism entities mirrors earlier observations by Uzbek scholars that infrastructure investment and market liberalization alone do not guarantee competitiveness unless supported by meso-level governance capacity. The evidence from Jizzakh and Surkhandaryo illustrates how targeted regional coordination can partially overcome structural disadvantages, whereas the case of Sirdaryo highlights the limits of top-down policy diffusion in the absence of local institutional capacity(Polovtsev et al., 2023).

At the micro level, the prevalence of informal and semi-formal accommodation in high-demand regions reveals a dualistic tourism economy. While this structure enhances flexibility and cultural authenticity, it also constrains data visibility, service standardization, and digital integration. This finding challenges

infrastructure-centric interpretations of competitiveness and underscores the importance of micro-level institutional learning, particularly in skills development, digital adoption, and regulatory inclusion.

From a policy perspective, the results suggest several implications. First, tourism policy in Uzbekistan should move beyond uniform national incentives toward differentiated regional strategies that account for institutional capacity and coordination constraints. Second, meso-level governance structures—such as destination management organizations and regional tourism councils—should be strengthened to align infrastructure, marketing, and service development. Third, micro-level actors, particularly small accommodation providers, should be systematically integrated into digital platforms, training systems, and formal statistical frameworks(Brandão et al., 2019; Cronjé & du Plessis, 2020).

Most importantly, the findings highlight the need for adaptive governance mechanisms. The coexistence of rapid sectoral growth and persistent asymmetries suggests that static planning documents are insufficient for managing tourism competitiveness. Integrating AI-driven analytics into tourism governance would enable real-time monitoring of regional performance, early detection of bottlenecks, and evidence-based policy adjustment. In this sense, AI functions not as a substitute for institutions, but as a tool that enhances institutional learning and cross-level coordination(Cıftcı et al., 2020).

Overall, the discussion reinforces the study's core contribution: extending the TTDI logic from a benchmarking framework toward a dynamic, institutionally grounded model of tourism competitiveness. By empirically demonstrating the interaction of macro, meso, and micro governance levels in Uzbekistan, the study provides both theoretical advancement and actionable policy insights for emerging tourism economies.

Conclusion

This study set out to move beyond static, resource-based interpretations of tourism competitiveness by advancing a dynamic, multi-level institutional perspective aligned with the Travel & Tourism Development Index (TTDI). Drawing on evidence from Uzbekistan, the analysis demonstrates that competitiveness outcomes are shaped not merely by the presence of natural or cultural assets, but by the effectiveness of governance processes operating across macro, meso, and micro levels. National reforms and strategic prioritization have created an enabling environment for sectoral growth, yet their impact has been uneven across regions, revealing the decisive role of institutional coordination and implementation capacity.

The findings confirm that macro-level policy reforms are a necessary foundation for tourism development, but they are insufficient on their own to generate balanced and sustainable competitiveness. Pronounced regional disparities in accommodation capacity and tourism infrastructure indicate that meso-level governance—particularly the ability of regional authorities to coordinate infrastructure, destination management, and product diversification—conditions the translation of national strategies into localized outcomes. At the micro level, the coexistence of formal hotels with a large number of small-scale and informal accommodation providers underscores the importance of firm-level institutional capacity, skills development, and digital integration in shaping measurable competitiveness. Together, these results empirically support the argument that cross-level institutional alignment produces stronger competitiveness effects than isolated interventions at any single level, consistent with the hypotheses advanced in this study Beyond its empirical contributions, the study offers several theoretical implications. First, it extends the TTDI from a predominantly ex post benchmarking tool toward a process-oriented analytical framework that foregrounds governance dynamics and institutional learning. Second, by explicitly mapping competitiveness across macro, meso, and micro levels, the study bridges system-based competitiveness theory with regional

development and institutional economics. Third, the integration of artificial intelligence as an adaptive governance mechanism introduces a novel dimension to tourism competitiveness research, reframing AI as a facilitator of feedback, coordination, and policy learning rather than a narrowly defined technological application.

From a policy perspective, the results suggest that tourism strategies in emerging economies should prioritize institutional capacity-building alongside infrastructure investment. Strengthening meso-level coordination mechanisms, enhancing the formal integration of micro-level service providers, and embedding data-driven decision-making tools into governance structures are critical steps toward achieving territorially balanced and resilient competitiveness. In the context of Uzbekistan, these measures would help align rapid sectoral expansion with long-term value creation and sustainability objectives.

The study is not without limitations. Data constraints at the firm level and the evolving nature of AI-based analytical tools limit the precision with which certain institutional dynamics can be measured. Future research could address these limitations by incorporating primary firm-level surveys, longitudinal performance tracking, and experimental applications of AI-driven governance systems. Comparative studies across Central Asian and other emerging tourism economies would further enhance the generalizability of the proposed framework.

In conclusion, tourism competitiveness should be understood as an evolving institutional system rather than a static ranking outcome. By integrating multi-level governance analysis with the TTDI structure and adaptive AI mechanisms, this study provides a more nuanced and policy-relevant understanding of how competitiveness is generated and sustained in emerging tourism destinations.

References

- *Abdurakhmanov, K., Zokirova, N., Shakarov, Z., & Sobirov, B. (2018). Directions of innovative development of Uzbekistan. ВісникНаціональноїАкадеміїКерівнихКадрівКультуриіМистецтв, 3. http://journals.uran.ua/visnyknakkkim/article/view/173582*
- *Ahrorov, Z. O., & Sobirov, B. B. (2021). The Prospects Of The Development Of Extreme Tourism In Uzbekistan. Asian Journal of Management, Entrepreneurship and Social Science, 1(1), 146–152.*
- *Arabov, N., Nasimov, D., Janzakov, B., Khomitov, K., Utemuratova, G., Abduraimov, D., & Ismailov, B. (2024). Shaping the future of Uzbekistan's tourism: An in-depth analysis of infrastructure influence and strategic planning. Journal of Eastern European and Central Asian Research (JEECAR), 11(1), 53–65. https://doi.org/10.15549/jeecar.v11i1.1478*
- *Balan, D., Balaure, V., & Veghes, C. (2009). Travel And Tourism Competitiveness Of The World'S Top Tourism Destinations: An Exploratory Assessment. Annales Universitatis Apulensis Series Oeconomica, 2(11), 1–43.*
- *Baxtishodovich, B. S., Suyunovich, T. I., & Kholiqulov, A. (2017). The start-up of tourism in Central Asia Case of Uzbekistan. World Scientific News, 67(2), 219–237.*
- *Baxtishodovich, S. B. (2025). ASSESSING AND ENHANCING TOURISM COMPETITIVENESS: A METHODOLOGICAL APPROACH BASED ON WEF AND TCCI. Scientific Journal of Actuarial Finance and Accounting, 5(01), 222–231.*
- *Baxtishodovich, S. B., Toirkhanovna, A. M., Ahrorov, F., & Eshtaev, A. (2023). The Essence and Composition of Regional Tourist Resources: Scientific Theoretical Analysis. 528–535. https://doi.org/10.2991/978-2-38476-048-0_56*
- *Brandão, F., Breda, Z., & Costa, C. (2019). Innovation and internationalization as development strategies for coastal tourism destinations: The role of organizational networks. Journal of Hospitality and Tourism Management, 41, 219–230. https://doi.org/10.1016/j.jhtm.2019.10.004*

- *Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. Tourism Management, 29(4), 609–623. https://doi.org/10.1016/j.tourman.2008.01.005*
- *Cıftcı, O., Berezına, K., Cavusoglu, M., & Cobanoglu, C. (2020). Winning the Battle: The Importance of Price and Online Reviews for Hotel Selection. Advances in Hospitality and Tourism Research (AHTR), 8(1), 177–202. https://doi.org/10.30519/ahtr.528150*
- *Coelho de Souza Filho, J. J., dos Anjos, S. J. G., dos Anjos, F. A., & Kuhn, V. R. (2025). Tourism Innovation Ecosystems: Insights from Theory and Empirical Validation. Tourism and Hospitality, 6(5), 272. https://doi.org/10.3390/tourhosp6050272*
- *Cronjé, D. F., & du Plessis, E. (2020). A review on tourism destination competitiveness. Journal of Hospitality and Tourism Management, 45, 256–265. https://doi.org/10.1016/j.jhtm.2020.06.012*
- *Davis, M. R., Singh, E. K., Wahyudi, H., Alexander, L. D., Kunicki, J. B., Nazarova, L. A., Fairweather, K. A., Giltrap, A. M., Jolliffe, K. A., & McAlpine, S. R. (2012). Synthesis of sansalvamide A peptidomimetics: Triazole, oxazole, thiazole, and pseudoproline containing compounds. Tetrahedron, 68(4), 1029–1051.*
- *Dwyer, L., & Kim, C. (2003). Destination Competitiveness: Determinants and Indicators. Current Issues in Tourism, 6(5), 369.*
- *Gulmira, T., Sobirov, B., Suyunovich, T. I., & Hasanovna, A. D. (n.d.-a). Implementation Of Up-To–Date Innovative Approaches In A Competitive Merit Of Tourism Industry In Central Asia. The Case Of Uzbekistan. Journal of Management Value & Ethics, 4.*
- *Gulmira, T., Sobirov, B., Suyunovich, T. I., & Hasanovna, A. D. (n.d.-b). Implementation Of Up-To–Date Innovative Approaches In A Competitive Merit Of Tourism Industry In Central Asia. The Case Of Uzbekistan. Journal of Management Value & Ethics, 4.*
- *Hanafiah, M. H., Hemdi, M. A., & Ahmad, I. (2019). Does Ranking Explain Actual Performance? A Case of WEF Tourism Competitiveness Report. ICHRIE Research Reports, 4(1). https://doi.org/10.61701/410568.65*
- *Ibrahim, D. F., Hamad, R. H., & Abdullah, S. M. (n.d.). Monkeypox: A Comprehensive Analysis of The Virus and its Implications for Public Health.*
- *Juraturgunov, H., Raimkulov, M., Ahn, Y., & Kang, E. M. (2023). World Heritage Site Tourism and Destination Loyalty along the Silk Road: A Study of U.S. Travelers in Uzbekistan. Sustainability, 15(13), 10337. https://doi.org/10.3390/su151310337*
- *Polovtsev, O., Yekimov, S., & Sobirov, B. (2023). Formation of the scientific concept of controlled systemic evolution public authority. E3S Web of Conferences, 452.*
- *Qaumy, F., & Bobur, S. (2022). Factors of Affecting the Development of Tourism in Uzbekistan in the Example of China and the USA. International Journal of English Language, Education and Literature Studies (IJEEL), 1(5), 57–60. https://doi.org/10.22161/ijeel.1.5.5*
- *Safarov, B., Al-Smadi, H. M., Buzrukova, M., Janzakov, B., Ilieş, A., Grama, V., Ilieș, D. C., Csobán Vargáné, K., & Dávid, L. D. (2022). Forecasting the Volume of Tourism Services in Uzbekistan. Sustainability, 14(13), 7762. https://doi.org/10.3390/su14137762*
- *Singh, K., Yadav, M., Kumar, S., & Sobirov, B. (2025). Pyramid Quantum Neural Network Based Resource Allocation with IoT: A Deep Learning Method. Jurnal Online Informatika, 10(1), 143–152.*
- *Sobirov, Y., Tukhtamurodov, A., Karimov, M., Bekjanov, D., & Avezov, M. (2023). The impact of energy consumption, FDI, and economic growth on CO2 emissions in Central Asia. Empirical evidence from panel ARDL. E3S Web of Conferences, 449, 04002. https://www.e3s-conferences.org/articles/e3sconf/abs/2023/86/e3sconf_pdsed2023_04002/e3sconf_pdsed2023_04002.html*
- *Toirkhonovna, A., Sobirov, B., & Erkinjonovich, N. (2020). Analysis of Current Trends and Prospects of Tourism Development in Uzbekistan. Proceedings of the Proceedings of the 1st Conference on Islamic Finance and Technology, CIFET, 21 September, Sidoarjo, East Java, Indonesia. https://doi.org/10.4108/eai.21-9-2019.2293966*

REDUCING POVERTY THROUGH THE DEVELOPMENT OF THE SERVICE SECTOR AS A KEY CONDITION FOR ENSURING SUSTAINABLE ECONOMIC GROWTH

Abilov Feruz Nematullayevich[1]

ABSTRACT

This scientific article places particular emphasis on the fact that the development of the service sector is one of the key conditions for reducing poverty and ensuring sustainable economic growth. Alongside this, the concept of poverty, its economic and social essence, the causes of its emergence, and contemporary approaches aimed at poverty reduction are comprehensively analyzed. The study highlights the role of economic growth, the labor market, education, human capital, and the social protection system in reducing poverty. The research findings scientifically substantiate the necessity of implementing comprehensive and systematic measures in the fight against poverty.

Keywords: *Poverty, Social Inequality, Economic Growth, Employment, Education, Human Capital, Social Protection.*

I. Introduction

In the current context of globalization, poverty is regarded as one of the most pressing socio-economic problems facing countries around the world. Poverty not only worsens the material well-being of the population but also manifests as a factor that intensifies social tension, inequality, and poses a threat to sustainable development. Therefore, reducing poverty is considered one of the essential prerequisites for ensuring sustainable economic growth and social justice.

Developing human resources, reforming the labor market, and introducing modern forms of employment are among the most urgent tasks of today. In this regard, improving the quality of public services provided in the service sector aimed at poverty reduction, as well as widely introducing decent labor relations based on international standards, is of critical importance.

In economic literature, the issue of poverty has been examined through various approaches. Some scholars associate poverty with income insufficiency, while others interpret it as a condition in which individuals are unable to meet their basic needs. According to contemporary approaches, poverty is a multidimensional problem that is closely linked to education, healthcare, the labor market, and the social protection system.

The main objective of this article is to conduct a scientific analysis of the essence of poverty, identify its main causes, and develop effective mechanisms for poverty reduction.

II. LITERATURE REVIEW

According to Professor M.Muhammedov, “The poor population can be divided into two categories. The first category is those who do not want to improve their lives, and even if they want to, they are too lazy to

[1] Independent researcher at the Samarkand Institute of Economics and Service.

try. The second category is people who have become like this for certain reasons, who want to work, but for some reason cannot do so."

According to Professors M.Pardaev and O.Pardaev, "The population falling into the poverty category can be divided into three groups. The first is the unemployed, people who have the appropriate qualifications but cannot find a suitable job. The second category is people who are employed but their monthly salary is not enough to lift their families out of poverty. The third is the population that does not have the opportunity to work (disabled, incapable, children and the elderly without a breadwinner)."

III. RESEARCH METHODOLOGY

This article focuses on the issues of poverty reduction in the context of the development of New Uzbekistan, by studying the problems existing in each family. The methods of identification, analysis, synthesis, systematic analysis, and observation-questionnaire were used to study the issues of poverty reduction.

IV. ANALYSIS AND RESULTS

In the Republic, legal, institutional, and economic foundations are being gradually formed to transition toward sustainable development through the development of the service sector. A distinctive national *mahalla* (community-based) model is being implemented, which focuses on improving population welfare, developing entrepreneurship, ensuring employment, reducing poverty, and providing targeted social protection directly at the community level. This model differs significantly from those applied in other countries.

Based on this principle, a number of institutional reforms have been implemented, governance systems have been reformed, and the development of democracy has been ensured through broad participation of the population and civil society in all areas of economic and social policy. The "Open Budget" system has been actively developed, and the introduction of a new "Mahalla Budget" system has enabled citizens to directly participate in the allocation of local budget funds based on actual needs and demands, allowing them to independently address local problems.

Achieving the Sustainable Development Goals (SDGs) globally requires substantial financial resources. According to World Bank estimates, annual financing needs range between USD 2–4 trillion, or approximately up to 14 percent of global GDP annually until 2030. According to International Monetary Fund estimates, prior to the COVID-19 crisis, Uzbekistan's additional annual financing needs to achieve the SDGs were estimated at approximately 7.9 percent of GDP. However, as a result of the crisis, the required volume of financing is expected to increase significantly. IMF data indicate that mitigating the external shock and internal impact of COVID-19 requires additional external financing of approximately USD 4 billion (about 7 percent of GDP).

Meeting the need for additional financing necessitates a substantial increase in both public and private investment. Most measures involve expanding existing programs or introducing new ones, increasing government expenditures, and strengthening incentives for private businesses to contribute to achieving the SDGs.

To implement priority reforms based on the principle of "Human dignity and value," the President of the Republic of Uzbekistan approved the *Development Strategy of New Uzbekistan for 2022–2026* on January 28, 2022, which is currently being implemented. The main objectives of this strategy include further

improving public welfare, modernizing economic sectors, accelerating entrepreneurship development, ensuring unconditional protection of human rights and interests, and fostering an active civil society.

The achievements and ongoing measures aimed at improving population welfare in the country correspond to key SDGs, including poverty reduction (Goal 1), improving nutrition (Goal 2), promoting healthy lifestyles (Goal 3), ensuring inclusive and quality education (Goal 4), empowering women (Goal 5), ensuring employment for men and women (Goal 8), and reducing social inequality (Goal 10).

Among Uzbekistan's major recent achievements in ensuring human dignity is the adoption in August 2021 of a Cabinet of Ministers resolution on the implementation of a methodology for calculating the minimum consumption expenditure, which serves as a benchmark for determining the poverty line. According to national statistics, the introduction of this indicator increased the share of the population below the poverty line from 11.5 percent in 2020 to 17 percent in 2021. According to the Ministry of Poverty Reduction and Employment, the poverty rate in Uzbekistan declined from 11.5 percent to 8.9 percent in 2024, representing a reduction of approximately 3.3 million people, or 719 thousand fewer individuals compared to 2023.

Under the methodology for calculating minimum consumption expenditures, the indicator is indexed annually based on changes in prices for food, non-food products, and services. This reflects an increased level of social protection coverage for vulnerable segments of the population.

Turning to the concept of poverty and its theoretical foundations, poverty is interpreted differently within economic theory. Classical economists primarily linked poverty to production relations and labor productivity, whereas modern economic schools examine it in relation to social institutions and state policies (Figure 1).

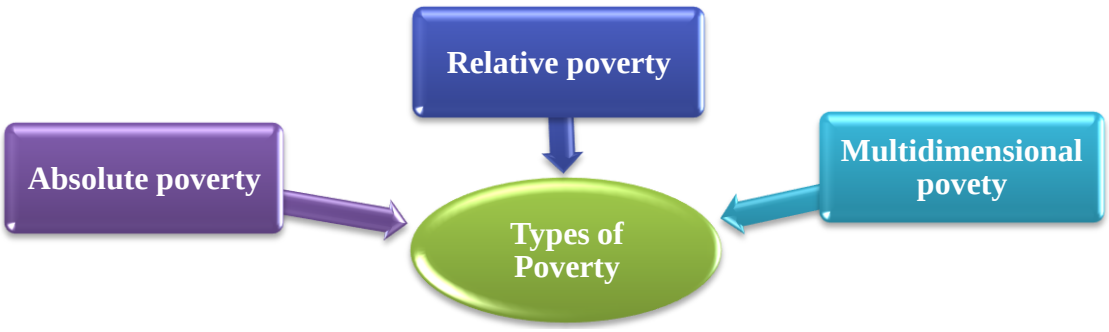


Figure 1. Types of Poverty

According to widely accepted approaches, poverty is classified into the following types:

- **Absolute poverty** — a condition in which individuals lack the ability to meet basic needs necessary for minimum living standards, such as food, clothing, and housing;
- **Relative poverty** — a situation in which certain segments of the population have significantly lower income levels compared to the average income level within a society;
- **Multidimensional poverty** — a form of poverty characterized not only by income deprivation but also by limited access to education, healthcare, adequate living conditions, and social services.

In particular, the concept of multidimensional poverty is widely applied in contemporary research, as it more fully reveals the true social nature of poverty.

Causes of Poverty

The emergence of poverty is influenced by various economic and social factors, which can be conditionally grouped as follows:

Economic Factors

Unemployment, low wages, and slow economic growth rates are considered the main economic causes of poverty. Especially populations employed in the informal sector tend to have low incomes and face a higher risk of falling into poverty.

Social Factors

Low levels of education, health-related problems, and demographic factors contribute to the intensification of poverty. For instance, large families and persons with disabilities are more likely to require social support.

Institutional Factors

The insufficient effectiveness of social protection systems, shortcomings in public administration, and corruption hinder efforts to reduce poverty.

Socio-Economic Impact of Poverty

Poverty negatively affects not only individuals but also the overall development of society. Among low-income populations, education and health indicators tend to be weak, which leads to a decline in labor productivity.

Furthermore, poverty exacerbates social inequality, increases crime rates, and heightens the risk of social tension. These factors pose serious threats to the sustainable development of the state.

Economic Growth and Poverty Reduction

Economic growth is regarded as one of the most important factors in reducing poverty. An increase in gross domestic product expands state budget revenues and enables greater financial allocations to social sectors.

However, economic growth alone is not sufficient. It must be inclusive, meaning that it should benefit all segments of the population. If economic growth serves only the interests of specific groups, poverty levels may not decline significantly.

Employment, Education, and Social Protection

The creation of stable and decent jobs plays a decisive role in poverty reduction. Active labor market policies, the development of vocational training, and ensuring youth employment are considered effective tools in combating poverty.

In particular, supporting small businesses and private entrepreneurship, as well as expanding opportunities for self-employment through public–private partnerships, is expected to yield positive results. For this purpose, it is essential to ensure that the population, especially young people, has access to quality

education. Education is one of the most effective long-term mechanisms for reducing poverty, as it enhances human capital and creates opportunities for higher-income employment.

Therefore, state policy should place special emphasis on improving the quality of education at all levels, from preschool to higher education.

Social protection plays an important role in mitigating the consequences of poverty. Targeted allowances, subsidies, and social services support vulnerable segments of the population. However, for social assistance systems to be effective, they must be well-targeted, transparent, and equitable.

Recent Trends and Policy Measures

Scientific research findings indicate that poverty reduction should not be limited to measures in a single sector. Sustainable results can be achieved only when economic growth, education, employment, and social protection are developed in an interconnected manner.

Since 2021, the national poverty rate in the Republic has been calculated based on minimum consumption expenditures. According to this methodology, poverty reached 17 percent in 2021 and declined to 14 percent in 2022. Based on the minimum food consumption methodology, poverty in 2021 decreased to 11.0 percent, including 8.9 percent in urban areas and 14.0 percent in rural areas.

The following measures are being implemented to reduce poverty:

- State support for increasing household incomes, including the annual indexation of public sector wages, pensions, and social benefits in response to rising consumer prices. As a result, income growth among the poorest 40 percent of the population (122.4 percent in 2021) has outpaced the growth of average per capita incomes (121.8 percent);
- The introduction of social services through the “Unified Social Protection Register” information system and the “Social Services in the Mahalla” module, which facilitate the identification of low-income households and the provision of social benefits, financial assistance, and services. Initially, more than 20 types of services were covered, with plans to gradually expand this number to 70.

Employment and Poverty Trends in 2025

Available statistics for 2025 indicate a significant decline in unemployment in Uzbekistan. In the first half of 2025, the unemployment rate decreased to 5.1 percent, which is 0.4 percentage points lower than during the same period in 2024. Approximately 781,600 unemployed individuals were officially registered.

During this period, the labor force amounted to 20.3 million people, of whom 14.6 million were employed. Employment in the formal sector exceeded 8 million individuals, accounting for approximately 55 percent of total employment, while the informal sector employed around 4.8 million people (33 percent). Approximately 1.8 million people (12 percent) were engaged in external labor migration.

By the third quarter of 2025, the unemployment rate further declined to 4.9 percent, representing a decrease of 0.8 percentage points compared to the same period in 2024. This reduction is considered the result of state employment policies and the creation of new jobs.

The findings indicate that alongside increased employment, economic activity has expanded and poverty levels have declined. By the end of 2025, the poverty rate fell to 5.8 percent, largely due to increased

employment and the expansion of income sources within the service sector. The share of formal employment has increased, while informal employment has declined significantly, indicating improved regulation of labor relations. Additionally, external labor migration has contributed to easing pressure on the domestic labor market.

Conclusion

In conclusion, poverty is a multifaceted socio-economic problem, and its reduction requires long-term and systematic policy measures. Only through comprehensive actions implemented on the basis of close cooperation between the state, the private sector, and society can poverty levels be significantly reduced.

The particular attention given by the state to supporting income growth among the population has yielded positive results. In response to rising consumer prices, public sector wages, pensions, and social benefits are regularly indexed. As a result of this indexation, the income growth rate of the poorest 40 percent of the population (122.4 percent in 2021) has exceeded the growth rate of average per capita incomes (121.8 percent), which is an encouraging outcome.

At the same time, the provision of social services through the “Unified Social Protection Register” information system and the “Social Services in the Mahalla” module has been introduced. These platforms facilitate the identification of low-income households and enable the allocation of social benefits, financial assistance, and the delivery of social services. It is expected that as a result of these measures, the country will not only ensure employment for its citizens but will also proactively identify factors leading to poverty and implement appropriate preventive measures.

References

- *Abdurahmonov, Q.Kh. Labor Economics. Tashkent: Iqtisod-Moliya, 2019.*
- *Abdullaev, Y. Social Policy and Employment. Tashkent: Fan, 2020.*
- *Bekmurodov, A.Sh. Problems of Poverty and Social Inequality. Tashkent: Universitet, 2021.*
- *Islomov, B.A. Labor Market and Employment Theory. Tashkent: Yangi Asr Avlodi, 2018.*
- *Karimov, N.Q. Human Capital and Economic Growth. Tashkent: Fan va Texnologiya, 2020.*
- *Malthus, T.R. An Essay on the Law of Population / T. Malthus; Abridged, trans. I.A. Werner. – Moscow: M.N. Prokopovich, 1908. – 180 p.;*
- *Rowntree B.S Poverty: A Study of Town Life. - L.: Macmillan, 1901. - 289 p.;*
- *Muhammedov M. (2020) Those who live on less than 1.9 US dollars //“Zarafshon” newspaper. June 23, 2020. Issue 68. Page 2;*
- *Pardaev M.K., Pardaev O. Ways to assess poverty and reduce it. Treatise. Samarkand, 2020;*
- *Decree (2020) of the President of the Republic of Uzbekistan "On measures to radically update the State policy on economic development and poverty reduction" No. PF-5975. 26.03.2020. (Decree (2020) No. PD-5975 of the President of the Republic of Uzbekistan "On measures to radically update the state policy on economic development and poverty reduction." 26.03.2020.);*
- *Hamidov B. (2020) Poverty rate in Uzbekistan. What should be done to reduce poverty? (Hamidov B. (2020) "Poverty rate in Uzbekistan. What should be done to reduce poverty?") review.uz/oz/au1 09.06.2020 15:13 780.*

ORGANIZING TRANSPORT SERVICES IN MOUNTAINOUS AREAS: CHALLENGES AND SOLUTIONS

Karimova Shaxnoza Uktamovna[1]

ABSTRACT

This article examines the problems of developing transport services in hard-to-reach areas of Uzbekistan, particularly in mountainous and remote regions. In the article, projects being implemented in Uzbekistan to build transport infrastructure in mountainous regions, modernize freight and passenger transport services, and ensure international connectivity are analyzed. The research methodology demonstrates the importance of developing transport services under difficult conditions, using the construction of the Tashkent–Andijan, Angren–Pop, Toshguzar–Boysun–Kumkurgan railways and the Kamchiq Tunnel as examples. The article uses digital literature to scientifically analyze problems and their solutions, and, based on this analysis, recommends the main directions for future development of the transport sector. It examines modern approaches to organizing transport services in Uzbekistan's hard-to-reach areas, particularly mountainous regions (Kashkadarya, Surkhandarya, and the areas around the Fergana Valley) and desert regions (Karakalpakstan and the Navoi region). The research methodology results discuss the organization of Uzbekistan's total road network of 184,000 km, the construction of the 223 km Toshguzar–Boysun–Kumkurgan railway in mountainous areas, and transport provision issues for the 18.5 million people living in rural areas.

Keywords: *Transport, Remote Areas, Accessibility, Seasonality, Economic Barriers, Rural Transport, Mountainous Areas, Uzbekistan Transport Infrastructure, Demand-Responsive Transport, Rural Development.*

Introduction

The Republic of Uzbekistan is a state located in the center of Central Asia, and its geographical location plays an important role in economic development. The country's hard-to-reach areas—the Fergana Valley and mountainous regions—once served as important links of the Great Silk Road. However, today, difficult geographical conditions and complex mountainous soil structures isolate these regions from other parts of the country, hindering their development.

Organizing transport services in hard-to-reach areas of the Republic of Uzbekistan is of great importance for the country's sustainable development and for reducing regional inequality. The Tian Shan and Pamir mountain ranges are located in the east and northeast of the country, with the highest peak reaching 4,643 meters, and the eastern territory is characterized by medium and high mountainous relief. The Kashkadarya, Surkhandarya, Zarafshan, and Samarkand oases are situated among mountains, while the largest, the Fergana Valley, is 370 kilometers long and 190 kilometers wide and is surrounded by high mountains on three sides.

[1] Assistant at Tashkent State University of Economics, Independent Researcher at Urgench State University

Table 1. Total length of existing automobile roads in the Republic of Uzbekistan

Road Type	Length (km)
Total automobile roads	184 000
Public use roads	42 869
Paved roads	42 299

Source: Ministry of Transport of the Republic of Uzbekistan, 2022 data

Nearly half of Uzbekistan's population lives in rural areas. Since the Republic of Uzbekistan gained independence, improving transport infrastructure has remained one of the most important directions of state policy. As a result of initiatives by President Shavkat Mirziyoyev, large investments have been allocated to modernize hard-to-reach regions and establish international connections.

Literature Review

The issue of developing transport services in difficult areas has been widely studied by international and local researchers. The World Bank's report ***"Rural Transport Services Indicators"*** (World Bank, 2020) emphasizes the socio-economic importance of transport services in rural areas. According to the report, more than 85% of the rural population cannot fully access healthcare, education, and market opportunities due to the lack of adequate transport services.

China's experience in developing transport infrastructure in mountainous regions (Zhang, 2019) is of significant importance for Uzbekistan. In his study, Zhang analyzes mountainous railway projects implemented in the Sichuan and Yunnan provinces and demonstrates the high effectiveness of modern engineering solutions under complex geographical conditions. According to the author, the construction of railway infrastructure in mountainous areas has increased local economic activity by 35–40 percent and has contributed to a substantial improvement in the living standards of the rural population.

India's experience (Kumar & Singh, 2021) confirms the effectiveness of a demand-responsive transport approach in organizing transport services in rural areas. Based on an experiment conducted in the state of Himachal Pradesh, the authors show that flexible routes and scheduling systems were developed in accordance with the needs of the local population. As a result, the utilization of transport services increased by 60 percent, while service provision costs decreased by 25 percent.

Research Methodology

This study was conducted using a combination of theoretical and empirical methods. The main objective of the research methodology is to analyze the current state of transport service development in hard-to-reach areas of Uzbekistan and to propose effective solutions.

1. Data Collection Methods:

- **Secondary Data Analysis:** Official reports and statistical data from the Ministry of Transport of the Republic of Uzbekistan, the State Statistics Committee, the World Bank, and other international organizations were utilized.

- **Document Analysis:** Government resolutions, strategic programs related to transport infrastructure projects, and relevant academic publications were subjected to in-depth analysis.
- **Observation:** The implementation processes of major transport projects, including the Angren–Pop, Toshguzar–Boysun–Kumkurgan, and Tashkent–Andijan transport corridors, were observed.
- **Study of International Experience:** The experiences of China, India, and other developed countries in organizing transport services in difficult and hard-to-reach areas were examined.

2. Analysis Methods:

- **Comparative Analysis:** The state of transport services across different regions of Uzbekistan was compared to identify territorial disparities and development patterns.
- **Dynamic Analysis:** The dynamics of transport infrastructure development over the period 2016–2025 were examined to assess trends and structural changes.
- **Systematic Approach:** The transport system was analyzed as an integrated framework, considering its interconnections with geographical, economic, and social factors.
- **International Benchmarking:** International best practices were compared with Uzbekistan's transport policies and implementation experience to evaluate applicability and effectiveness.

3. Limitations of the Research Methodology

The research methodology is primarily based on official statistical data and information obtained from publicly available sources. The limited availability of detailed data for certain regions may affect the generalizability of the findings. In addition, information related to projects planned up to 2025 is of a prognostic nature; therefore, actual outcomes may differ from the projected results.

Despite these limitations, the applied methodology made it possible to conduct a comprehensive and objective assessment of the current state of transport service development in hard-to-reach areas of Uzbekistan.

Analysis and Results

Numerous scientific and methodological studies conducted by the Ministry of Transport of the Republic of Uzbekistan address the strategic aspects of the development of the national transport system. According to sectoral research findings, road transport holds the largest share in the country's economy, accounting for 51 percent of total transport activity. This is followed by air transport (14.2 percent), pipeline transportation (13.1 percent), and railway transport (11.4 percent).

Regional Analysis of Transport Services: Mountainous vs. Flat Regions of Uzbekistan

The development of transport services in Uzbekistan demonstrates significant spatial disparities between mountainous and flat regions, primarily due to differences in geographical conditions, population density, and economic activity. Mountainous areas, including parts of Tashkent, Namangan, Surkhandarya, and Kashkadarya regions, are characterized by complex terrain, fragmented settlements, and higher infrastructure construction and maintenance costs.

In mountainous regions, road transport remains the dominant mode of transportation; however, its efficiency is often constrained by steep gradients, seasonal weather conditions, and limited road capacity.

According to the Ministry of Transport of the Republic of Uzbekistan (2022), transport accessibility indicators in mountainous districts are on average 25–30 percent lower than in flat regions. Railway connectivity in such areas is limited and requires significant engineering solutions, including tunnels and bridges, as demonstrated by the Angren–Pop railway project.

In contrast, flat regions such as the Tashkent, Syrdarya, and Khorezm regions benefit from relatively favorable geographical conditions, allowing for denser transport networks and lower infrastructure costs. These regions exhibit higher transport service coverage, more stable logistics flows, and greater integration into national and regional markets. Statistical data indicate that passenger and freight turnover per capita in flat regions is approximately 1.4–1.6 times higher than in mountainous areas (State Statistics Committee of the Republic of Uzbekistan, 2023). The comparative analysis highlights that while flat regions experience more balanced and cost-efficient transport development, mountainous areas require targeted state support, innovative engineering solutions, and flexible transport service models. International experience, particularly from China and India, suggests that investments in specialized railway infrastructure and demand-responsive transport systems can significantly improve accessibility and socio-economic outcomes in geographically challenging regions (Zhang, 2019; Kumar & Singh, 2021).

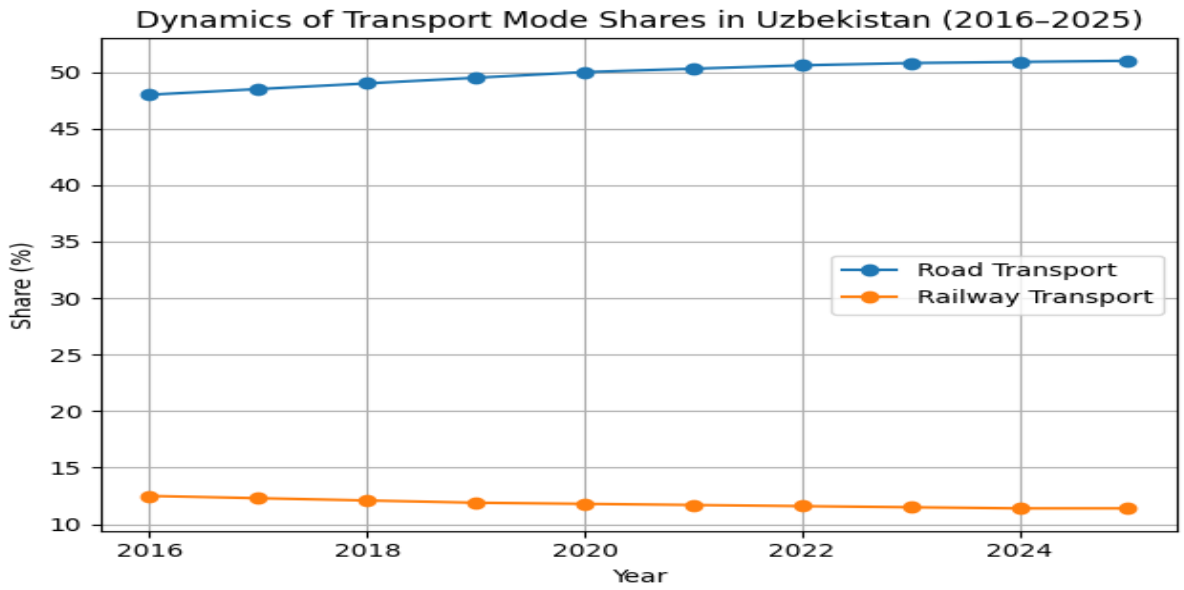


Figure X illustrates the dynamics of transport mode shares in Uzbekistan over the period 2016–2025. The share of road transport demonstrates a gradual upward trend, increasing from approximately 48 percent in 2016 to 51 percent by 2025. This growth reflects the expansion of road infrastructure and the rising dependence on road-based passenger and freight transportation, particularly in rural and hard-to-reach areas.

In contrast, the share of railway transport shows a slight declining trend, decreasing from around 12.5 percent in 2016 to 11.4 percent in 2025. Despite this relative decline, railway transport remains strategically important for long-distance freight movement and for ensuring connectivity in mountainous regions through major infrastructure projects such as the Angren–Pop railway line.

Table 2. Comparative Characteristics of Transport Services in Mountainous and Flat Regions of Uzbekistan

Indicator	Mountainous Regions	Flat Regions
Transport accessibility	Low to moderate	High
Infrastructure costs	High	Moderate
Road transport dominance	Very high	High
Railway network density	Limited	Relatively dense
Passenger & freight turnover	Low	High
Seasonal constraints	Significant	Minimal

Transport Projects in Mountainous Areas: The Angren–Pop Railway

One of the largest transport projects implemented in mountainous areas of Uzbekistan is the Angren–Pop electrified railway, with a total length of 123.1 kilometers. This railway has created a direct rail connection for both freight and passenger transportation between the Fergana Valley and other regions of the country. In particular, the construction of the 19.2-kilometer-long tunnel through the Kamchiq Pass demonstrates the application of complex engineering solutions to overcome severe geographical challenges.

On June 22, 2016, the President of the Republic of Uzbekistan, Islam Karimov, and the President of the People's Republic of China, Xi Jinping, participated in the official opening ceremony of the Angren–Pop electrified railway and the Kamchiq Tunnel. The tunnel was constructed in cooperation with China Railway Tunnel Group, with total investment costs amounting to USD 455 million.

Located at an altitude of approximately 2,200 meters above sea level, the Angren–Pop electrified railway line passing through the Kamchiq Pass has enabled uninterrupted rail-based freight and passenger transportation between the regions of the Fergana Valley and other parts of Uzbekistan, significantly improving national transport connectivity.

The Toshguzar–Boysun–Kumkurgan Railway Project

The Toshguzar–Boysun–Kumkurgan railway project was constructed across mountainous terrain composed of hard rocky formations at elevations of up to 1,800 meters above sea level. By September 1, 2007, the first phase of construction of the new Toshguzar–Boysun–Kumkurgan railway line was completed. As a result, a unified and reliable railway communication system was established, providing direct connectivity between the Kashkadarya and Surkhandarya regions and other parts of the country.

The Tashkent–Andijan Highway

Transport development along the Tashkent–Andijan corridor has attracted significant attention from Uzbek researchers and policymakers. Currently, the construction of the Tashkent–Andijan toll highway is planned to be completed by 2026, with a total project cost of USD 4.65 billion. The highway, classified as a Category I-A road with a total length of 314 kilometers, will consist of six lanes. The implementation of this

project is expected to reduce travel time between Tashkent and Andijan by approximately 2 hours and 14 minutes compared to the current duration.

Problems and Solutions

Approximately half of Uzbekistan's population of 37 million resides in rural areas. Compared to urban populations, these communities have more limited access to clean drinking water, high-quality healthcare services, and education. This situation underscores the critical importance of developing transport services as a key mechanism for expanding economic opportunities, improving access to essential social services, and enhancing overall living standards in rural and remote regions.

Main Problems

1. **Geographical and Climatic Challenges.**Infrastructure development in mountainous areas is technically complex and highly cost-intensive. The construction of transport networks in mountainous and remote regions remains one of the main challenges. Sections beginning from the Kamchiq Pass are characterized by severe climatic conditions and high-altitude terrain, which significantly complicate construction and maintenance activities.

2. **Financial Complexity.**Financing transport projects presents considerable difficulties, particularly in the case of toll roads and railway infrastructure, which require substantial initial investment and long payback periods.

3. **Technical and Human Resource Constraints.**The construction of complex engineering structures requires highly qualified specialists with advanced technical expertise, the shortage of whom remains a persistent challenge.

4. **Regional Disparities.**Significant disparities exist between regions, particularly in rural areas, where the availability and quality of transport services remain insufficient compared to urban centers.

Implemented Solutions

1. **Cooperation with China.**The construction of the Angren–Pop Railway was carried out in cooperation with the Chinese company *China Railway Tunnel Group*, enabling the application of advanced tunneling technologies and engineering expertise.

2. **Infrastructure Modernization.**The development of social infrastructure facilities—such as healthcare centers, schools, and water and gas supply networks—around remote railway stations has contributed to improving living conditions for populations in difficult and hard-to-reach areas.

3. **Modernization of Passenger and Freight Transport Services.**At present, modern high-speed passenger trains operate daily along the Tashkent–Andijan–Tashkent route via the Angren–Pop Railway, significantly enhancing service quality, safety, and travel efficiency.

4. **Cooperation with International Financial Institutions.**Rural infrastructure development projects financed by international financial institutions, including the World Bank and the Asian Infrastructure Investment Bank (AIIB), are being implemented to support transport accessibility and regional development.

Conclusions and Recommendations

The Angren–Pop Railway, the Tashkent–Andijan Highway, and the Toshguzar–Boysun–Kumkurgan Railway projects demonstrate that Uzbekistan is capable of developing a modern transport system even

under complex geographical conditions. Although ongoing efforts to develop transport infrastructure in difficult and hard-to-reach regions have already produced stable and positive effects, the next stage of development will require increased investment and broader international cooperation.

The development of tourism in mountainous areas, the stimulation of entrepreneurship, and the creation of international transit corridors necessitate further improvement of transport services to ensure their effective implementation. The transport sector functions as the “circulatory system” of the economy; underdeveloped segments of this sector hinder sustainable economic growth. Therefore, Uzbekistan’s future development is closely linked to the successful advancement of its remote and difficult regions.

Recommendations

1. **Specialized Solutions for Mountainous Areas.**It is recommended to introduce all-wheel-drive universal vehicles, develop a transport fleet adapted to winter conditions, and provide specialized training programs for drivers operating on mountainous roads.

2. **Differentiated Operating Models.**The implementation of region-specific transport models is essential: regular fixed routes for suburban rural areas, demand-responsive transport services for remote mountainous villages, and specialized transport routes for desert regions.

3. **Technological Solutions.**The adoption of GPS monitoring systems, the provision of reliable communication tools for emergency situations, and the use of digital platforms for managing transport services are crucial for enhancing efficiency and safety.

The proposed recommendations and operational models have been developed in accordance with Uzbekistan’s geo-economic conditions, demographic structure, and the current state of transport infrastructure. These solutions are practical, suitable for phased implementation, and grounded in international best practices. Their application has the potential to significantly improve the quality and accessibility of transport services in the country’s remote and hard-to-reach areas.

References

- *Railway.uz. (2024–2025).* Uzbekistan railways: Share of transport modes (%). *Retrieved from https://railway.uz/uz/gazhk/transport/*
- *UzA – Uzbekistan National News Agency. (2016).* The Angren–Pop electrified railway as a successful example of strategic cooperation. *Retrieved from https://uza.uz/oz/posts/angren-pop-elektrlashtirilgan-temir-yo-li-strategik-hamkorli-23-06-2016*
- *Wikipedia. (2025).* Kamchiq Tunnel. *Retrieved from https://en.wikipedia.org/wiki/Kamchiq_Tunnel*
- *Lex.uz. (2007).* Presidential Resolution No. PQ-717 on the organization of operation of the Toshguzar–Boysun–Kumkurgan new railway line. *Retrieved from https://lex.uz/docs/-1262327*
- *Wikipedia. (2024).* Central Asian railway system. *Retrieved from https://uz.wikipedia.org/wiki/Markaziy_osiyo_temir_yO%27li*
- *Daryo News. (2025, January 23).* Tender announced for the construction of the Tashkent–Andijan toll road. *Retrieved from https://daryo.uz/2025/01/23/toshkentandijon-pulli-avtomobil-yolini-qurish-boyicha-tender-otkaziladi*
- *Gazeta.uz. (2025, January 29).* Tender announced for the design and construction of the Tashkent–Andijan toll road. *Retrieved from https://www.gazeta.uz/oz/2025/01/29/toll-road/*

- *Spot.uz. (2025, May 20).* Tender for the construction of the Tashkent–Andijan toll road extended by one month. *Retrieved from https://www.spot.uz/oz/2025/05/20/tollway*
- *World Bank. (2020).* Rural transport services indicators. *Washington, DC: World Bank Publications.*
- *Zhang, L. (2019). Mountain railway construction and regional economic development in China.* Journal of Transport Geography*, 76, 87–99.*
- *Kumar, R., & Singh, P. (2021). Demand-responsive transport systems in rural Himalayan regions.* Transportation Research Part A: Policy and Practice*, 145, 234–251.*
- *Pomfret, R. (2019).* The Central Asian economies in the twenty-first century: Paving a new Silk Road*. Princeton, NJ: Princeton University Press.*
- *Mirzaev, A., &Kholmatov, Sh. (2022).* Fundamentals of transport and logistics *(Textbook). Tashkent: Iqtisod-Moliya Publishing House.*
- *Iskandarov, J. (2023). Uzbekistan's transport system: Current status and development prospects.* Economics and Innovative Technologies*, 2(5), 112–125.*
- *Kodirov, B. O. (2021).* Regional economy and transport infrastructure *(Textbook). Tashkent: Tashkent State University of Economics Publishing House.*
- *Ministry of Transport of the Republic of Uzbekistan. (2024).* Official website*. Retrieved from https://mintrans.uz*
- *State Statistics Committee of the Republic of Uzbekistan. (2023).* Transport service indicators*. Retrieved from https://stat.uz*

THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR THE DEVELOPMENT OF DIGITAL ECONOMY IN REGIONS

Avaz Jamolovich Qakhkhorov[1], Majidova Sanobar Daminovna[2]

ABSTRACT

This article is devoted to the necessity of developing the digital economy in the regions, the evolution of the formation of the concepts of "regional economy" and "regional digital economy," as well as to the theories of digital development and the possibilities of their application.The authors analyze theoretical approaches and methodological aspects of implementing the digital economy at the regional level and develop proposals and recommendations for the effective application of such concepts as "regional digital transformation," "smart region," and "digital region."

Keywords: *Digital Transformation, Digital Technologies, Digital Economy, Territorial Digital Transformation, Smart Region, Digital Region, System of Big Data, Artificial Intelligence.*

INTRODUCTION

It is well known that in the process of developing the economy of any country, the specialization of its regions plays a crucial role. The rational utilization of each region's natural, economic, and social potential ensures sustainable national development. Specialized regions, in turn, contribute to improving product quality, enhancing competitiveness, and thereby strengthening the overall economic stability and export potential of the country.

In the context of modern economic trends, regardless of the traditional economic specialization of regions, fostering their innovative development, accelerating digital transformation, and widely implementing modern information and communication technologies are becoming matters of strategic importance. These measures serve as a foundation for increasing regional attractiveness, enhancing competitiveness, improving the investment climate, and establishing sustainable models of economic growth.

At the same time, modernization of regional infrastructure based on innovation and digital solutions, effective utilization of human capital potential, and the creation of new value chains are recognized as key factors in regional development. Therefore, the rapid implementation of digital transformation processes and the establishment of essential digital infrastructure in the regions have become among the key prerequisites for achieving economic development in line with contemporary requirements.

LITERATURE REVIEW

The concept of *regional economics* was first studied within the framework of classical economic schools by scholars such as A. Marshall, W.Christaller, J. Thünen, and A. Lösch. The work of the German economist and geographer Walter Christaller, particularly his book *"Central Place Theory",* as well as the research of

[1] Researcher at the Academy of Public Policy and Administration under the President of the Republic of Uzbekistan, Doctor of Philosophy (PhD), Associate Professor.

[2] Independent researcher at the Higher School of Business and Entrepreneurship under the Cabinet of Ministers of the Republic of Uzbekistan

American economists Walter Isard and Paul Krugman, and August Lösch's *"The Economics of Location"* are of particular significance in this regard.

Among Russian scholars, the works of the prominent economist Alexander Grigorievich Granberg, particularly his monograph *"Potential and Opportunities in Regional Development",* and Natalia Zubarevich's influential book *"The Four Russias"* are noteworthy contributions to the study of regional development.

Furthermore, among Western researchers, the American scholar Don Tapscott's *"The Digital Economy: Promise and Peril in the Age of Networked Intelligence"*, and Nicholas Negroponte's famous work *"Being Digital"* hold significant relevance in understanding the digital transformation of economies. The theoretical foundations of regional digital economy development have been further advanced by leading thinkers such as Malecki, Castells, Cohen, and Lane.

Additionally, the *World Bank's "Digital Economy Report 2024"* and research conducted by the *Boston Consulting Group (BCG)* under the title *"Digital Transformation: Lessons from Global Experience"* provide valuable insights into the international practices of digital transformation and regional economic modernization.

METHODOLOGY

The purpose of this research is to examine the necessity of developing the digital economy in regions, focusing on the evolutionary formation of the concepts of "regional economy" and "regional digital economy," as well as exploring the theoretical foundations and practical applications of digital development.

The study emphasizes the authors' theoretical perspectives and methodological approaches regarding the implementation of the digital economy at the regional level, and highlights the effective utilization of concepts such as *"Regional Digital Transformation", "Smart Region"* and*"Digital Region".*

To achieve the research objectives, various scientific methods were employed, including logical and comparative analysis, statistical evaluation, and the review of relevant academic literature and scholarly articles. These approaches were aimed at providing a comprehensive understanding of the theoretical and methodological aspects of regional digital economic development.

DISCUSSION AND RESULTS

In the contemporary context, the advancement of the digital economy across regions has emerged as one of the principal strategic priorities for national development. Rather than being confined to a specific sector, the digital economy functions as an integrated economic system that unifies multiple industries, enhances intersectoral coordination, and amplifies synergistic efficiency. While sectors such as industry, agriculture, and services traditionally operate independently within their respective domains, the digital economy consolidates them within a unified digital ecosystem, accelerates data exchange, and fosters the rational allocation and utilization of resources.

Empirical observations indicate that in regions where digital technologies have been effectively implemented, production processes tend to become increasingly automated, leading to reductions in raw material and energy consumption, as well as improvements in product quality. In the agricultural sector, digital solutions enable accurate monitoring of land and water resources, predictive modeling of crop yields, and optimization of agro-technical practices. Similarly, within the service sector, the adoption of electronic

payment systems, online platforms, and intelligent management solutions enhances service accessibility, improves consumer convenience, and facilitates regional business operations.

Nevertheless, the implications of the regional digital economy extend far beyond the operational or sectoral level. It contributes to strengthening regional economic autonomy, generating new employment opportunities, fostering the implementation of innovative ideas, and improving the overall quality of life. From a strategic perspective, the regional digital economy represents a multidimensional and transformative framework that surpasses traditional industrial, agricultural, and service paradigms, positioning itself as a vital mechanism for ensuring sustainable regional development.

Hence, the development of regional digital economies remains a subject of continuous academic inquiry among both domestic and international scholars. Ongoing research efforts focus on identifying effective models of digital transformation that can enhance regional competitiveness, promote inclusive growth, and ensure long-term socio-economic stability within the broader context of global economic modernization.

Based on the objectives of this research, in order to interpret the conceptual and scientific essence of developing the digital economy at the regional level, it is first necessary to examine the meaning and theoretical foundations of the concepts of *"regional economy"* and *"regional digital economy."*

The emergence of *regional economics* as a scientific discipline and its development as an integral component of the national economy were initially explored within the classical schools of economic thought by scholars such as A. Marshall, W. Christaller, J.Thünen, and A.Lösch, who grounded their analyses in spatial economic theories [1].

In particular, the English economist **Alfred Marshall** emphasized that "the development of regional economies is achieved through the mechanisms of agglomeration—whereby industrial enterprises located within the same political or social area benefit from mutual advantages, competition, and cooperation." Through this concept, Marshall laid the theoretical foundation for key ideas such as economic specialization, agglomeration effects, and regional resource allocation and locational factors in regional economics.

The German economist and geographer **Walter Christaller** [2], in his seminal *"Central Place Theory,"* proposed a model describing the hierarchical and spatial distribution of cities, rural settlements, and service centers. According to his theory, settlement structures emerge based on population density, types of services provided, and consumer demand. His model sought to explain the spatial organization of regions from the perspective of population distribution, infrastructure development, transport costs, and the structural differentiation of service sectors.

Another prominent German scholar, **August Lösch** [3], made significant contributions to the fields of economic geography and regional economics through his work "The Economics of Location." Lösch analyzed the spatial laws governing the distribution of economic activities and further developed Christaller's central place theory. He identified factors such as market areas, production efficiency, transportation accessibility, and proximity to consumers as determinants of spatial organization. His model conceptualized economic space in a hexagonal structure, explaining the interrelation between economic centers, surrounding industrial networks, and service sectors.

According to the American scholar **Walter Isard**, regional economics—defined as *"regional science"*—represents a field of study that systematically and patiently examines the socio-economic problems of society that possess spatial or territorial dimensions through analytical and empirical methods. Isard

conceptualized regional economics from the perspective of location, mobility, production, and interregional linkages, and he played a key role in establishing the methodological foundations and systematization of this field.

Another prominent American economist and Nobel laureate, **Professor Paul Krugman** [4], argues that *"regional economics should be viewed as the integration of macro- and micro-level processes through the flows of goods, services, and people, as well as through economic agglomeration and income generation."* In his view, understanding regional economic centralization and spatial development requires the continuous application of advanced mathematical models to analyze the dynamics of location, competition, and market interaction.

Michael Porter [5], in turn, emphasizes that the development of regional economies can be effectively achieved through the formation of modern industrial clusters. According to Porter, the key pillars of regional development include well-established infrastructure, a dynamic service sector, and production clusters that foster new business creation, enhance competitiveness, and stimulate innovation. He explains that these clusters serve as a foundation for implementing a modern economy through strengthened national development and global integration.

In his influential works, **Richard Florida** [6] interprets regional development as a process grounded in *human capital, creative capacity,* and a *culturally and technologically conducive environment.* He argues that successful regions are those capable of attracting and concentrating a *"creative class"*—individuals who generate innovation and novel ideas. From this perspective, Florida highlights that attracting talent and fostering a positive socio-cultural environment constitute strategic imperatives in shaping sustainable and competitive regional economies.

Based on the aforementioned theoretical perspectives, scholars from Europe and the United States characterize the scientific development of regional economics through four fundamental dimensions [7, 8, 9, 10]:

1. **Territorial Approach.**Economic processes are analyzed and developed from the perspective of spatial and territorial location, emphasizing the geographical distribution of production and services.

2. **Economic Specialization.**Regional development is pursued in accordance with the natural, social, and technological potential of each territory, determining its optimal economic orientation and comparative advantages.

3. **Comprehensive Development.**This dimension focuses on ensuring the balanced growth of key sectors within regions — including industry, agriculture, infrastructure, services, and the social sphere — through an integrated systemic approach.

4. **Governance Mechanism.**This approach encompasses the interaction and collaboration among the state, the private sector, and civil institutions in implementing regional economic policies and achieving sustainable development goals.

These four scientific approaches are widely applied in both developed and developing countries as foundational principles for regional economic advancement. From this standpoint, the integration of territorial perspectives, economic specialization, comprehensive development, and effective governance mechanisms within the national economy enables the creation of an advanced model of regional progress and facilitates the attainment of higher Gross Regional Product (GRP) indicators.

For instance, the State of California (USA) has achieved a GRP of approximately USD 4.1 trillion; in China, the provinces of Guangdong and Jiangsueach report a GRP of around USD 2.0 trillion. In Japan, the TokyoMetropolis region produces approximately USD 1.85 trillion, while in Germany, the Bavaria region's GRP stands at around USD 0.95 trillion, and in France, the Île-de-France (Paris)region generates approximately USD 1.25 trillion in gross product [11].

According to the research of the prominent Russian economist Alexander Grigorievich Granberg [12], economic linkages between regions and the manner in which they are formed constitute a critical factor in regional development. Granberg emphasizes that the interactions among regions, the balance across industrial branches and sectors, the establishment of necessary infrastructure for regional economic growth, and the role of state policy in enhancing sectoral competitiveness are all of fundamental importance.

Similarly, the Russian scholar Sergey Kadochnikov notes that the competitiveness of Russian regions, their sectoral specialization, the efficient allocation of resources, and their export potential significantly influence economic growth. Furthermore, he argues that cluster-based policies and the acceleration of digital transformation strengthen regional development and foster economic dynamism.

Natalia Zubarevich [13] highlights that analyzing regional development requires consideration of geographical factors, human capital, infrastructure, and domestic market conditions. She observes that Russian regions are heterogeneous in terms of development, warranting their conceptual division into the *"**Four Russias**."* She also underscores that socio-economic disparities across regions are broad and can be explained through political and economic factors.

Among domestic scholars, A.M. Sodiqov, Sh.Kh. Nazarov, D.Q. Akhmedov, and B.B. Valiev have conducted comprehensive studies on the socio-economic development of Uzbekistan's regions. Their research emphasizes identifying the regions' internal competitive advantages and leveraging local resources, expanding agricultural and industrial capacities, improving the business environment, modernizing service sectors, and implementing digital technologies widely. These scholarly findings offer valuable insights for formulating evidence-based strategies to enhance regional economic growth and competitiveness.

Based on the perspectives of the aforementioned scholars and experts in the field, as well as their definitions and approaches, the following authorial definition of *"**regional economy**"* is proposed:

Regional economy refers to a set of activities aimed at ensuring economic stability through the efficient utilization of a region's natural, human, financial, and innovative resources. As an integral component of the national economy, it governs the spatial distribution of productive forces, facilitates intersectoral linkages, and promotes interregional economic integration.

From this standpoint, contemporary approaches to regional economic development necessitate the formulation of integrated strategies that focus on the efficient management of regional resources and potentials, the establishment of clusters and special economic zones, and the modernization of production and service sectors through the extensive application of innovative technologies and digital transformation.

The theoretical dimension of this dissertation focuses on the concept of *"**regional digital economy**"* and its essence. In this regard, it is essential first to study its formation stages, evolutionary trajectory, distinctive characteristics, and potential applications.

Currently, the development of the concept of ***"regional digital economy"*** as a separate direction of regional advancement can be divided into three main stages (see Figure 1).

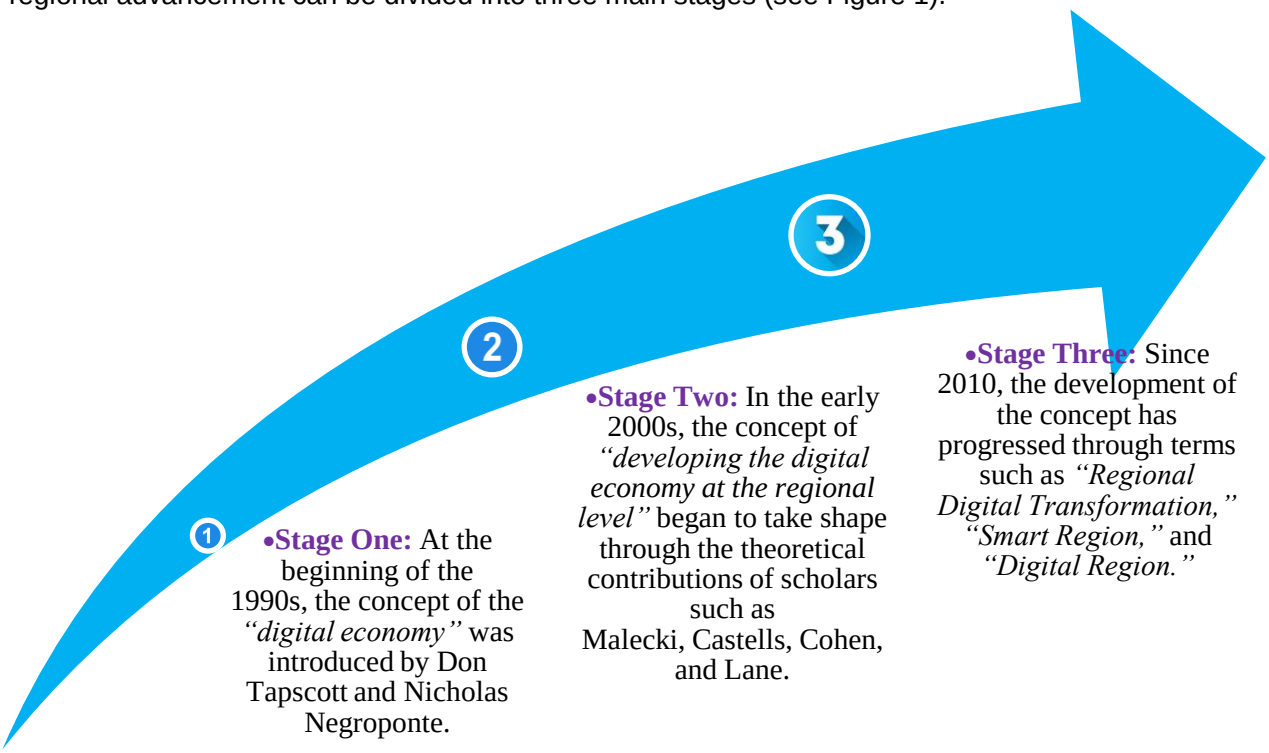


Figure 1. Evolution of Digital Economy Development in Regions

Source: Prepared by the author based on the review of foreign literature.

The Initial Stages of Regional Digital Economy Development

The initial stage in the conceptualization of digital economy development in regions began in the early 1990s with the introduction of the concept of the *"digital economy"* into academic discourse. Its foundational theoretical principles emerged as a result of the rapid advancement of information and communication technologies (ICT) and their integration into existing economic systems.

The term *"digital economy"* was first used in 1995 by the American scholar **Don Tapscott** [14] in his seminal work, *"The Digital Economy: Promise and Peril in the Age of Networked Intelligence."* Tapscott's definition conceptualizes the digital economy not merely as a collection of technologies, but as a new system of socio-economic relations.

Another influential American scholar, **Nicholas Negroponte** [15], in his widely cited book *"Being Digital,"* elaborates on how digital technologies are transforming human life. According to Negroponte, digital technologies—including the internet, computers, information flows, media, and artificial intelligence—impact all dimensions of human activity, highlighting the critical transition from a traditional industrial society to a digital society.

Since the early 2000s, the study of the digital economy has expanded beyond the global perspective to include regional development considerations. This process can be regarded as the second stage in the evolution of regional digital economy development. During this period, the idea of *"developing the digital*

economy at the regional level" began to take shape based on the theoretical frameworks of scholars such as **Malecki, Castells, Cohen, and Lane**.

Initially, according to the theory proposed by **David Lane** in 1999, the digital economy represents a *new paradigm for sustainable and innovative regional development*, in which the primary drivers of economic growth are knowledge, information, and technology. Lane scientifically substantiated that regional economies could be elevated to a new qualitative stage through digital transformation [16]. He emphasized that, under the conditions of a digital economy, regional development is no longer determined solely by natural resources or labor force but increasingly by intellectual potential, information technologies, innovative networks, and the degree of digitalization.Lane conceptualizes the digital economy through three core components:

1. **Infrastructure Level** – including the internet, data transmission systems, and telecommunications networks.

2. **Economic Activity Level** – encompassing areas such as e-commerce, digital finance, IT services, online education, and artificial intelligence.

3. **Institutional Level** – comprising state policies, the digital legal environment, and mechanisms supporting innovation.

Lane's approach positions the digital economy as a critical element in the formation of innovative ecosystems. His conceptual framework continues to serve as a theoretical foundation for the development of digital strategies across numerous countries and regions.

Another prominent scholar of this stage, **Edward Malecki**, conducted an in-depth analysis of the relationship between the digital economy and regional development. In the early 2000s, his concept that *"Internet infrastructure is becoming a primary factor in regional development"* represented a forward-looking approach [17].

Malecki argued that in the 21st century, regional economic growth is no longer driven primarily by natural resources or geographic location but rather by *access to Internet infrastructure and the speed of information exchange*. Internet infrastructure thus emerges as the principal factor in regional competitiveness. In this context, the Internet serves as a new *"economic highway"*, analogous to how industrial-era development relied on railways and major ports. It enables the rapid and cost-effective transmission of information, capital, and innovation, effectively reducing the *virtual distance* between regions.

Consequently, regions equipped with robust Internet infrastructure gain a competitive advantage. Malecki further emphasized that in regions where digital infrastructure is unevenly distributed, disparities arise in economic opportunities, the quality of education, and entrepreneurial activity. He termed this phenomenon the *"digital divide."* Accordingly, the development of Internet infrastructure is not merely a technological endeavor but also a strategic instrument for ensuring socio-economic equity.

Certainly, Internet networks accelerate the flow of information within regions, strengthen the connections between research institutions and businesses, and foster the emergence of new startups and IT clusters. Consequently, Internet infrastructure promotes the development of a region's innovative ecosystem and facilitates the creation of a self-renewing economic system.

Internet infrastructure functions as a new *"transport network"* in the economic geography of the 21st century, linking regions, accelerating innovation, and driving rapid economic growth.

Additionally, in the 2000s, the Spanish sociologist and economist **Manuel Castells** proposed one of the most influential theoretical models of the digital era—the *"Network Society"*—in his seminal work *The Rise of the Network Society* [18]. This theory later served as a scientific foundation for the development of regional digital integration frameworks.

But what exactly is a *Network Society*? The defining characteristic of 21st-century society is its connectivity through networks. Economic, social, and cultural interactions increasingly occur via the Internet and information networks. Accordingly, Castells conceptualizes the network society through the following approaches:

1. **Information and knowledge as primary resources:** In a network society, economic power is not derived from material wealth but from the ability to create, process, and utilize information.

2. **The Internet as the foundation of new social and economic structures:** Information flows directly connect individuals, organizations, and regions.

3. **Networks transcend regional boundaries:** Economic activity is no longer confined to a specific geographic location but operates through global digital networks.

According to **Manuel Castells' "Network Society"** concept, from the perspective of regional development, regions in the industrial era were connected primarily through physical infrastructure—such as roads, transport networks, and energy systems. In the digital era, however, regions are interconnected via information networks, including the Internet, data centers, and telecommunications infrastructure. These processes are now conceptualized as *"regional digital integration"*. In this context, *"the economy is no longer tied to a specific location but depends on the flows of information and capital."* This implies that regions engage in economic cooperation not only through geographic proximity but also through information flows. Consequently, regions with strong digital connectivity experience faster development.

The *Network Society* provides a theoretical foundation for regional digital integration, where economic development is no longer constrained by physical location but is mediated through digital networks. Each region develops or lags depending on its level of integration into the digital ecosystem. The network society model has served as a theoretical basis for contemporary concepts such as IT clusters, technopolises, creative industries, and smart cities. The degree of digital integration of a region determines its economic competitiveness—a principle that has become central to regional policy in the European Union, the United States, and South Korea.

Another leading American economist, **Steven S. Cohen**, is recognized for his contributions to regional economic development and innovative clusters [19]. Cohen argues that the digital economy not only transforms economic sectors but also fundamentally reshapes regional structures, production forms, and labor markets. He emphasizes that regional economic growth now relies less on natural resources and more on digital technologies, knowledge, and human capital. This approach departs from traditional industrial economic models, highlighting the decisive role of intellectual labor, innovation, and digital infrastructure in regional development.

Cohen introduced the concept of a *"digital ecosystem"* in regional development. According to his framework, the effectiveness of the digital economy depends on the presence of knowledge centers,

innovative infrastructure, and human capital in the region. Universities, research laboratories, and innovative companies serve as catalysts for regional digital development.

Cohen further stresses that regional competitiveness is contingent upon digital transformation. Each region's position in the global economy depends on its level of digital integration. The higher the degree of digitization, the stronger the region's economic potential. Regional development relies on the interconnectedness of digital technologies, knowledge, and human capital. Consequently, the key to advancing the digital economy lies in equipping individuals with digital skills, which entails:

- Prioritizing digital disciplines within the education system (e.g., Data Science, IT, AI, Cybersecurity, etc.);
- Implementing workforce retraining programs;
- Creating new employment opportunities through the promotion of innovative thinking.

Steven S. Cohen's theory on the development of the digital economy in regions is based on the following principles:

1. The foundation of regional economic growth lies in digital knowledge, technology, and human capital.
2. Digital infrastructure and an innovative environment determine the region's competitiveness.
3. The effectiveness of government policy is measured by its ability to equalize regional digital opportunities.
4. A sustainable digital society emerges through the integration of science, education, and business.

In essence, the new model of regional development shifts focus from traditional physical resources to an economic system grounded in digital technologies, knowledge, and human capital**.** The digital economy serves as a critical driver, enhancing not only the economic but also the social and innovative potential of regions.

Each region must develop its own digital ecosystem, which constitutes a synergistic system of skilled human resources, research institutions, an innovative business environment, and advanced digital infrastructure. This ecosystem enables regions to achieve not only domestic economic growth but also to strengthen their position in global competition**.** The future of regional economic growth depends on the integration of digitization, knowledge, and human capital, i.e., the convergence of intellect and technology.

Building on the developmental stages discussed above, the integrated model for "regional digital economy development" proposed by Malecki, Castells, Cohen, and Lane can be formally expressed by the following framework:

$$HRI = F(Ii, Nt, In, B)$$

Here:

HRI – Level of regional digital economy development;

Ii – Infrastructure (Malecki);

Nt – Network integration (Castells);

In – Innovation (Lane);

B – Knowledge and human capital (Cohen).

Thus, the development of the digital economy in regions is realized through the synergistic interaction of all four approaches.

In contemporary economic thought, the issue of *"regional digital economy development"* is explained through four primary scientific approaches—those of Edward Malecki, Manuel Castells, Steven S. Cohen, and Robert Lane. The ideas of these scholars are interconnected, providing the economic, social, and scientific foundations for regional digital development.

The scientific approaches of these four scholars complement one another, forming a cohesive theoretical model for the development of regional digital economies**.** Their collective perspective emphasizes that the digital economy represents a new paradigm of regional development, which operates not merely through technology, but through the integration of knowledge, innovation, human capital, and social sustainability. Accordingly, shaping a regional digital economy entails combining economic resources with modern digital technologies, transforming knowledge and innovation into economic power, and engaging all societal layers in the process of digital transformation.

Thus, according to the conclusions of the "Malecki," "Castells," "Cohen," and "Lane" schools of thought, the development of regional digital economies constitutes a new economic mindset grounded in innovation, human capital, and social equity, serving as the principal pathway for regions to achieve sustainable development and enhance intellectual potential in the context of global competition.

The third stage is associated with the post-2010 development of regional digital transformation, during which, over the last fifteen years, the digital economy has expanded at a rapid global pace. This process has introduced and popularized new academic and practical terms such as **"regional digital transformation," "smart regions," and "regional digitization"** [20,21,22]. In this context:

Regional digital transformation refers to the restructuring of regional economies through digital technologies, encompassing the digitalization of governance, infrastructure, industrial, and service sectors.

Smart regions represent an expanded form of the "Smart City" concept, focusing on the implementation of **digital infrastructure, IoT, Big Data, AI, and e-governance** across an entire province or region.

Regional Digitization refers to the process of establishing digital data flows within a specific region, modernizing information infrastructure, and implementing digital platforms to optimize the use of resources.

During this period, regional digital transformation manifested across the following key directions:

1. **Digital Infrastructure and Data Centers** – each region established "data centers" and "digital hubs."

2. **Regional Digital Governance** – local authorities implemented systems for digitally informed decision-making.

3. **Economic Digital Platform Ecosystem** – local businesses, industries, and service sectors were developed through digital integration.

4. **Human Capital and Digital Literacy** – the quality of human capital in the regions improved through digital education, online employment, and innovation centers.

Since 2010, the process of regional digital transformation has become a primary driver of regional development policy. At this stage, regions are guided not only by economic factors but also by smart governance, digital infrastructure, and human capital**,** reflecting the unique approaches of scholars such as Robert Morris, David Glover, Philip Cook, and Andrew Carlson**.**

According to **Robert Morris and David Glover**, the concepts of **"Smart Regions"** and **"Smart Cities"** advocate for a model of digital integration at the regional scale. Regional digital integration should encompass not only urban centers but also rural and peripheral areas. In regional development, digital technologies must connect the entire region—including urban areas, rural settlements, transport networks, industrial zones, and social infrastructure—through integrated digital systems. In other words, they proposed applying the "Smart City" model not only at the city level but across the entire region, which led to the popularization of the concept under the term **"Smart Regions."**

The primary content and directions of Robert Morris and David Glover's approach are summarized as follows:

1. **Regional Digital Integration:** Economic, social, and environmental systems within each region must be interconnected through digital platforms. For instance, sectors such as transportation, energy, healthcare, education, and manufacturing should operate within a unified information environment.

2. **Digital Equity between Urban and Rural Areas:** Digital technologies must be implemented not only in large urban centers but also in remote and peripheral regions. This helps to reduce interregional economic and social disparities.

3. **Enhancing Regional Competitiveness:** Regions should create a competitive environment for investment, innovation, and human capital development through the adoption of digital economy practices.

4. **Data-Driven Governance:** Regional decision-making should be based not on static statistics but on real-time digital data streams, including IoT and Big Data analytics.

5. **Regional Innovation Ecosystem:** In each region, collaboration between digital startups, universities, and local governments accelerates digital innovation.

The essence of the theory proposed by **Robert Morris and David Glover** is that the future of regional digital development lies in creating sustainable, innovative, and competitive **"Smart Regions"** by digitally interconnecting diverse economic and social systems.

Similarly, the British economist and geographer **Philip Cook**, internationally recognized for his research in regional innovation, clusters, and the digital economy [23], also advanced a concept for regional digital development. According to Cook, each region (province or regional economic area) should possess its own **innovation ecosystem**. Within this ecosystem, universities, enterprises, research centers, and local authorities collaborate to generate new technologies and promote the region's economic growth. He argues that:

1. **Region as the Primary Space for Innovation:** Innovation is not only generated at the national or global level but also at the regional level. The social, economic, and institutional environment within a region determines the pace and nature of innovation development.

2. **Networked Collaboration:** Innovation is accelerated when research institutions, entrepreneurs, startups, and government organizations engage in collaborative activities.

3. **The "Triple Helix" Model of Innovation:** Cook applies the Triple Helix concept, which emphasizes the intertwined relationship between universities, businesses, and the state as a driver of innovation.

4. **Regional Specialization:** Each region should specialize in its strengths (e.g., IT, biotechnology, energy, etc.), as this specialization enhances the effectiveness and impact of innovation.

5. **Importance of the Institutional Environment:** Innovation development depends not only on technology but also on local policies, legislation, and educational systems.

Without developing its own innovation clusters based on digital technologies and human capital, a region risks falling behind in the global competitive landscape.

Andrew Carlson's theory represents one of the key contemporary approaches to regional digital development. His framework explains how a region's spatial, economic, and social structures transform through digital technologies [24].

According to Carlson, regional development is determined not solely by economic or industrial factors but by the spatial reorganization and novel flows of information enabled by digitalization. In other words, digital technologies fundamentally reshape a region's geographic boundaries, economic linkages, and the activities of its population. He argues that:

1. **Digital Reorganization of the Region:** Digital infrastructure—including internet networks, data centers, and IoT devices—transforms the economic and social structures of a region. For instance, while economic activity was previously concentrated in urban centers, peripheral areas can now participate effectively in economic processes through online services.

2. **Information Flows and the New Economic Geography:** Regional development increasingly relies on the flow of data. Logistics, resource allocation, population mobility, and market interactions are now managed in real time through digital information. This process reshapes the "economic geography" of the region.

3. **Digital "De-Agglomeration":** Historically, economic activity was centralized in major cities. Digital economies now allow this activity to disperse across regions. For example, IT professionals or startups can operate efficiently in smaller towns or rural areas rather than being confined to central urban hubs.

4. **The Problem of Regional Digital Asymmetry:** Carlson emphasizes that uneven distribution of digital infrastructure creates "spatial digital inequality." In such cases, central regions may advance digitally, while peripheral areas lag behind, exacerbating regional disparities.

5. **Digital Spatial Governance:** Effective regional planning now requires leveraging digital data and geoinformation systems (GIS, Big Data, AI). This enables efficient allocation of resources, supports environmental sustainability, and fosters innovative development.

According to Andrew Carlson's **"Territorial Digitalization and Spatial Development"** theory, the digital economy dissolves the physical boundaries of regions and reorganizes them based on data flows and digital networks. Consequently, regions are increasingly shaped not by geographic proximity but through digital connectivity, forming a "new economic space."

In 2014, European researchers Dominic Foray, John Goddard, and Philip McCann proposed a conceptual framework in which each region in Europe selects development pathways based on its digital capacity and specialization.

In recent years, the World Bank has also conducted several studies on institutional models for promoting the development of the digital economy at the regional level [25].

In the Republic of Uzbekistan, several scientific studies on the digital economy and regional development have been conducted by local scholars. Notably, academic researchers S. Ghulomov and Q. Aburakhmonov have examined the formation of the digital economy and labor relations under conditions of digital transformation; professors A. Kenzhabaev, T. Qo'chqarov, and Z. Otaqozieva have focused on organizational aspects of the digital economy; associate professors D. Mamasoatov and M. Abdullaev have investigated the application of digital technologies; and professors S. Khudoyqulov and N. Ghulomova have explored the regional formation of digital processes.

Overall, when analyzing the key aspects of the concepts of "**regional economy**" and "**regional digital economy**," it becomes evident that they differ in terms of their application, primary objectives and resources, and governance methods (Table 1).

Table 3 : **Distinct Features of the Concepts of "Regional Economy" and "Regional Digital Economy"**

Main Focus / Direction	Regional Economy	Regional Digital Economy
Main Objective	Efficient management of regional resources and ensuring economic growth	Enhancing regional economic efficiency through digital technologies
Governance Method	Traditional economic and administrative mechanisms	Digital governance and data-driven decision-making
Primary Resources	Natural, labor, and financial resources	Information, data, and digital capital
Economic Form	Industry, agriculture, and service sectors	E-commerce, digital services, and IT innovations
Scientific Basis	Theory of regional economic space	Theory of digital transformation and innovative development

Source: Developed by the author

While traditional regional economy relies on a region's resource potential and economic specialization, **regional digital economy** represents its next stage, aiming to modernize economic processes through digital technologies and data. This modernization is a key factor in enhancing regional competitiveness, improving population well-being, and digitally modernizing the national economy.

Based on the views of the scholars and specialists discussed above regarding the concept and stages of formation, **regional digital economy** can be understood as an economic activity within a regional economic system that focuses on digitalizing management through digital technologies, information and communication infrastructure, and data.

Moreover, leveraging digital technologies—such as Big Data, IoT, AI, Blockchain, e-Government, e-Commerce, and others—to enhance regional economic potential constitutes the emergence of regional digital economic activity. Accordingly, we propose the following authorial definition:

Regional digital economy is a set of regional development measures aimed at transforming local economic systems (at city or provincial level) through information and communication technologies, digital platforms, digital skills, and innovation infrastructure, with the goal of increasing productivity via digital trade, associated services, and other digital technologies.

The level of a regional digital economy is determined by the extent of the region's digital infrastructure, the degree of digitalization of organizations (enterprises, administrative bodies), digital competencies, and the presence and maturity of digital ecosystems (startups, platform companies, etc.).

Conclusion and Recommendations

The distinctive features of the regional digital economy include the digitalization of economic processes, transparency in the activities of business and public sectors, data-driven decision-making, and the emergence of new forms of interregional competition. At the same time, human capital, innovative potential, and scientific research play a crucial role within the digital economy.

In conclusion, the regional digital economy not only enhances economic efficiency but also strengthens the innovative competitiveness of regions, expands the digital capabilities of the population, and creates new opportunities for sustainable development. Its successful implementation contributes to reinforcing regional economic autonomy and improving the position of the national economy within the global digital landscape.

References

- *Marshall, A. Principles of Economics, 8th ed., Macmillan & Co., London, 1920 (original 1890).; Belussi, F. & Caldari, K. "At the origin of the industrial district: Alfred Marshall and the Cambridge School." Cambridge Journal of Economics, 33(2): 335-355, 2009.;*
- *Christaller, W.Die zentralen Orte in Süddeutschland, Jena: Gustav Fischer.1933.Britannica article: "Central-place theory", Encyclopedia Britannica.2000 y.*
- *Lösch, A.Die räumliche Ordnung der Wirtschaft: Eine Untersuchung über Standort, Wirtschaftsgebiete und internationalen Handel, (1940) Jena: Gustav Fischer.*
- *Krugman, P. (1991).Geography and Trade. MIT Press.; Krugman, P. (1995). Development, Geography, and Economic Theory. MIT Press.*
- *Porter, M. E. (2000). "Location, Competition, and Economic Development: Local Clusters in a Global Economy."Economic Development Quarterly, Vol. 14, No. 1, pp. 15–34.*
- *Florida, R. "The Rise of the Creative Class"(2002)rodriguez 21lpol30 1.commons.gc.cuny.edu.*
- *Armstrong H., Taylor J. Regional Economics and Policy, (3rd ed.). Wiley, 2000.;*
- *Maier G. (assoc.).Handbook of Regional Growth and Development Theories, Edward Elgar, 2009.;*
- *Capello R. Regional Economics, Routledge, 2014; Capello R. Regional Economics, Routledge, 2014;*
- *Isard W.Methods of Regional Analysis: An Introduction to Regional Science, Cambridge, MA: MIT Press, 1960.*
- *Developed by the author based on World Bank data. www.worldbank.com*
- *Granberg A.G. "Regionalnoe razvitie: Opyt Rossii i Evropeyskogo Soyuza" Monograph. Moscow: Ekonomika, 2000. 435 p.*

- Natalia V.Zubarevich. 2009. "Regional Development and Regional Policy in Russia During Ten Years of Economic Growth," Journal of the New Economic Association, New Economic Association, issue 1-2, pages 161-174.;
- Don Tapscott (1995 y.)"The Digital Economy: Promise and Peril in the Age of Networked Intelligence" McGraw-Hill.
- Nicholas Negroponte (1995)"Being Digital", Knopf Doubleday Publishing Group, ISBN, 0679762906.
- Lane, D. "Digital Economy and Economic Development". 1999 y.
- Malecki, E. J. "The Economic Geography of the Internet's Infrastructure". Economic Geography. 78(4). 2002.
- Manuel Castells:The Rise of the Network Society2000 y. Wiley-Blackwell.
- Cohen, Stephen S. & Fields, Gary. Social Capital and Capital Gains in Silicon Valley.1999.
- Morris, R. & Glover, D. (2014). "Smart Regions: Extending the Digital City Paradigm." Regional Science Policy & Practice.;
- Cooke, P. (2001). "Regional Innovation Systems, Clusters, and the Knowledge Economy.";
- Carlson, A. (2020). "Digital Spaces and the New Geography of Regional Growth." — Urban and Regional Innovation Studies.
- Cooke, P. (2001)."Regional Innovation Systems, Clusters, and the Knowledge Economy."; Cooke, P. & Morgan, K. (1998)."The Associational Economy: Firms, Regions, and Innovation."
- Carlson, A. (2017). "Territorial Digitalization and Smart Spatial Planning." — Regional Development Review.Carlson, A. (2020). "Digital Spaces and the New Geography of Regional Growth." — Urban and Regional Innovation Studies.
- World Bank. Digital Economy for Regional Developmen. 2021.

ANALYSIS OF THE CURRENT STATE OF THE REGION'S INTEGRATION INTO FOREIGN MARKETS

Ozodova Farida Zarif qizi,[1]

ABSTRACT

This article analyzes the process of Uzbekistan's integration into foreign markets. The country's export potential, import and investment flows, as well as the main directions of economic cooperation are examined. Based on statistical and empirical data, the article identifies Uzbekistan's relations with selected foreign markets, along with their growth opportunities and existing constraints. The research findings contribute to the effective implementation of external integration and diversification policies within the country's economic development strategy. In addition, the article provides recommendations aimed at enhancing Uzbekistan's position and competitiveness in the global economy.

Keywords: *Foreign Market Integration, Export Potential, Import Flows, Economic Cooperation, Market Diversification, Investment Efficiency, Global Economy, Competitiveness, Foreign Relations, Sustainable Development.*

Introduction.

Uzbekistan's integration into the global economy is of great importance in terms of ensuring sustainable development and enhancing the country's competitiveness [1]. In recent years, export potential has expanded, while import flows and the volume of investment have increased. At the same time, the need to implement diversification strategies in foreign markets and to develop mechanisms of international cooperation has intensified [2]. Research shows that the process of external integration serves as an important tool for strengthening economic stability and creating new market opportunities. This article analyzes Uzbekistan's relations with selected foreign markets, as well as their opportunities and constraints. Furthermore, it examines the role of regional and global trade partnerships in promoting sustainable economic growth, highlights the challenges of market access and regulatory frameworks, and discusses strategies for enhancing trade competitiveness. The study also emphasizes the importance of technological adoption and innovation in improving export performance.

Literature Review.

In the article "International Market Integration: A Survey" by A. Akbari and L. Ng, the theoretical and empirical aspects of global market integration are analyzed. The authors mainly examine the processes of stock market integration in the context of developed and emerging markets [3]. The study provides an overview of methods for measuring the degree of integration, key research themes, and the evolution of related studies, serving as a comprehensive survey that deeply explores market integration.

In the scientific article "Global Financial Market Integration: A Literature Review", S. Haddad analyzes more than 380 academic studies on market integration, combining empirical and theoretical approaches [4]. The research addresses issues such as market segmentation, portfolio diversification, and the current state

[1] PhD Candidate, Asia International University

of economic and financial market integration, highlighting the role of global market integration in economic growth, liberalization, and international trade processes.

The article “Emerging Markets Are Catching Up: Economic or Financial Integration” by F. Akbari, S. Ng, and B. Solnik examines the directions in which economic and financial integration are developing in emerging markets [5]. The findings indicate that although emerging market economies (EMEs) lag behind developed countries in terms of integration, they are gradually converging toward leading economies, particularly in economic integration.

In “Empirical Evidence on Stock Market Integration”, A. Akbari and L. Ng present empirical findings on market integration, analyzing the degree of global stock market integration, measurement methods, and inter-market linkages [6]. The results identify the impact of integration on global investment flows.

In “Understanding Global Trade”, Elhanan Helpman analyzes global trade processes based on modern economic theories, emphasizing that countries’ integration into foreign markets is closely linked to trade costs, institutional factors, and production efficiency. The work extensively discusses the formation of global trade flows and the impact of integration on economic growth.

Research Methodology.

This study applies a comprehensive methodological approach to assess the current state of the region’s integration into foreign markets. Systematic and comparative analysis methods are used to examine foreign trade indicators, export–import volumes, and investment flows. Statistical data are analyzed dynamically over time in order to identify the main trends in integration processes. In addition, economic and institutional factors influencing the region’s access to foreign markets are evaluated through structural analysis. The empirical results obtained are further compared with international experience and existing academic literature.

Analysis and Results.

The degree of the region’s integration into foreign markets is assessed through foreign trade turnover indicators. An analysis of Uzbekistan’s trade relations with its major partner countries during 2023–2025 shows that the process of external economic integration has been developing steadily. In particular, the increase in trade volumes with countries of the Asian and Eurasian regions indicates the region’s deeper integration into the global economic space.

Trade turnover with China reached USD 17.2 billion in 2025, recording the highest level and confirming China’s role as the region’s key strategic trading partner. The steady growth of trade with the Russian Federation demonstrates the strengthening of the region’s integration with the Eurasian economic space. Trade relations with Kazakhstan and Türkiye also show positive dynamics, reflecting the consolidation of regional cooperation.

Moreover, a significant increase in trade volumes with Germany, France, India, and the UAE indicates the diversification of Uzbekistan’s foreign trade geography. This diversification plays an important role in reducing external market risks and ensuring sustainable economic growth. At the same time, a decline in trade volumes with certain countries, including the Republic of Korea and Poland, suggests the need to reassess and restructure the configuration of foreign markets.

Overall, the analysis results indicate that the region's integration into foreign markets has intensified at the current stage, and trade relations are advancing to a qualitatively new level.

Table 1 : Dynamics of Uzbekistan's Foreign Trade Turnover with Major Partner Countries, January–December, mln USD[1]

Davlatlar	2023	2024	2025
China	13 825,7	12 673,5	17 226,7
Russia	10 156,3	11 974,1	12 985,7
Kazakhstan	4 485,6	4 462,1	4 969,6
Turkey	3 161,1	3 037,6	3 024,5
Korea	2 368,0	2 021,2	1 737,8
Afghanistan	867,5	1 138,0	1 678,5
Germany	1 072,3	1 253,4	1 427,7
France	995,4	1 141,7	1 377,3
India	761,0	988,1	1 317,7
UAE	721,5	821,8	1 255,2
Turkmenistan	1 095,9	1 149,7	1 203,7
Kyrgyzstan	968,3	874,7 1	199,2
USA	765,1	1 024,9	1 004,0
Belarus	654,7	774,0	965,0
Tajikistan	760,9	702,4	912,3
Switzerland	381,5	321,4	591,4
Iran	503,6	497,1	578,9
Italy	514,4	458,9	468,9
Pakistan	387,3	407,5	445,9
Poland	411,0	393,0	383,7

The above Table 1 reflects the dynamics of Uzbekistan's foreign trade turnover with major partner countries during 2023–2025. Overall, it can be observed that trade volumes with most countries increased significantly in 2025.

[1] Compiled based on data from the National Statistics Committee of the Republic of Uzbekistan.

China remains the largest trading partner. Although there was a decline in 2024, trade turnover surged to USD 17.2 billion in 2025, demonstrating a sharp increase. Trade with the Russian Federation also grew steadily, reaching nearly USD 13 billion in 2025. Trade with Kazakhstan and Turkey remained stable, although the growth rates were relatively low.

Positive and rapid growth in trade volumes has been observed with Afghanistan, Germany, France, India, and the UAE, indicating the expanding scope of Uzbekistan's foreign trade geography. In particular, the sharp increase in trade with India and the UAE in 2025 is noteworthy.

At the same time, trade volumes with the Republic of Korea and Poland show a declining trend. Trade with the USA increased in 2024 but slightly decreased in 2025.

These trends indicate that Uzbekistan's foreign trade relations are becoming more diversified, with trade volumes in certain strategic markets growing rapidly.

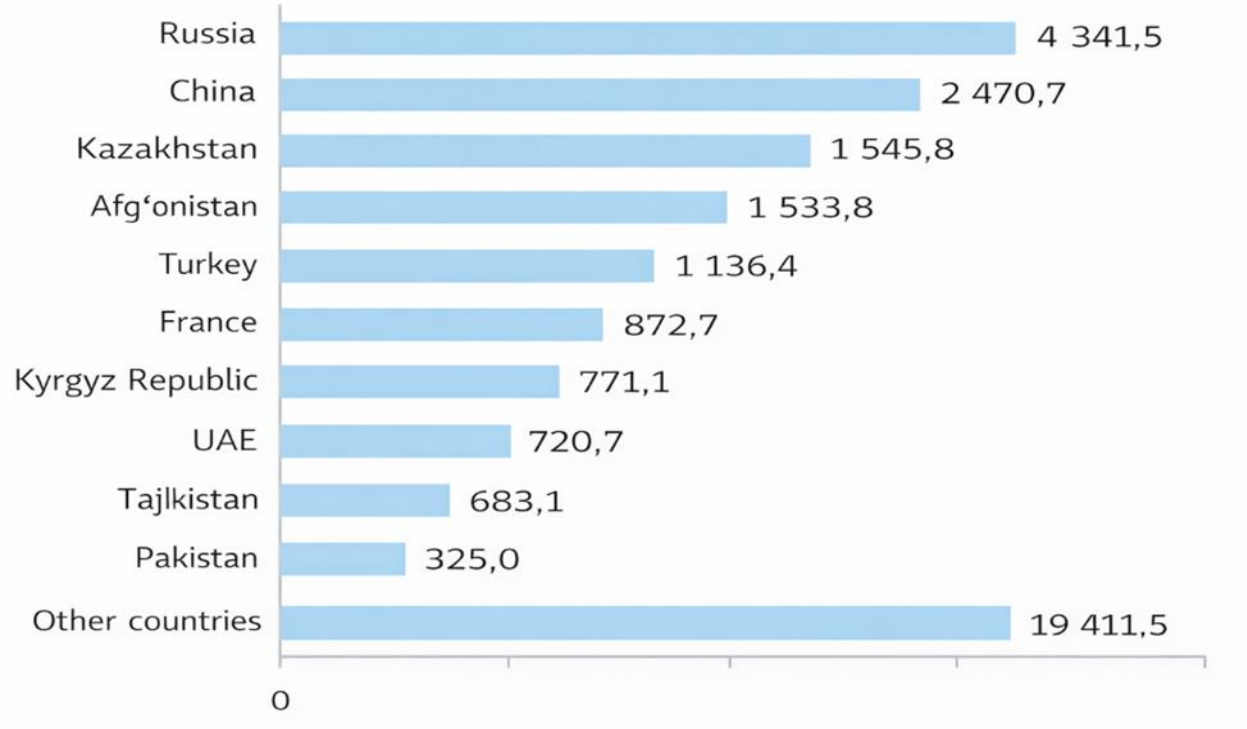


Figure 1. Export Volumes of the Republic of Uzbekistan by Country, January–December 2025, mln USD[1]

The data presented in the above figure reflect Uzbekistan's export volumes by country for January–December 2025 and, in close connection with the previously analyzed foreign trade turnover table (2023–2025), provide a deeper insight into the region's level of integration into foreign markets.

In the previous table, China and the Russian Federation were identified as Uzbekistan's leading trade partners. This export table confirms that in 2025, the Russian Federation was the largest destination for

[1] Compiled based on data from the National Statistics Committee of the Republic of Uzbekistan.

Uzbekistan's exports, with exports reaching USD 4.34 billion, indicating a high degree of integration into the Eurasian market. Although China ranks second in terms of exports, its leading position in overall trade turnover reflects the significant share of imports in Uzbekistan–China trade.

The nearly equal export volumes with Kazakhstan and Afghanistan indicate the stability of regional trade relations. Trade with these countries is primarily explained by geographic proximity, transport-logistics advantages, and historical economic ties. The significantly higher export volumes to Turkey and France suggest that Uzbekistan's export potential to European and Middle Eastern markets is expanding.

Kyrgyzstan, the UAE, and Tajikistan hold a moderate share in the export structure, reflecting the strengthening of regional economic integration. Although export volumes to Pakistan are relatively low, there are growth opportunities in the South Asian direction.

A particularly noteworthy aspect is that the "Other Countries" category accounts for USD 19.4 billion, indicating a high level of diversification in Uzbekistan's exports. Overall, this table complements the previous analysis of foreign trade turnover, confirming that the region's integration into foreign markets is also active and steadily developing in terms of export directions.

Uzbekistan's export indicators for January–December 2024 totaled USD 27,270.1 million, which increased to USD 33,812.3 million in 2025, representing a growth rate of 124%. This demonstrates a significant increase in the country's export potential.

Analyzing exports by product type, exports of food products and live animals rose from USD 2,175.0 million in 2024 to USD 2,944.7 million in 2025, a growth rate of 135.4%, accounting for 8.7% of total exports. This highlights the strategic importance of the food sector in the national economy. Exports of beverages and tobacco also increased from USD 138.5 million in 2024 to USD 205.7 million in 2025, a growth rate of 148.6%, although their share in total exports remains around 0.6%.

Exports of non-food raw materials and fuels (excluding fuel) decreased from USD 315.4 million in 2024 to USD 294.6 million in 2025, representing a growth rate of 93.4%. This decline may be due to insufficient domestic production or fluctuations in global prices.

Exports of mineral fuels, lubricants, and similar materials increased from USD 1,307.6 million in 2024 to USD 1,476.2 million in 2025, a growth rate of 112.9%, accounting for 4.4% of total exports. This indicates that energy resources remain an important segment of Uzbekistan's export structure.

Exports of chemical products and similar goods increased from USD 1,680.7 million in 2024 to USD 2,135.7 million in 2025, representing a growth rate of 127.1% and accounting for 6.3% of total exports. In contrast, exports of industrial goods decreased from USD 4,175.8 million in 2024 to USD 3,988.4 million in 2025, a growth rate of 95.5%, representing 11.8% of total exports. This indicates a slight decline in industrial exports.

Exports of machinery and transport equipment fell from USD 1,201.1 million in 2024 to USD 1,161.5 million in 2025. However, the segment of various manufactured goods and other products experienced significant growth. Service exports increased from USD 7,571.7 million in 2024 to USD 9,760.4 million in 2025, a growth rate of 128.9%, accounting for 28.9% of total exports.

Overall, Uzbekistan's export growth rate has been high, with significant increases observed in the exports of services, food products, and other goods. At the same time, a slight decline was noted in the

industrial and non-food raw material segments, highlighting the need to further improve diversification and refine the country's export strategy.

The region's integration into foreign markets plays a crucial role in ensuring its economic development and stability. In recent years, the increase in export potential, the expansion of foreign trade relations, and the attraction of foreign investments have strengthened the region's connection with the global economy. At the same time, export volumes and product competitiveness in certain sectors remain insufficient. The analysis indicates that successful integration into foreign markets depends on effective infrastructure, a robust transport-logistics system, and institutional support. Additionally, diversifying exports and implementing digital and innovative technologies are important factors for expanding market access. From this perspective, the region's active participation in global trade flows contributes to economic growth and enhances competitiveness.

Conclusion and Practical Recommendations.

The results of this study indicate that Uzbekistan's integration into foreign markets has reached a new stage in recent years, both in terms of quality and quantity. The steady growth of foreign trade turnover, exports, and imports reflects the strengthening of the country's ties with the global economy. In particular, the development of trade relations with China, the Russian Federation, Kazakhstan, and Turkey confirms the region's deep integration into Eurasian and Asian markets. At the same time, the increase in trade volumes with new directions such as India, the UAE, Germany, and France demonstrates the diversification of Uzbekistan's foreign trade geography. While the rising share of services, food products, and chemical goods in exports is a positive trend, the low growth rates in industrial goods and certain raw material segments highlight existing challenges that require targeted policy interventions and strategic planning.

Based on the research, the following recommendations are proposed. First, it is essential to further diversify the export structure to increase the share of high value-added products. Second, developing transport and logistics infrastructure and expanding transit opportunities are crucial for effective access to foreign markets. Third, extensive use of digital trade platforms and modern marketing mechanisms will enhance exporters' competitiveness. Fourth, improving the institutional environment, attracting investments, and actively engaging in international trade agreements will accelerate the process of external integration. These measures will strengthen Uzbekistan's position in the global economy and contribute to sustainable economic development.

References:

- *Askarovich, U.K., & J.S.T.qizi (2023). Foreign Economic Activity of the Republic of Uzbekistan: Assessment and Momentum of Development. International Journal of Inclusive and Sustainable Education. 1(6), pp.- 213–217.*
- *G.J.Olimova. Developing Uzbekistan's foreign trade strategy. Journal of Multidisciplinary Research. Vol. 3 No. 11 (2025), pp. - 106-115*
- *Akbari, A., & Ng, L. (2020). International Market Integration: A Survey. Asia Pacific Journal of Financial Studies, Vol. 49(2), pp. 161–185.*
- *Haddad, S. (2023). Global Financial Market Integration: A Literature Survey. Journal of Risk and Financial Management, 16(12), pp. 1–27.*
- *Akbari, A., Ng, L., & Solnik, B. (2020). Emerging Markets Are Catching Up: Economic or Financial Integration?. Journal of Financial and Quantitative Analysis, 55(7), pp. 2270–2303.*
- *Akbari, A., & Ng, L. (2020). Equity Market Integration Empirical Findings*

THE ROLE OF KASHKADARYA REGION IN THE NATIONAL ECONOMY AND THE DISTINCTIVE FEATURES OF ITS POTENTIAL

Achilova Firuza Kurbanovna[1]

ABSTRACT

This article highlights the specific aspects of the role and potential of the Kashkadarya region in the country's economy. It also presents conclusions on the role and potential of the Kashkadarya region.

***Key words**. Economy, Region, Kashkadarya Region, Potential, Resource, Sector, Territory, Industry, Agriculture.*

Introduction.

The sustainable development of Uzbekistan's economy is fundamentally based on the effective utilization of regional potential. From this perspective, the Kashkadarya region is regarded as one of the leading regions in the national economy in terms of natural resources, agricultural potential, industrial production, and energy sectors. The region's geographical location, abundant mineral and raw material reserves, and substantial labor resources further enhance its economic significance.In this context, in order to ensure the efficient use of the existing socio-economic potential of the Kashkadarya region, including its production and investment capacity, to improve engineering and communication networks as well as social and industrial infrastructure, to promote the sustainable development of economic sectors, and on this basis to increase employment and improve living standards, the Resolution of the President of the Republic of Uzbekistan No. PQ-389 dated December 14, 2023, titled "On Additional Measures for the Comprehensive Socio-Economic Development of the Kashkadarya Region in 2024–2025" [1], was adopted.

The region is located in the southern part of Uzbekistan and represents an area of strategic importance within the national economic space. Kashkadarya region shares a border with Turkmenistan, which creates favorable conditions for the development of foreign economic relations. From a demographic perspective, the Kashkadarya region ranks among the leading regions in the republic in terms of population size.A significant proportion of the population is of working age, indicating a high level of labor potential in the region. The high share of the rural population determines the prominent role of the agricultural sector in the regional economy. Therefore, the availability of labor resources and demographic potential transforms the region into a promising territory from the standpoint of long-term economic development. Moreover, the high proportion of young people creates favorable conditions for the expansion of innovation and entrepreneurial activities.

Literature review.

Various studies have been conducted to examine the role of the Kashkadarya region in the national economy and the distinctive features of its potential. In this regard, an in-depth analysis of the economic potential of the Kashkadarya region is of significant importance for ensuring balanced development among sectors and regions at the national level, improving investment policy, and enhancing regional competitiveness.According to existing research, the Kashkadarya region is one of the key economic regions

[1] Independent Researcher, Urgenchstate University Named After Abu Rayhan Beruni (Uzbekistan)

of the Republic of Uzbekistan, characterized by abundant natural resources and a well-developed agricultural and industrial potential [2].Further studies indicate that the Kashkadarya region is one of the territories in Uzbekistan with the largest reserves of natural resources. In this regard, Kashkadarya serves as a backbone of the country's oil and gas industry [3].According to other research findings, the region possesses substantial reserves of oil, natural gas, gas condensate, construction materials, and other mineral resources. Accordingly, the oil and gas industry represents the core sector of the regional economy. In this context, the oil and gas exploration and development enterprise located in the city of Karshi is responsible for coordinating and implementing exploration activities across the entire territory of the republic [4].

Additional studies emphasize that major gas processing complexes such as Shurtanand Muborak, located in the Kashkadarya region, play a crucial role in ensuring the energy security of both the region and the country as a whole. In particular, in the Shurtan field of the Kashkadarya region, natural gas is extracted alongside oil from the Kokdumalak field in the Bukhara region [5].At the same time, the Kashkadarya region ranks among the leading regions of the country in terms of industrial production volume. Research indicates that the region demonstrates high potential across all major sectors, including industry, energy, agriculture, and tourism [6]. Within the industrial sector, the fuel and energy complex, chemical industry, production of construction materials, food processing, and light industry play a significant role.According to other researchers, energy resources, agricultural products, and industrial goods constitute the main export items in the region's foreign economic activities. The Kashkadarya fuel industry ranks first in the country in terms of gross output, producing approximately one-tenth of the national electricity and more than 7% of light industry products [7]. Products from the Kashkadarya region are competitive in foreign markets, and the geography of its exports continues to expand annually.

Research methodology.

In conducting this study, methods commonly employed in scientific research were utilized effectively. In particular, the article applies approaches such as logical reasoning, scientific abstraction, data classification, analysis and synthesis, as well as induction and deduction to examine the role and distinctive features of the Kashkadarya region in the national economy.

Analysis and results.

Summarizing these indicators, the Kashkadarya region stands out with the following macroeconomic indicators (Table 1).

Table 1. Information on the macroeconomic indicators of the Kashkadaryaregionfor 2010-2025 [8]

Indicators	Unit of measurement	2010y.	2011y.	2012 y.	2013 y.	2014 y.	2015 y.	2016 y.	2017 y.	2018 y.	2019 y.	2020 y.	2021 y.	2022 y.	2023 y.	2024 y.	2025 y
Gross regional product	Billion UZS	6944,1	8858,9	10872,1	12308,3	14631,1	17247,7	20163,9	25848,1	31690,4	39011,2	42298,6	51181,1	59822,3	71425,0	83950,0	98783,4
	Growth Rate, %	103,1	106,0	104,	105,	106,	106,	105,	103,	101,	102,	102,	107,	106,	105,	105,	106,

				6	4	7	6	6	5	7	0	0	7	7	5	9	8
Industrial output	Billion UZS	4957,5	5043,6	6076,4	6849,4	7194,7	8721,9	9632,2	109945,9	145295,5	203601,1	146123,3	187771,9	226244,4	287767,7	394881,1	478786
	Growth Rate, %	97,5	104,4	98,8	103,5	106,5	105,1	103,8	107,9	108,3	93,7	102,9	115,4	110,1	107,4	108,0	107,2
Consumer goods	Billion UZS	651,7	815,6	947,8	1498,2	1520,5	2094,3	2577,2	2549,3	2891,7	3899,8	4947,4	4660,9	3003,5	4800,5	x	x
	Growth Rate, %	109,6	102,3	108,1	102,7	105,8	110,1	112,7	91,2	113,4	134,9	110,9	95,7	106,7	102,3	x	x
Agriculture, forestry, and fisheries	Billion UZS	2912,8	4408,8	5620,2	6563,2	7899,3	9320,1	11121,0	14761,6	17685,8	20415,1	24510,3	29352,8	33384,6	39924,2	44293,5	52092,0
	Growth Rate, %	106,7	105,1	106,9	107,2	105,9	106,0	106,4	103,3	96,6	101,2	104,0	102,2	103,7	103,8	104,2	104,3
Investments in fixed capital	Billion UZS	1792,8	2265,9	3072,2	3667,8	4721,8	5894,7	7304,4	11175,3	16518,5	24462,5	20557,6	17359,1	16012,8	21138,0	32996,9	39876,0
	Growth Rate, %	67,4	108,4	117,2	103,8	114,9	112,4	108,9	129,7	112,4	131,2	76,5	77,8	80,0	117,8	145,2	106,9
Construction works	Billion UZS	699,2	791,5	997,9	1168,2	1560,0	2067,5	2560,0	2759,1	3701,1	4365,3	4832,6	6336,6	7793,8	9490,9	15099,9	17659,5
	Growth Rate, %	125,2	104,9	114,6	105,1	116,7	124,9	114,4	99,9	110,9	103,2	98,6	117,6	105,3	109,8	112,1	110,8
Retail trade turnover	Billion UZS	1325,2	1867,1	2567,6	3443,7	4250,0	5042,8	6202,9	7187,3	8818,5	10639,	13523,	13523,	18165,	21781,	26071,	30857,

											7	9	9	9	7	1	1
	Growth Rate, %	120,7	127,2	119,7	118,7	112,4	111,6	114,5	100,1	103,2	105,7	102,0	110,8	111,9	108,9	109,0	108,6
Services, total	Billion UZS	1136,7	1525,9	2003,6	2642,6	3391,1	4058,9	5137,6	5859,7	7064,1	8800,9	10349,5	12907,4	15967,7	19610,2	43255,9	54118,0
	Growth Rate, %	118,9	122,7	121,7	121,6	119,9	117,0	118,1	104,5	106,6	111,1	106,7	114,4	113,8	111,5	110,9	113,6
Foreign trade turnover	million USD	504,6	580,7	750,8	765,5	606,9	737,7	764,1	596,9	765,7	824,8	544,2	565,7	545,4	737,8	1146,9	1242,4
	Growth Rate, %	20,5	115,1	129,3	102,0	79,3	121,6	103,6	78,1	128,3	107,7	66,0	104,4	96,4	135,3	155,5	100,3
Exports	million USD	355,8	462,3	343,1	335,3	297,4	269,7	239,0	226,3	270,8	366,1	196,5	270,0	301,1	427,6	514,1	513,5
	Growth Rate, %	17,2	129,9	74,2	97,7	88,7	90,7	88,6	94,7	119,6	135,2	53,7	138,2	111,5	142,0	120,2	99,1
Imports	million USD	148,8	118,4	407,7	430,2	309,4	468,0	525,1	370,6	495,0	458,7	347,7	295,7	244,3	310,1	632,8	728,9
	Growth Rate, %	37,9	79,6	344,3	105,5	71,9	151,2	112,2	70,6	133,6	92,7	75,8	85,3	82,6	127,0	204,0	101,1
Balance	million USD	207,0	343,9	-64,6	-94,9	-12,0	-1984,4	-2861,1	-1442,2	-2242,2	-92,7	-1512,2	-25,6	56,8	1166,6	-1187,7	-2154,4
	Growth Rate, %	x	166,1	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Based on Table 1, a stable growth trend has been observed in the regional economy during 2010–2025, although certain fluctuations occurred in some years due to external and internal factors. The Gross Regional Product (GRP), which amounted to 6,944.1 billion UZS in 2010, reached 98,783.4 billion UZS by

2025. This indicates that the GRP nearly increased 14-fold over the analysis period. The growth rates of the GRP generally remained within the range of 103–107% on average, confirming the continuous development of the regional economy. Furthermore, the data indicate an accelerated growth pattern during 2021–2025.

Industrial production experienced a sharp increase during the analysis period. Industrial output, which amounted to 4,957.5 billion UZS in 2010, reached 47,788.6 billion UZS by 2025. Although a slowdown in growth rates was observed in certain years (notably 2019 and 2020), subsequent years saw a recovery and rapid expansion in the industrial sector. This trend indicates that industry is increasingly becoming a leading sector in the regional economy.

The production of consumer goods generally demonstrated a growth trend. However, in some years, there were significant fluctuations in growth rates, including periods of decline. This reflects the influence of domestic demand, inflationary processes, and population income levels. Until 2020, growth in consumer goods production was relatively stable.

Stable growth has also been observed in the agricultural sector. The sector's output, which amounted to 2,912.8 billion UZS in 2010, reached 52,092.0 billion UZS by 2025. Growth rates generally remained within the 103–107% range on average, highlighting the sector's significant contribution to the stability of the regional economy.

Investments in fixed capital were characterized by rapid growth. Investment activity was particularly high during 2017–2019 and 2024–2025. However, in 2020–2022, a slowdown in investment growth rates was observed, which can be attributed to the pandemic and macroeconomic uncertainties. In subsequent years, investment activities resumed and intensified.

The construction sector was one of the rapidly developing industries during the analysis period. The volume of construction works, which amounted to 699.2 billion UZS in 2010, reached 17,659.5 billion UZS by 2025. This indicates an increasing demand for infrastructure, housing, and industrial facilities.

Retail trade volumes reflect the growth of household incomes and consumer activity. Between 2010 and 2025, retail trade turnover increased nearly 23-fold. Growth rates generally remained within the range of 108–120% on average.

The services sector is one of the most rapidly developing areas, with its volume increasing from 1,136.7 billion UZS in 2010 to 54,118.0 billion UZS by 2025. This reflects a significant rise in the contribution and importance of the services sector to the regional economy. The services sector and the entrepreneurial environment in the region are essential for ensuring regional social stability, increasing household incomes, and diversifying the economic structure.

Some instability is observed in foreign trade turnover. Although export volumes declined in certain years, substantial growth was achieved during 2023–2025. The rapid increase in import volumes has, in most years, led to a negative foreign trade balance. This indicates that the regional economy remains dependent on imports.

Overall, the table results indicate long-term stable growth in the regional economy, diversification of economic sectors, and the increasing prominence of both the services and industrial sectors. Improving the foreign trade balance, directing investments more efficiently, and expanding the production of high value-added products remain key priorities for the future.

In recent years, particular attention has been paid to diversifying industry and expanding the production of high value-added goods. This process contributes to enhancing innovation activity in the regional economy and creating new employment opportunities.

The Kashkadarya region holds an important position in the production of agricultural products within the country. In the reporting year 2025, the share of agriculture, forestry, and fisheries in the sectoral composition of the Gross Regional Product (GRP) amounted to 31.5%, the industrial sector accounted for 17.7%, construction for 7.7%, and the services sector for 43.1% [9]. Accordingly, the agricultural and food production potential of Kashkadarya plays a crucial role in meeting the needs of the population and expanding export opportunities. This sector also serves as a key contributor to employment.

The potential of natural resources serves as a key factor in promoting the industrialization of the Kashkadarya region and enhancing its export capacity. In particular, the fuel and energy resources position the region as one of the main pillars of national energy security. The well-developed oil and gas processing industry ensures the stability of the country's industrial production.

In addition, the region has well-developed sectors in cotton production, grain cultivation, vegetable farming, horticulture, and livestock. The introduction of cluster systems in agriculture, the use of modern agro-technologies, and measures aimed at conserving water resources contribute to increasing agricultural efficiency. The development of the agro-processing industry also provides opportunities to expand the region's export potential.

In the Kashkadarya region, comprehensive reforms are being implemented to improve the investment climate and support the private sector and entrepreneurship. The establishment of free economic zones, industrial zones, and small-scale industrial parks plays a significant role in attracting investments.

The growth in the number of entrepreneurial entities, the development of the services sector, and the introduction of digital technologies contribute to the sustainable growth of the regional economy. Support for youth and women entrepreneurship positively affects regional socio-economic stability.

The development of transport and logistics infrastructure, as well as proximity to international highways and railway networks, facilitates the intensification of foreign trade relations. In this regard, the prospects for economic development in the Kashkadarya region are closely linked to the rational use of natural resources, industrial modernization, the implementation of innovations in agriculture, and increased investment in human capital.

In the short- and medium-term perspective, the development of high-tech industrial sectors, the expansion of the services sector, and the implementation of "green economy" principles are considered priority areas for the region.

At present, the economic potential of the Kashkadarya region in the national economy is distinguished by its prominence in the following areas (Table 2).

Table 2. : Directions, key characteristics, and role of the economic potential of theKashkadarya region

№	Direction of Potential	Key Characteristics	Role in the National Economy
1	Natural resource potential	Reserves of oil, gas, gas condensate, and construction materials	Leading region ensuring fuel and energy security
2	Industrial potential	Gas processing, chemical, construction materials, and food industries	High share in gross industrial output
3	Agricultural potential	Cotton, grain, livestock, and horticulture	Region ensuring food security
4	Labor resource potential	High share of young and economically active population	Key region providing workforce
5	Regional and Logistics Potential	National and Interregional Transport Routes	Region Linking Domestic and Foreign Trade Relations
6	Services sector potential	Trade, transport, education, and healthcare services	Factor of regional socio-economic stability
7	Tourism potential	Shakhrisabz – UNESCO heritage site and historical and cultural landmarks	Strategic area for tourism diversification
8	Innovation and investment potential	Free economic zones and industrial clusters	High investment attraction capacity
9	Entrepreneurial environment	Development of small businesses and private entrepreneurship	Key source of employment and income growth
10	Demographic potential	Rapid population growth	Factor expanding domestic market capacity

Based on Table 2, the Kashkadarya region occupies a distinctive position in the national economy as a strategically important and multi-sectoral potential area. It is evident that the region's economic potential is underpinned by its natural resource endowments as well as by the development of its industrial, agricultural, labor, and services sectors.

Conclusion. The potential of the Kashkadarya region serves as a crucial pillar for ensuring the national economy's energy stability, food security, employment, and regional development. Accordingly, the region emerges as a strategically important area within the national economy. Its natural resources, industrial, agricultural, and labor potential play a significant role in Uzbekistan's economic development. Consequently, the effective utilization of the region's potential, the improvement of the investment climate, and the

promotion of innovative development provide opportunities to contribute to the sustainable growth of the national economy.

List of References:

- *President of the Republic of Uzbekistan. (2023, December 14).* Resolution No. PQ-389 on Additional Measures for the Comprehensive Socio-Economic Development of the Kashkadarya Region in 2024–2025.*Retrieved from* Lex UZ *website: https://lex.uz/uz/docs/-6693577*
- *Tuyev A.Y. (2026, January). Socio-economic potential and sustainable development prospects of the Kashkadarya region.* Engineering and Economics*, (1), 311.*
- *Navotova D.I., &Toshtemirova R.N. (2024). Analysis of the economic indicators of the Kashkadarya region.* Economics and Society*, 5(120), 571.*
- *Murodova D.S. (2025). Geographical aspects of the geographic location of the Kashkadarya region.* Economics and Society*, 9(135), 185.*
- *Normatova G. (2023). Prospects and challenges of utilizing natural resources in the economy of the Kashkadarya region.* Economics and Society*, 4(107), 3.*
- *Shukurov U., &Pirimov Y. (2025). Prospects for socio-economic development of regions: The case of the Kashkadarya region.* International Scientific Journal*, 1(2), 96–99. Retrieved fromhttps://inlibrary.uz/index.php/ijsci/article/view/129590*
- *https://oefen.uz/uz/documents/slaydlar/umumiy/qashqadaryo-viloyati*
- *https://qashstat.uz/uz/rasmiy-statistika/release-calendar-2*
- *https://qashstat.uz/uploads/press25/Yahm-UZ-12-2025.pdf*

DEVELOPMENT OF NATIONAL CULTURAL HERITAGE TOURISM IN UZBEKISTAN

H.Q.SAMAROV[1]

ABSTRACT

The article is devoted to identifying existing opportunities for organizing and developing national cultural heritage tourism in the Republic of Uzbekistan, and recommendations are made for the effective development of national cultural heritage tourism from these opportunities.

Keywords- *Concept, Values, Expedition, Region, Territory, Craftsman, Craftsman, Ritual, Civilization, Daylight, Catalog, Leisure.*

I. INTRODUCTION

National cultural heritage is a wealth that has emerged at various historical stages of the nation's development and is associated with the life of the nation. Therefore, it serves as a basis and source of experience for the nation in creating its own future. Complete works have been written about the wealth of the national cultural heritage of our people. These works are historical documents that our people have preserved their ancient traditions, customs, national architectural art, national culture and national games like the apple of their eye. The use, opportunities and problems of this heritage wealth in national cultural tourism in Uzbekistan have not yet been studied.

II. LITERATURE REVIEW

Currently, our country has adopted legal and regulatory documents for the organization and development of national cultural heritage tourism. The Resolution of the President of the Republic of Uzbekistan “On Approval of the Concept of Further Development of National Culture in the Republic of Uzbekistan” adopted on November 28, 2018 states that “ the main goal is to preserve and develop the high spiritual values and spiritual heritage of our people formed over the centuries, and to develop them in harmony with world culture, to widely promote national culture, and to enhance its place in the international cultural space”[1].

National cultural heritage tourism is a new type of tourism in our country, and there are scientific conclusions from foreign scientists that this type is promising [5.6.7.8.9.10.]. Taking these aspects into account, we are conducting organizational and economic research on the organization and development of this type in Uzbekistan [13.14.15.16.].

III. RESEARCH METHODOLOGY

Methods of scientific expedition research, analytical, general scientific, theoretical and organizational, observational methods were used.

[1] Director of the Directorate for the Repair and Operation of the Registan Ensemble, PhD

IV. ANALYSIS AND RESULTS

By identifying and registering, observing and observing the activities and products of craftsmen and craftsmen in workshops, it can be concluded that most of the resources and objects registered for use in national cultural heritage tourism have the following possibilities for use: in domestic tourism, in excursion and familiarization tourism, and in international tourism as additional tourist resources (inviting tourists , spending free time meaningfully , taking photos or videos, etc.).

1. The possibility of creating legal and normative foundations for the organization and development of national cultural heritage tourism in Uzbekistan (Decrees and Resolutions of the President of the Republic of Uzbekistan Shavkat Mirziyoyev on the development of tourism in Uzbekistan).

2. The possibility of the existence of great potential for national cultural heritage tourism resources in Uzbekistan (directions, sectors of national heritage resources).

3. The possibility that highly qualified specialists in the tourism sector are being trained at many universities and institutes in Uzbekistan.

4. Opportunities for conducting scientific research in the areas of solving urgent problems, such as creating a Program for the development of the use of the national heritage of our people in the development of international tourism in Uzbekistan, developing promising directions and practical methods.

5. Uzbekistan In the Republic international of tourism development , to him was of the relationship positive towards shift with is determined . Our republic conditions , especially small business and private entrepreneurship in development international of tourism opportunities other to sectors than very big as This is considered because of in the republic political , economic sustainability to tourism entrepreneurs wide road opening with together , him fast development opportunities is creating .

Uzbekistan now Central Asia in the region economy stable developing going from countries one to himself foreign investors , businessmen and tourists attraction doer from the centers one is considered in Uzbekistan national cultural inheritance tourism development in our country above cited contributing factors adds .

6. The main goal of the policy of territorial and regional development of the tourism sector in Uzbekistan is to bring the interregional level of socio-economic development within the country as close as possible. The experience of countries with developed tourism sectors shows that the correct placement of production forces in regions and territories, as well as the organization of new tourism destinations in these regions and territories, is one of the most effective and promising directions for the development of the tourism sector.

7. Another opportunity for organizing and developing national cultural heritage tourism in Uzbekistan is related to the hospitality of our people. As is known, the production of handicraft (craftsmanship) products from national heritage resources is mainly carried out in the homes of craftsmen. From our observations and interviews with craftsmen so far, it became clear that they do not in any way prevent tourists from visiting their homes where their workshops are located. On the contrary, they welcome them with open arms, even giving guests gifts from their products. Future tour operators of national cultural heritage tourism should skillfully use this opportunity.

8. Another opportunity for organizing and developing national cultural heritage tourism in Uzbekistan is the popularity and openness of our people's national games, national customs and national ceremonies. For

example, since our national game kupkari-ulak and national wrestling games are mainly organized at weddings, tourists can be freely invited to these games.

9. Another promising opportunity in organizing and developing national cultural heritage tourism in Uzbekistan is that there is a great potential to attract and invite tourists from national cultural heritage tourism to other types of tourism.

10. The opportunity to organize excursions to national heritage sites in the effective use of free time of international tourists. Choosing and sorting in any interesting and effective way of spending free time makes a person interested and chooses what he has not seen first. In tourism, excursion services and activities are called the heart of tourism [11]. If we pay attention, excursion activities played an important role in the formation of the first centers of human civilization. Currently, the development of tourism in each country depends on the level of organization and conduct of excursion activities [10].

According to the conclusions of the famous excursionist A. Emelyanov, one of the foundations of tourism development is closely related to the level of organization and implementation of excursion and guide services. In order to improve the quality and efficiency of services in hotels in Samarkand, the inclusion of excursion and guide services on national heritage sites in the structure of hotel services was considered one of the most important and urgent issues.

Most of the hotels in Samarkand are organizing and conducting excursion services. These excursions are mainly organized to the main objects of our city, historical monuments and places of pilgrimage. Tourist companies in the city of Samarkand also organize excursions to our city and places of pilgrimage. This situation is natural in any case. In the development of tourism, all countries use this method more.

One of the most important issues in the subject of our research is that in order to improve the quality and efficiency of services in hotels, it is necessary to first take into account the first opportunities. The first opportunity requirement is to determine the free time of tourists in hotels when providing services to them. We believe that organizing tourist excursions to various destinations in the national heritage would be the right direction to spend this free time in an interesting and fun way.

As is known, the peak tourist season for Uzbekistan is April-October. At this time, the daylight hours in our country reach 12-13 hours. In our opinion, it would be appropriate to offer tours of national cultural heritage tourism during this time, when there is more time than is provided to tourists. International tourism experience shows that European and American tourists are more interested in the historical monuments and culture of our people. In particular, interest in seeing the historical culture, customs, national crafts and lifestyle of our people, and recently in our national art and national games, has been growing significantly on an international scale.

According to the World Tourism Organization, in recent years, the interest of the population of countries in historical culture, national traditions, culture, crafts, arts and national games has been growing significantly in international tourism [5]. We must take advantage of this internationally recognized interest in a timely manner. Because we know well that the past history and culture of the peoples living in Central Asia, especially in Uzbekistan, are sufficiently recognized throughout the world. We believe that it would be expedient to organize interesting and meaningful excursions in the directions of the national heritage of our people in hotels in our historical cities in order to improve the quality of services, increase the types of services and increase the efficiency of services.

In order to improve the quality and efficiency of services in hotels in Samarkand, creating complete catalogs on a wide range of topics of national cultural heritage tourism tourist excursions in hotels and advertising this catalog is one of the most promising directions for the development of international national

cultural heritage tourism in Samarkand and ensures that international tourists spend their free time effectively and interestingly.

11. Opportunities for conducting scientific research on the development of national cultural heritage tourism based on the guidelines set out in the Decree of the President of the Republic of Uzbekistan Shavkat Mirziyoyev “On measures to further improve the system of public administration in the fields of tourism, sports and cultural heritage ”[3] and the Resolution “On the organization of the activities of the Ministry of Tourism and Sports”[4] .

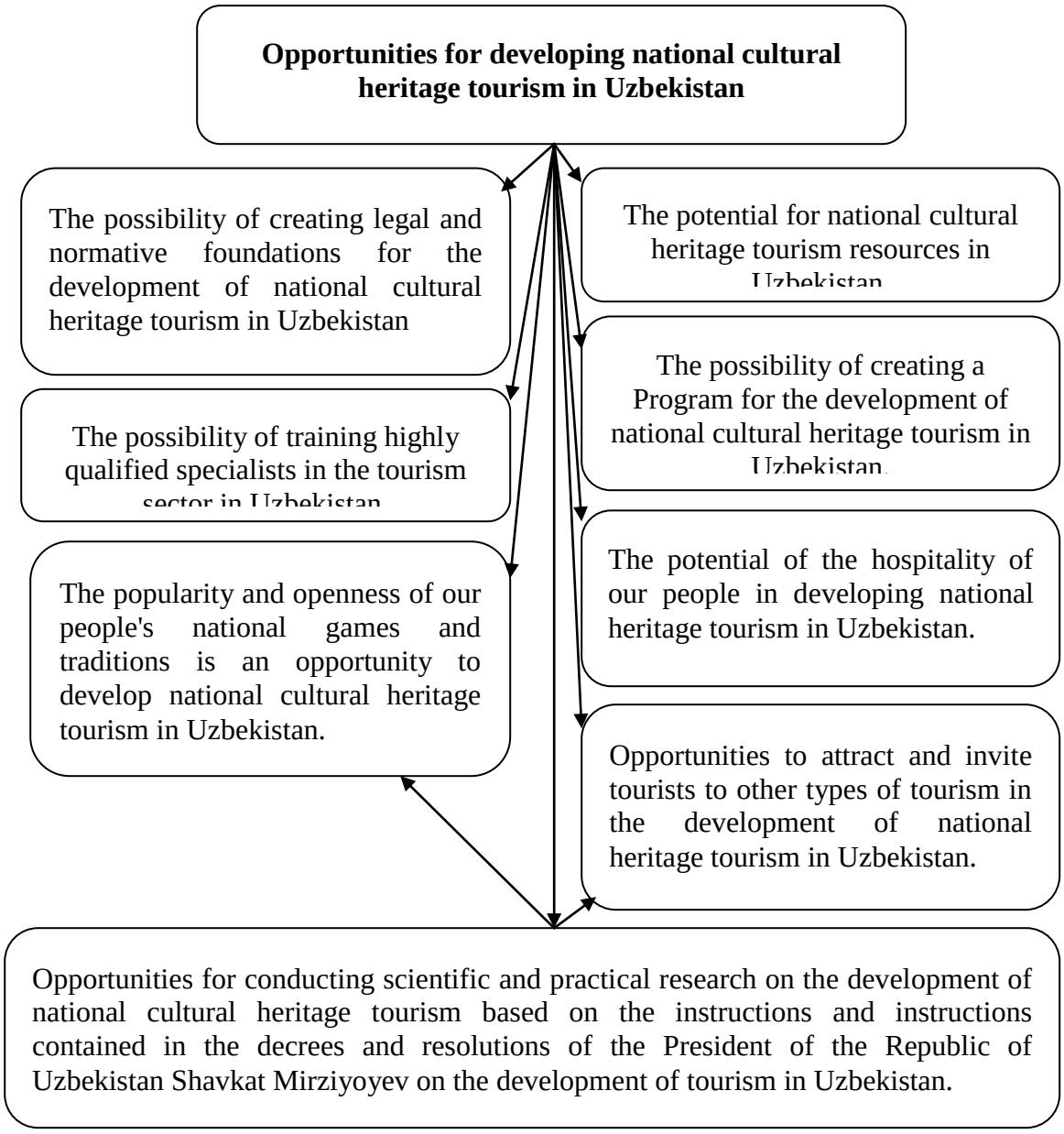


Figure 1. Opportunities for developing national cultural heritage tourism in Uzbekistan

12. Opportunities to create infrastructure for national cultural heritage tourism, taking advantage of the privileges established in the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan “On approval of the Regulation on the procedure for the use of tangible cultural heritage objects”[2].

Uzbekistan has unique opportunities for developing international tourism through the use of national heritage resources, creating promising, integrated directions (Figure 1). These opportunities can be exploited by tourism entrepreneurs in cooperation.

V. CONCLUSION/RECOMMENDATIONS

1. There are unique opportunities in Uzbekistan for the development of international tourism in the use of national heritage resources, which form promising, integrated directions. These opportunities can be considered and implemented in a comprehensive manner by government organizations operating in the tourism sector of our country, professors and scientists from universities, institutes, colleges, entrepreneurs in the tourism sector, managers of tourism companies, hotels, and national tourism advertising agencies.

2. We need to launch comprehensive scientific research on each identified opportunity in organizing and developing national cultural heritage tourism in Uzbekistan and develop recommendations for practice .

3. A program should be developed to train private entrepreneurs in the organization and development of national cultural heritage tourism in Uzbekistan.

REFERENCES

- *Resolution of the President of the Republic of Uzbekistan “On approval of the Concept for the further development of national culture in the Republic of Uzbekistan” adopted on November 28, 2018;*
- *Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulation on the procedure for the use of tangible cultural heritage objects", Tashkent, October 18, 2019, No. 881;*
- *Decree of the President of the Republic of Uzbekistan Shavkat Mirziyoyev “On measures to further improve the system of public administration in the fields of tourism, sports and cultural heritage” [1](Tashkent, April 6, 2021, No. PF-6199);*
- *Mamatkulov H.M., Bektemirov A.B., Tukhliev I.S., Norchaev A.N. International tourism, Textbook. Tashkent, "Scientific Society of Philosophers of Uzbekistan", 2009.-192 p.;*
- *Aleksandrova A. Yu., International Tourism, Moscow: Knorus, 2010. 492 p.;*
- *Babkin A. V., Special Types of Tourism. Rostov-on-Don: Phoenix, 2008. 252 p.;*
- *Birzhakov M. B., Introduction to Tourism. St. Petersburg: Gerda Publishing Trade House, 2006;*
- *Bogolyubov V. S., Tourism Economics. A Textbook. Moscow: Academy, 2005. 192 p.;*
- *Voronkov L. P., "Tourism, Hospitality, Service," Dictionary and Handbook. Moscow 2002;*
- *Dolzhenko G.P., Excursion Business, Textbook, Publishing Center MART-M: Rostov-on-Don, 2006.-304 p.;*
- *Yemelyanov B.V., Fundamentals of Excursion Management. Textbook, CRIB, "Tourist", Moscow, 1985,-218 p.;*
- *Zdornov A.B. Tourism Economics. Textbook. – Moscow: Finance and Statistics, 2005. – 272 p.;*
- *Samarov H. K., Goals and objectives of organizing and developing new national heritage tourism in Uzbekistan . SERVICE, vol., No. 4, Samarkand, 2020.-12-16 p.;*
- *Samarov Kh. Q., " Cultural inheritance objects in the field of tourism of use innovative directions " . S ERVIS j., No. 2, Samarkand, 2021. P.129-136.*

AN ECONOMIC DEVELOPMENT MODEL FOR RAILWAY PASSENGER TRANSPORT ENTERPRISES IN UZBEKISTAN

Eshboyev Ulugbek Farxodovich[1]

ABSTRACT

In this study is devoted to the development of an economic development model for railway passenger transport enterprises in Uzbekistan, taking into account the sector's social significance, institutional regulation, and economic efficiency constraints. Railway passenger transport plays a crucial role in ensuring population mobility, regional connectivity, and social stability; however, its development is characterized by persistent imbalances between demand and supply, limited tariff flexibility, high operating costs, and strong dependence on state support mechanisms.

keywords: *The Organizational and Economic Basis of The Railway Transport System,Imitativemodel, Cargo Delivery, Transport Logistics System, Hierarchy of Tasks, Transport Complex, Transport-Expedition, Transit Potential, Intermodal And Multimodal Types of Transport, Services Market, Railway Transport Infrastructure,Main Directions, Logistic Concept Simulation Model.*

INTRODUCTION

The relevance of developing a comprehensive model of economic development of railway transport in Uzbekistan is determined by the growing strategic role of railways in ensuring sustainable economic growth, regional integration, and national competitiveness in the context of structural transformation and globalization. As Uzbekistan pursues large-scale economic reforms aimed at industrial modernization, export diversification, and logistical integration into global value chains, the railway transport system increasingly becomes a backbone infrastructure that directly influences production efficiency, territorial cohesion, and long-term development stability.

Railway transport in Uzbekistan performs not only a transport function but also a systemic economic role, linking industrial clusters, agricultural regions, energy resources, and cross-border trade corridors. However, despite significant investments in infrastructure renewal and rolling stock modernization, the sector continues to face structural challenges related to inefficient resource allocation, outdated economic management mechanisms, low productivity of fixed assets, and limited integration of innovation-driven development instruments. These challenges indicate that further development of the railway sector cannot rely solely on infrastructural expansion or administrative regulation, but requires a scientifically grounded economic development model capable of ensuring balanced, efficient, and innovation-oriented growth.

The urgency of this research topic is reinforced by the increasing complexity of the economic environment in which Uzbekistan's railways operate. Rising competition from road and air transport, volatility of freight flows, growing demand for logistics services, and the need to comply with international transport standards necessitate a transition from fragmented decision-making to a system-based economic model. Such a model must integrate investment policy, tariff mechanisms, productivity growth, technological renewal, and institutional coordination within a single analytical framework. Without this integrated approach,

[1] Doctoral Researcher Tashkent State University of Economics

the railway sector risks entering a state of economic inertia, where existing capacities are underutilized and development potential remains unrealized.

Furthermore, Uzbekistan's geographical position as a landlocked country significantly amplifies the importance of railway transport for reducing logistics costs and strengthening transit potential. The effectiveness of international transport corridors, including Central Asia–South Asia, China–Europe, and Caspian routes, depends largely on the economic sustainability and operational efficiency of the national railway system. In this regard, the development of an economic model tailored to Uzbekistan's specific institutional, spatial, and industrial conditions becomes a critical scientific and practical task.

From an academic perspective, the topic is highly relevant due to the limited availability of applied economic models that adequately reflect the interaction between infrastructure development, industrial demand, state regulation, and innovation dynamics in transition economies. Existing models often focus on technical or financial aspects in isolation, failing to capture the systemic economic nature of railway transport. This research aims to bridge that gap by proposing an integrated economic development model that reflects real production processes, investment cycles, and market signals within Uzbekistan's railway sector.

ANALYSIS OF LITERATURE ON THE SUBJECT

The theoretical and methodological foundations of the development of the railway transport system are reflected in the scientific research of a number of local and foreign scientists. According to the English economist Anthony Venables, the transport complex is a set of national economic networks specialized in meeting the needs of social production for transporting goods and passengers [4].

According to D. Bauersox, he paid special attention to the problems of organizing multimodal and intermodal cargo transportation, including the issues of economic efficiency and advantage of cargo transportation compared to traditional methods. At the same time, the author specifically mentions the transport system, which includes transport networks, vehicles and transport companies [5].

According to the scientists of our country, G. Samadov, A. Zoxidov, A. Gulamov and M. Ravshanov, "the transport system is a complex of transport facilities and infrastructures that are interconnected in the process of delivering goods and passengers to their destination, i.e. "The management system of all types of transport is understood in order to effectively manage interrelated transport sectors, labor resources and the country's economy" [6].

RESEARCH METHODOLOGY

The relevance of developing a comprehensive model of economic development of railway transport in Uzbekistan is determined by the growing strategic role of railways in ensuring sustainable economic growth, regional integration, and national competitiveness in the context of structural transformation and globalization. As Uzbekistan pursues large-scale economic reforms aimed at industrial modernization, export diversification, and logistical integration into global value chains, the railway transport system increasingly becomes a backbone infrastructure that directly influences production efficiency, territorial cohesion, and long-term development stability.

Railway transport in Uzbekistan performs not only a transport function but also a systemic economic role, linking industrial clusters, agricultural regions, energy resources, and cross-border trade corridors. However, despite significant investments in infrastructure renewal and rolling stock modernization, the

sector continues to face structural challenges related to inefficient resource allocation, outdated economic management mechanisms, low productivity of fixed assets, and limited integration of innovation-driven development instruments. These challenges indicate that further development of the railway sector cannot rely solely on infrastructural expansion or administrative regulation, but requires a scientifically grounded economic development model capable of ensuring balanced, efficient, and innovation-oriented growth.

The urgency of this research topic is reinforced by the increasing complexity of the economic environment in which Uzbekistan's railways operate. Rising competition from road and air transport, volatility of freight flows, growing demand for logistics services, and the need to comply with international transport standards necessitate a transition from fragmented decision-making to a system-based economic model. Such a model must integrate investment policy, tariff mechanisms, productivity growth, technological renewal, and institutional coordination within a single analytical framework. Without this integrated approach, the railway sector risks entering a state of economic inertia, where existing capacities are underutilized and development potential remains unrealized.

Furthermore, Uzbekistan's geographical position as a landlocked country significantly amplifies the importance of railway transport for reducing logistics costs and strengthening transit potential. The effectiveness of international transport corridors, including Central Asia–South Asia, China–Europe, and Caspian routes, depends largely on the economic sustainability and operational efficiency of the national railway system. In this regard, the development of an economic model tailored to Uzbekistan's specific institutional, spatial, and industrial conditions becomes a critical scientific and practical task.

From an academic perspective, the topic is highly relevant due to the limited availability of applied economic models that adequately reflect the interaction between infrastructure development, industrial demand, state regulation, and innovation dynamics in transition economies. Existing models often focus on technical or financial aspects in isolation, failing to capture the systemic economic nature of railway transport. This research aims to bridge that gap by proposing an integrated economic development model that reflects real production processes, investment cycles, and market signals within Uzbekistan's railway sector.

ANALYSIS AND RESULTS

The analysis of the economic development of railway transport in Uzbekistan is based on a comprehensive assessment of key performance indicators reflecting production capacity, investment activity, operational efficiency, and institutional effectiveness. The results demonstrate that while the railway sector continues to play a strategic role in national economic development, its economic performance remains constrained by structural inefficiencies and uneven resource utilization.

The analysis of freight and passenger turnover indicates a generally positive long-term trend, driven by industrial expansion, urbanization, and the growing demand for interregional connectivity. However, this growth is characterized by significant volatility, reflecting fluctuations in industrial output, export flows, and transit demand. The results show that existing infrastructure capacity is not fully utilized, particularly on secondary routes, which reduces the overall return on capital investments and weakens economic efficiency.

Investment analysis reveals that capital expenditures in the railway sector have increased over the analyzed period, primarily directed toward infrastructure modernization and rolling stock renewal. Despite this, the results indicate a lag between investment growth and improvements in productivity. The calculated

indicators of capital productivity and asset turnover remain below their potential levels, suggesting that investment decisions are not always aligned with economic performance objectives. This finding highlights the absence of an integrated economic development model that coordinates investment planning with demand forecasts and efficiency targets.

The assessment of cost structure and tariff performance demonstrates that operating costs continue to grow at a faster rate than revenues, particularly due to energy consumption, maintenance expenses, and labor costs. Although tariff regulation plays an important role in ensuring social accessibility, the analysis shows that limited tariff flexibility constrains revenue generation and reduces incentives for efficiency improvement. Correlation analysis confirms a moderate positive relationship between tariff adjustments and revenue growth, while excessive cost growth negatively affects overall financial sustainability.

Regression analysis provides evidence of statistically significant relationships between key economic variables. Investment volume and asset utilization show a positive impact on transport output and revenue, while inefficiencies in labor productivity and infrastructure loading exert a negative effect on economic performance. These results confirm that economic development of railway transport depends not only on investment scale, but also on the effectiveness of resource allocation and management mechanisms.

Based on the empirical findings, an integrated economic development model for railway transport in Uzbekistan is proposed. The model emphasizes the coordination of investment policy, tariff mechanisms, productivity growth, and institutional regulation within a unified framework. Scenario analysis indicates that under an optimized investment and tariff coordination scenario, railway transport output and revenue growth rates could significantly exceed baseline projections, while cost growth would be contained through improved asset utilization and productivity gains. The main commodities transported include coal, grain, oil, ore, mineral fertilizers and other bulk bulk and liquid cargoes. (Table 1). As can be seen from the data in the table, the main part of the cargo transported by railway transport is the products of the mining industry (coal, oil and oil products, ferrous and non-ferrous metals, ores).

Table 1 : **Volume of transportation of certain types of cargo in railway transportthousand tons**

Indicators	2017	2018	2019	2020	2021	2022	2023
Coal	3 971.0	3 712.7	442.9	5 632.6	5 231.0	4 459.2	5 673.8
Oil and oil products	10,773.9	10,661.4	10,961.9	6 769.4	6 156.2	5 951.6	5 372.2
Black and non-ferrous metals	959.5	887.2	812.7	1 079.3	1 280.9	1 113.2	1 054.9
Chemical and mineral fertilizers	4 304.2	4 381.3	4 049.8	3 451.4	3 602.6	4 210.9	4 641.7
Construction goods	7 728.7	6 690.3	6 329.4	5 475.3	5 575.5	4 071.9	5 607.7
Cement	5 325.7	5 514.1	4 846.4	4 866.4	5 112.0	5 044.5	4 582.1
Wood products	46.3	21.2	18.9	27.1	31.2	19.7	23.0
Grains and grain products	1 266.9	1 269.6	1 662.4	1 737.1	1 645.2	1 898.6	2 000.4
Total	**34 376.2**	**33 137.8**	**29 124.4**	**29,038.6**	**28,634.6**	**26,769.6**	**28,955.8**

Table 1 presents the dynamics of railway cargo transportation volumes in Uzbekistan by major commodity groups over the period 2017–2023. The data reveal significant structural changes in freight

composition, overall volume fluctuations, and varying resilience of cargo categories to external economic shocks.

The total volume of cargo transported by rail shows a declining trend over the analyzed period, decreasing from 34,376.2 thousand tons in 2017 to 28,955.8 thousand tons in 2023, which corresponds to an overall reduction of approximately 15.8%. The sharpest decline occurred between 2018 and 2020, reflecting disruptions in industrial production, construction activity, and trade flows, particularly during the COVID-19 period. Although a partial recovery is observed in 2023, total volumes have not yet returned to pre-2019 levels, indicating persistent structural constraints in railway freight demand.

Coal transportation demonstrates high volatility. After a substantial drop in 2019, volumes increased sharply in 2020 and remained relatively high in subsequent years, reaching 5,673.8 thousand tons in 2023. This growth reflects increased reliance on coal for energy security and industrial use, emphasizing the strategic role of railways in supporting the energy sector.

In contrast, the transportation of oil and oil products shows a consistent downward trend, declining from 10,773.9 thousand tons in 2017 to 5,372.2 thousand tons in 2023, a reduction of nearly 50%. This decrease may be attributed to changes in energy consumption patterns, substitution by alternative transport modes, and shifts in domestic refining and distribution logistics.

The volumes of black and non-ferrous metals remain relatively stable with moderate fluctuations, peaking in 2021 before declining slightly in subsequent years. This stability indicates sustained demand from metallurgy and manufacturing sectors, though the absence of strong growth suggests limited expansion in metal-intensive industries.

Transportation of chemical and mineral fertilizers exhibits a positive long-term trend, especially after 2020, reaching 4,641.7 thousand tons in 2023. This growth reflects increased agricultural production and export orientation, reinforcing the importance of railways in supporting agro-industrial development.

Cargo volumes of construction goods and cement declined noticeably during 2019–2022, reflecting reduced construction activity and investment slowdown. However, the recovery observed in 2023 indicates renewed infrastructure and housing development, with railways regaining importance in bulk construction material transport.

Transportation of grain and grain products shows steady growth throughout the period, increasing from 1,266.9 thousand tons in 2017 to 2,000.4 thousand tons in 2023. This trend highlights the expanding role of agriculture and food security priorities, where rail transport provides cost-efficient long-distance logistics.

Overall, the analysis indicates that Uzbekistan’s railway freight transport is undergoing a structural transformation, with declining dependence on oil products and increasing importance of energy, agricultural, and fertilizer cargoes. These shifts underline the need for a more flexible and economically optimized railway development model capable of adapting infrastructure capacity, tariff mechanisms, and investment priorities to changing cargo structures.

In 2019, the volume of total investments in the transport system was 6%, which decreased by 2.5 times compared to 2009, the volume of investments involved in railway transport, the main artery of our country's economy, increased by 24% in 2014-2016 and increased by 24% in 2017-2019. and it decreased by 18% in years (Table 3).

Based on the results of the analysis, in 2021, foreign loans under the guarantee of the Republic of Uzbekistan took the main part of the investments attracted to JSC "Uzbekistan Railways" by approximately 40%, followed by private funds at 35% [11].

In our opinion, the following should be the main directions of attracting investments to the railway transport system:

development of new forms of cooperation with foreign transport and logistics companies;

participation in investment projects by selling and renting assets of "Uzbekistan Railways" JSC, attracting real estate;

the use of public-private partnership mechanisms that allow to combine the forces of the state and business in the implementation of the tasks of the development of the country's railway network.

Table 2 : **The volume of investments involved in the activities of JSC "Uzbekistan Railways".million dollars**

Project initiator and funding sources	**Years**					
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
Community funds	379.28	386.77	251.40	252.99	212.05	205.64
Dalvat budget	109.88	85.11	61.64	72.92	66,28	68.04
Foreign loans under the guarantee of the Republic of Uzbekistan	212.12	133.61	126.86	81,91	126.55	226.99
Commercial bank loans	50.0	0.0	17.41	47.03	20.00	1.36
Foreign direct investment	0.0	12.60	29.78	61.48	53.66	51.25
To the funds of the Uzbek Republic Recovery and Development Fund	79.90	116.08	40,23	86.92	36.62	22.73
Total	**831.18**	**734.17**	**527.32**	**603.25**	**515.16**	**576.00**

The extensive nomenclature of transport-logistics services and their wide range of possible changes in quality, the impact they can have on the competitiveness of services and the value of spending, while other factors are important for the enterprise to provide logistics services to consumers. requires having a clear, specific strategy in the field of display. A comparative analysis of freight costs by types of transport is presented.

At the same time, certain types of railway transport activities, i.e. infrastructure, trunk railway network services, power supply systems and devices, locomotive management, etc., have retained their monopolistic nature due to technological reasons. [14]. Reorganization of Uzbekistan's railway transport created initial conditions for quality management of this network and introduction of optimal market structure. The supply and demand factors influencing the passenger transport activity of railway transport were proposed below (Figure 1).

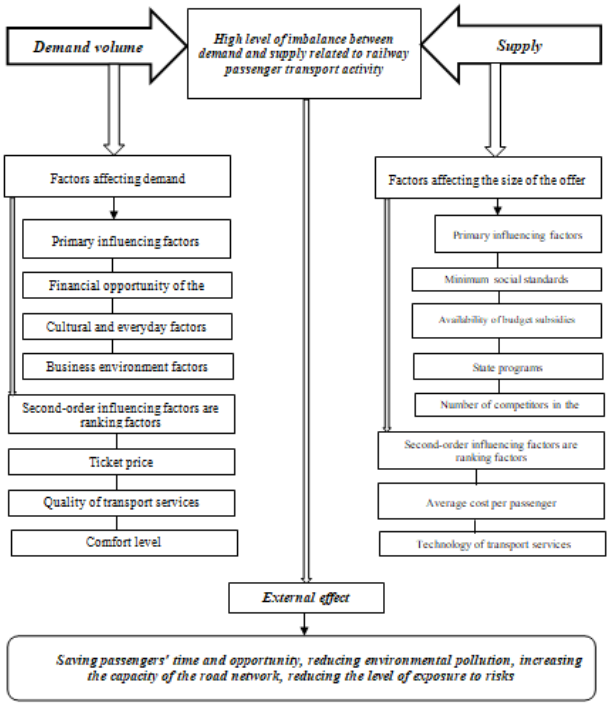


Figure 1. Supply–Demand Imbalance Factors in Railway Passenger Transport Enterprises[1]

Figure 1 illustrates the structural interaction between demand and supply factors influencing railway passenger transport activity, emphasizing the existence of a high level of imbalance between these two components. The diagram demonstrates that passenger railway services are shaped not by isolated variables, but by a complex system of economic, social, institutional, and technological factors that jointly determine transport volumes and service performance.

On the demand side, passenger transport demand is influenced primarily by socio-economic conditions. Key primary factors include the financial capacity of the population, which directly affects the ability to pay for transport services, as well as cultural and everyday mobility patterns that shape travel frequency and mode choice. In addition, business environment factors, such as employment distribution and regional economic activity, play a significant role in generating passenger flows. These primary determinants form the fundamental demand base for railway services.

Secondary demand factors are presented as ranking variables that influence passengers' modal preferences rather than absolute demand. These include ticket price, quality of transport services, and comfort level. Although these factors may not generate demand independently, they significantly affect passengers' decisions to choose railway transport over alternative modes. Improvements in service quality and comfort can therefore stimulate latent demand and enhance the competitiveness of railways in the passenger transport market.

[1] Author development.

On the supply side, the figure highlights the dominant role of institutional and regulatory factors in shaping the volume and structure of railway passenger services. Primary supply factors include minimum social standards, availability of budget subsidies, and state transport programs, which reflect the socially oriented nature of railway passenger transport. Unlike purely commercial transport services, railway passenger operations are often constrained by public service obligations and pricing regulations. The number of competitors in the passenger transport market also influences supply conditions, particularly in terms of service differentiation and efficiency.

Secondary supply factors include average cost per passenger and the technological level of transport services. These factors determine operational efficiency and capacity utilization. High unit costs and outdated technologies limit the ability of railway operators to expand service volumes without additional state support, thereby reinforcing supply-side rigidity.

A central element of the figure is the external effect generated by railway passenger transport. These effects include time savings for passengers, reduced environmental pollution, increased capacity of the road network, and lower exposure to transport-related risks. The presence of significant positive externalities explains why market mechanisms alone are insufficient to achieve equilibrium between supply and demand, justifying state intervention through subsidies and regulatory support.

Overall, the figure demonstrates that the imbalance between supply and demand in railway passenger transport arises from the interaction of social obligations, economic constraints, and external effects. This analytical framework provides a theoretical basis for developing economic mechanisms aimed at improving coordination between demand and supply while accounting for the broader socio-economic benefits of railway passenger transport.

CONCLUSIONS AND SUGGESTIONS

The research confirms that railway transport plays a strategically important role in Uzbekistan’s socio-economic development; however, its economic performance is constrained by structural imbalances between demand and supply, limited efficiency of resource utilization, and strong dependence on institutional regulation. The analysis demonstrates that both freight and passenger railway transport are influenced not only by market factors, but also by social obligations, external effects, and state policy priorities. As a result, the development of railway transport cannot be effectively guided by isolated investment or tariff decisions, but requires an integrated economic development model.

The results show that demand for railway transport is shaped primarily by macroeconomic conditions, income levels, industrial and agricultural activity, and mobility patterns of the population. At the same time, supply is largely determined by regulatory constraints, budget subsidies, technological capacity, and cost structure. The persistence of imbalance between demand and supply indicates that existing economic mechanisms are insufficiently flexible and weakly coordinated. In particular, limited tariff differentiation, suboptimal investment allocation, and slow technological renewal reduce the responsiveness of railway services to changing demand conditions.

Based on the findings, several key suggestions are proposed. First, it is necessary to introduce a model-based approach to economic development planning in railway transport, integrating investment policy, tariff mechanisms, productivity targets, and demand forecasting within a single analytical framework. This would allow decision-makers to align infrastructure development with real transport needs and efficiency objectives.

Second, tariff policy should be gradually transformed toward economically justified and differentiated pricing, while preserving social accessibility through targeted subsidies. Such an approach would improve revenue stability, enhance cost recovery, and create incentives for service quality improvement without undermining social objectives.

Third, priority should be given to improving asset utilization and labor productivity, rather than focusing exclusively on expanding physical infrastructure. Technological modernization, digital management tools, and performance-based planning can significantly reduce average costs per passenger and increase operational efficiency.

Fourth, given the presence of substantial positive external effects, state support for railway passenger transport should be linked to measurable socio-economic outcomes, such as time savings, environmental benefits, and congestion reduction. This would increase the effectiveness and transparency of budget subsidies.

In conclusion, the proposed economic development model provides a scientifically grounded basis for enhancing the efficiency, sustainability, and competitiveness of Uzbekistan's railway transport system. Its implementation would contribute to balanced demand–supply coordination, improved financial performance, and stronger integration of railway transport into the national economic development strategy.

REFERENCES

- *https://data.worldbank.org/indicator/is.air.good.mt.k1*
- *Decree of the President of the Republic of Uzbekistan dated February 28, 2022 "On the development strategy of New Uzbekistan for 2022-2026" No. PF-60. //www.lex.uz.*
- *Address of the President of the Republic of Uzbekistan to the Oliy Majlis. January 24, 2020.*
- *Venables, AJ (2007). Evaluating Urban Transport Improvements: Cost-Benefit Analysis in the Presence of Agglomeration and Income Taxation. Journal of Transport Economics and Policy, 41:173–188 p.*
- *Kovrijnykh IV (2016) Analysis of the effectiveness of administration and organization / IV Kovrijnykh. – Barnul: AF SibAGS – 86s.*
- *Zohidov A.A. (2018) Improving the effective management mechanism of the Central Asian transport system. Iqt. science. doc. ...dis. Autoref., Tashkent.*
- *Gulamov A.A. Improving the methodology of economic evaluation of the fixed capital of the railway company (in the example of JSC "Uzbekiston temir yollari"). Iqt. science. doc. ...dis. Autoref., Tashkent 2020.*
- *Yarashova V.K. Macroeconomic aspects of the development of the transport system of Uzbekistan. Iqt. science. doc. ...dis. Autoref., Tashkent 2022.*
- *Rakhimov H.Sh. Increasing the economic efficiency of the development of the country's transport infrastructure (in the example of railway transport infrastructures). Iqt. science. Doctor of Philosophy diss. Abstract, Tashkent 2021.*
- *Frederick Starr S., Filat Yildiz, Martina Reiser etc. The New Silk roads: Transport and trade in Greater Central Asia. (2007) Monograph Central AsiaCaucasus Institute & Silk Road Studies Program, Washington, DC: Johns Hopkins University-SAIS. - 514 p.*

ISSUES OF IMPROVING THE EFFECTIVENESS OF FINANCIAL MANAGEMENT IN STATE SUPPORT FOR CIVIL SOCIETY INSTITUTIONS

Khusanova Gulsum Bakhtiyorovna[1]

ABSTRACT

This article examines issues related to improving the effectiveness of financial management in the process of state support for civil society institutions. It analyzes approaches to strengthening transparency and accountability in the allocation of budget funds and grants, implementing results-based budgeting (indicator-based planning and monitoring), improving subsidy and social contracting mechanisms, assessing cost-effectiveness, and managing risks. In addition, the article develops practical recommendations for enhancing financial discipline through digital oversight and open data (e-portal, electronic reporting), aligning audit and internal control systems, and using output–outcome indicators to measure performance.

Keywords*: Civil Society Institutions, State Support, Financial Management, Transparency, Accountability, Results-Based Budgeting, Subsidy, Grant, Social Contracting, Monitoring And Evaluation, Audit, Risk Management, Digital Platform, Open Data.*

Introduction

Improving the effectiveness of financial management in the state support of civil society institutions is highly relevant today from the perspective of social development and strengthening cooperation between the state and society. Non-governmental non-profit organizations (NGOs), public associations, and other civil society actors directly participate in identifying the population's social needs, supporting vulnerable groups, promptly addressing local problems, and introducing social innovations into practice. Under conditions of limited state resources, ensuring that funds allocated to these institutions are targeted, rational, and results-oriented is directly linked to social stability and service quality.

In a context where the volume of budget funds, grants, subsidies, and social contracts allocated by the state is increasing, the tightening of transparency and accountability requirements is a natural process. If openness is insufficient in the distribution and execution of funds, inefficient spending of resources, duplicate financing, conflicts of interest, or corruption-related risks may arise. Therefore, strengthening financial management, introducing selection and evaluation systems based on clear criteria, and ensuring that every unit of currency turns into a tangible social result become urgent priorities.

Applying the principles of results-based budgeting to the financing of civil society institutions makes it possible to shift from the approach of "spent" to the approach of "what results were achieved." In this case, financing is linked not only to cost estimates but also to clear indicators (output–outcome)—such as service coverage, quality indicators, social impact, and sustainability. As a result, state resources are directed to projects that truly address social problems, which increases overall efficiency.

In the context of digital governance and open data systems, strengthening financial discipline, introducing real-time monitoring, and implementing electronic reporting mechanisms are becoming increasingly important. Electronic platforms for submitting applications, tracking competitions online, and publishing contracts and financial reports not only increase transparency but also enable preventive

[1] Tashkent Institute of Chemical Technology Lecturer, Department of "Industrial Economics and Management"

management based on analytical control (risk indicators, “red flags”). In this process, aligning audit and internal control systems and establishing standardized reporting formats and verification criteria are crucial.

The effectiveness of financial management in supporting civil society institutions determines not only the culture of using public funds, but also the institutional capacity and sustainability of NGOs. If modern approaches such as financial planning, risk management, and cost-effectiveness evaluation are introduced, project quality improves, trust from donors and the public is strengthened, and the scale of cooperation expands. Therefore, this topic is highly relevant scientifically and practically for increasing the effectiveness of public policy, strengthening competition and quality in the market of social services, and forming a “strong civil society.”

The President of the Republic of Uzbekistan, Shavkat Mirziyoyev, emphasized at the 46th session of the UN Human Rights Council:“We do not intend to be satisfied with the results we have achieved; we are firmly committed to further developing civil society institutions, and to comprehensively supporting freedom of speech in Uzbekistan. In this regard, codes on non-governmental non-profit organizations and mass media are being developed.” [1]

Literature Review

J. Locke [2]: “Political/civil society” is an order formed by people on the basis of mutual consent to protect natural rights (life, liberty, property); institutions ensure the rule of law and accountability that restrain power.

G. Hegel [3]: Views “civil society” as a separate stage between family and the state: the system of needs, labor market, corporations/associations, coordination of interests, and structures that maintain social order are formed here.

A. de Tocqueville [4]: Using the U.S. experience, evaluates voluntary associations (public organizations) as a “school” of democratic culture: citizens unite to protect interests, participate in public affairs, and strengthen cooperation and trust.

J.-J. Rousseau [5]: Advances the idea of the “general will,” warning that “partial societies” (groups/factions) within the state may undermine the common interest; therefore, institutions should not hinder the expression of the general will (or factions should be many and equal).

S. A. Avakyan [6]: Works edited by Avakyan examine civil society in connection with the constitutional order, human rights, legal guarantees of public participation, political dialogue, and security issues (NGOs, public oversight, legal status of institutions).

F. M. Rayanov [7]: Interprets civil society as inseparably linked with the rule-of-law state: legal institutions and public associations complement each other and are seen as the foundation of modern social development.

Kh. T. Odilqoriyev [8]: Civil society is a set of relations constituting the sphere of private life free from state interference and administrative pressure; it is a system of relations and means independent of the state, creating conditions for individuals and public organizations to realize interests and needs in socio-cultural and educational life.

M. Qirg‘izboyev [9]: Emphasizes the priority of human interests, a culture of respect for law, ensuring human rights and freedoms, and effective mechanisms of public oversight as key criteria of civil society.

Research Methodology

In Uzbekistan, legislative acts aimed at improving the system of state support for civil society institutions have been adopted. In particular, the Decree adopted on **August 26, 2024**, “On Measures to Further Improve the System of State Support for Civil Society Institutions,” stipulates the launch of a **single electronic platform** designed to ensure transparency in all processes related to allocating state subsidies, grants, and social contracts to civil society institutions.

The article uses comparative analysis as well as induction and deduction methods. Using the comparative method, analyses were conducted on information related to tax incentives, and scientific conclusions were drawn.

Analysis and Discussion of Results

There are **three** financial mechanisms for supporting civil society institutions:

1. Financing in the form of a **state subsidy**.
2. Financing in the form of a **state social order (social contracting)**.
3. Financing in the form of a **state grant**.

To ensure the financial independence and sustainable development of civil society institutions and to promote effective use of funds, financing is carried out in the form of subsidies, social orders, and state grants by the Parliamentary Commission and the Public Fund under the Oliy Majlis.

In addition, to ensure openness and transparency of the national mechanism for state support of civil society institutions, information is regularly published through mass media—television, radio, internet, and print publications.

The gradual increase in funds allocated for state support of civil society institutions through subsidies, social orders, and state grants is clearly reflected in the relevant table.

2008-2024 yillarda NNT va fuqarolik jamiyati institutlarini qo‘llab-quvvatlash uchun ajratilgan mablag‘lar taqsimoti

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Jami:
Oliy Majlis huzuridagi jamoat fondi	Jami:																		3 930 1 956 157
	Davlat subsidiyasi	6	6	5	6	6	5	5	6	6	6	7	11	15	161	36	49	45	381
		1 544	2 520	2 665	1 810	2 300	2 400	3 000	3 250	3 470	4 270	8 200	25 017	29 644	101 064	78 445	255 579	1 233219	1 758 397
	Davlat ijtimoiy buyurtmasi	3	13	12	6	9	11	18	15	15	9	8	12	15	23	17	10	11	207
		577	745	697	1 058	1 173	1 320	1 500	2 000	2 470	2 070	2 250	4 000	5 200	14 300	14 000	18 000	20 000	91 360
	Davlat granti	7	74	124	147	211	255	242	279	254	248	276	298	237	290	160	190	50	3 342
		379	471	1 098	2 117	2 965	3 510	3 462	5 445	6 223	6 030	7 800	8 800	9 200	11 900	12 000	17 000	8000	106 400

		2021	2022	2023	2024	Jami:
Xududiy jamoat fondlari (14 ta)	Jami:	326	389	693	577	1 985
		13 248	16 373	49 422	60368	139 411
	Davlat subsidiyasi	0	134	447	458	1 039
		0	5 315	36 601	47368	89 284
	Davlat ijtimoiy buyurtmasi	13	14	7	16	50
		3 870	2 035	1 744	7000	14 649
	Davlat granti	313	241	239	103	896
		9 378	9 023	11 077	6 000	35 478

Figure 1. Distribution of funds allocated to support NGOs and civil society institutions.
(figure not provided in text)

It is planned to increase the volume of state support for civil society institutions in Uzbekistan. According to the **2021–2025 Civil Society Development Concept**, mechanisms for financial support of NGOs and other civil society institutions will be expanded. Specifically, it is planned to increase the volume of subsidies, grants, and social orders by at least **1.2 times** in 2021 and by **1.8 times** by 2025.

State subsidies are funds allocated to materially and financially encourage civil society institutions and are directed to financing social projects, strengthening the material and technical base, and developing social services. These funds serve goals such as supporting the activities of civil society institutions, strengthening social partnership, and ensuring transparency and accountability.

Civil society institutions are an integral part of a democratic society; they play an important role in establishing dialogue between the state and citizens, protecting public interests, and solving social problems. Subsidies provided by the state are among the main tools supporting the sustainable development of such organizations.

These institutions contribute to developing dialogue between public authorities and the private sector, strengthening social stability, raising legal culture, and addressing socio-economic challenges. Therefore, measures aimed at supporting civil society institutions, strengthening their financial sustainability, developing socially significant projects, and improving transparency and accountability are of great importance.

State subsidies provide the necessary financial resources for the planned activities of civil society institutions. Through these resources, civil society institutions implement their projects and initiatives in an integrated manner, fulfill their tasks successfully, and achieve long-term objectives. Civil society institutions often implement initiatives that respond to the population’s social needs; state subsidies are crucial in financing such initiatives—for example, assistance to low-income families, protection of women’s and youth rights, and environmental protection projects.

One of the main functions of civil society institutions is to promote initiatives aimed at resolving urgent social issues. State subsidies create opportunities to financially support projects aimed at raising legal culture, providing social services to the population, and ensuring social justice.

State subsidies are a form of financial or non-financial support allocated by the state to civil society institutions, public organizations, and other socially significant entities to help organize their activities more effectively.

Through these subsidies, the state carries out the following tasks:

1. Ensuring social stability by providing financial resources to solve existing societal problems;

2. Protecting human rights by supporting the role of civil society institutions in developing principles of rights, equality, and justice;

3. Stimulating economic development by supporting innovations and financing projects that improve the socio-economic conditions of the population.

In developed countries, state subsidies aim to preserve the independence of civil society institutions. To increase the effectiveness of state support, it is implemented based on the principles of transparency and accountability. In European countries such as Sweden and Norway, regular grants are allocated to public organizations. In these countries, subsidies are directed to providing social services, protecting human

rights, and supporting environmental projects. For example, in Norway, the government guarantees at the legislative level the allocation of a certain share of the gross national product to NGOs.

In Germany, special funds have been established by the state for NGOs, providing financial resources for educating various segments of society, retraining, and social support. Alongside state financing, the business sector also contributes.

In Canada, the state uses grants, tax incentives, and other financial tools to support civil society. NGOs submit project proposals through transparent competitions to receive budget funds.

In developing countries, support for civil society institutions is provided through the state and international organizations. In such countries, the main focus is on projects aimed at solving social problems.

In India, there are social partnership programs financed by local and international foundations; the state supports public organizations in education, healthcare, and agriculture. Cooperation between the public and non-governmental sectors plays an important role in improving the effectiveness of public services.

In Kenya, state subsidies are mainly aimed at supporting civil society initiatives in rural areas. International support is also important. For example, UNICEF and USAID provide substantial grants to public organizations in Kenya.

In Indonesia, the state promotes the development of civil society through tax incentives and financial assistance. Public organizations in Indonesia mainly work in the areas of ecology, human rights, and social protection.

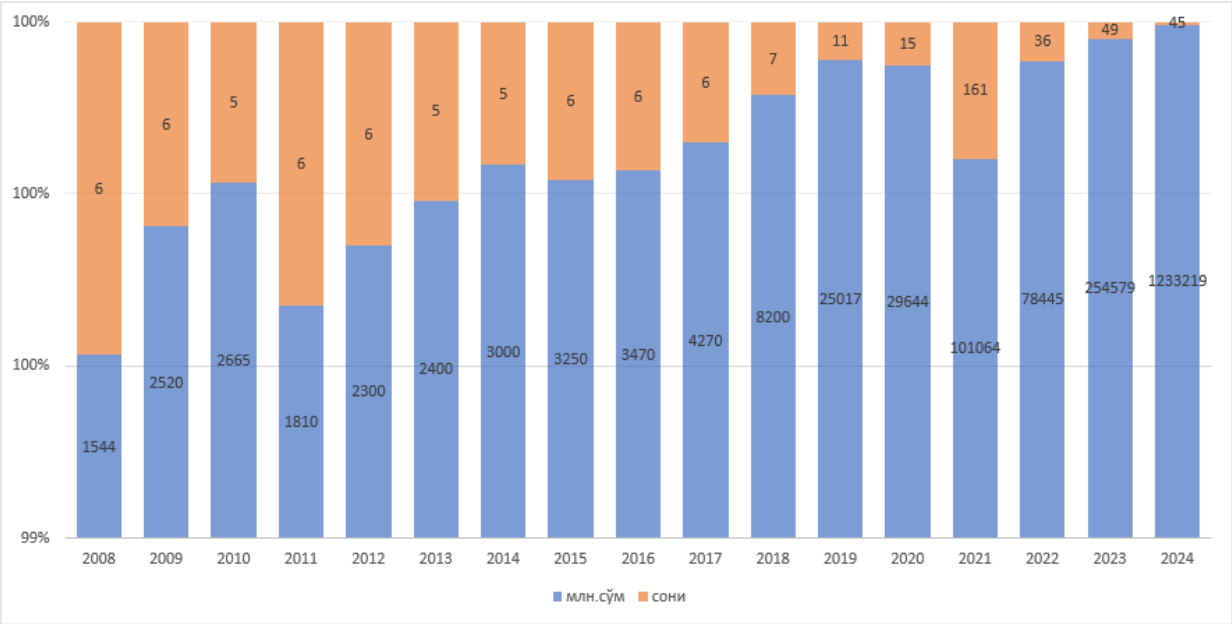


Figure 2. Information on the distribution of funds received in 2008–2024 by the Public Fund under the Oliy Majlis and public funds under the Jokorgi Kenes of the Republic of Karakalpakstan, and regional and Tashkent City Councils of People's Deputies to support NGOs and civil society institutions. *(figure not provided in text)*

As can be seen from the figure, over the years the role of state subsidies in supporting civil society institutions has increased.

During **2022–2023**, state subsidies were directed to support **276 NGOs** for their statutory activities and annual work plan implementation in the amount of **381.3 billion UZS**, and additionally **68.2 billion UZS** was allocated by the Public Fund to regional public funds as additional support in the form of state subsidies. As a result, the following activities were carried out:

- Promotion of the content and essence of the “New Uzbekistan Development Strategy for 2022–2026” among different segments of the population and dissemination to foreign “think tanks”; enhancing youth potential; strengthening public oversight in society;
- Coordinating NGO activities, increasing their involvement in reforms and implementation; improving the professional qualifications of NGO representatives;
- Organizing persons with disabilities and providing them with spiritual, educational, and humanitarian assistance;
- Broad coverage of civil society institution activities; raising the level of educational work in society; providing study manuals and specialized literature; and developing entrepreneurship.

As a result, **53,396 volunteers** were involved in project implementation; **4,028 materials** were published in mass media; **366,182 handouts** were produced; **2,073 citizens** obtained employment within the scope of subsidy implementation; **22,442 events** were held covering **1,230,339 citizens**; and **1,096 fixed assets** worth **9.2 billion UZS** were provided.

Conclusions and Recommendations

Improving the effectiveness of financial management in the process of state support for civil society institutions is primarily explained by the need to ensure the targeting, transparency, and results orientation of allocated budget funds, grants, and subsidies. In the current system, differing interpretations of financing criteria, insufficient standardization of indicators for evaluating project results, and excessive bureaucratic burdens in reporting and control reduce efficiency. Therefore, it is important for state support to shift from a “cost/expenditure” logic toward a “results and social impact” logic.

In conclusion, to improve financial management effectiveness, it is necessary to consistently introduce results-based budgeting, project-targeted financing, and cost-effectiveness approaches (the cost per unit of social result). If mechanisms for measuring the rational use of funds, the quality and coverage of social services, and the impact on the population (outcome) are strengthened in NGO activities, state resources will be directed more effectively and public trust will increase.

As a recommendation, first of all, it is necessary to establish unified standard criteria and open evaluation scales for allocating grants/subsidies (project relevance, social impact, financial sustainability, cooperation, and innovation) and to introduce a KPI/indicator passport for each funded project. Second, it is advisable to fully digitalize competition processes for state orders and subsidies, automate the entire chain of application–evaluation–payment–reporting through an open registry and a “single window” electronic platform, and implement phased financing (milestones).

As final recommendations, to strengthen financial control and accountability, it is necessary to gradually introduce internal control and internal audit requirements in NGOs, simplify standard financial reporting

forms while expanding risk-based monitoring practices. In addition, institutionalizing public oversight (open data, public hearings, measuring beneficiary feedback) will increase the social effectiveness of state support. As a result, funds will be spent in a targeted manner, corruption risks will decrease, and the sustainable operation of civil society institutions will be ensured.

Reference:

- *Speech by President Shavkat Mirziyoyev at the 46th session of the UN Human Rights Council,* ***22 February 2021****. (president.uz)*
- *Locke, J. Second Treatise of Government (1690).*
- *Hegel, G. W. F. Philosophy of Right (especially the "Civil Society" section).*
- *Tocqueville, A. Democracy in America (chapters on associations).*
- *Terentyeva, Ye. Yu. Financial Mechanisms of Nonprofit Organizations' Activities (2012).*
- *Avakyan, S. A. (ed.). Civil Society as a Guarantee of Political Dialogue and Countering Extremism: Key Constitutional-Legal Problems.Moscow: Yustitsinform, 2015.*
- *Rayanov, F. M. "Civil Society and the Rule-of-Law State…" (scientific article, 2015).*
- *Odilqoriyev, Kh. T. Constitution and Civil Society (2002); explanations and quotations presented in Civil Society: Historical and Modern Models.*
- *Qirg'izboyev, M. Civil Society: Political Parties, Ideologies, Cultures (monographic reference information).*

FACTORS INFLUENCING THE IMPROVEMENT OF ORGANIZATIONAL AND ECONOMIC MECHANISMS OF HOTEL SERVICES AND THE STRUCTURAL COMPOSITION OF THE ORGANIZATIONAL AND ECONOMIC MECHANISM

Mir-Jafarova Aziza Javoxirovna[1]

ABSTRACT

In the next stage of reforms aimed at comprehensive development of the tourism sector in new Uzbekistan, special attention is paid to the development of hotel activities based on the comprehensive involvement of business entities and the further expansion of economic levers for them, the development of hotel activities and the improvement of organizational and economic mechanisms in the sector to increase the number of tourists. Hotel services are identified as one of the leading sectors of the world economy. Based on this, in the article the researcher sheds light on the factors influencing the improvement of organizational and economic mechanisms of hotel services and its structural structure based on scientific approaches.

Key words: *Economy, Tourism, Tourist, Service, Hotel, Global, Service, Accommodation, International, Transportation, Recreation, Income, Entrepreneurship, Export, Factor, Organizational, Economic, Mechanism.*

Introduction

The current state of the global hotel services market is characterized by the sector's transition to a sustainable and digital growth model. Today, competition between international chains and independent hotels is intensifying, which requires the implementation of flexible business models, the integration of innovative management tools and digital platforms (PMS, RMS, CRM, big data, AI analytics), as well as the expansion of public–private partnerships in infrastructure projects.

According to the World Tourism Organization (UN-Tourism), "The hotel business accounts for nearly 6% of the world's gross national product and about 5% of total tax revenues. The global hotel capacity amounts to 17–18 million beds across all countries, and their number and quality largely correspond to the level of demand in the international tourism sector of the respective region" [1].

In this regard, countries are intensifying regulatory measures aimed at strengthening quality standards, safety, energy efficiency, and environmental sustainability, which is associated with the growing demand for "green" and smart hotels. Therefore, a hybrid organizational and economic mechanism is being formed, based on digitalization, sustainability, service personalization, and enhanced cooperation between the state, business, and global technological platforms, gaining particular importance in addressing the social dimensions of the sector.

Hotel services are recognized as one of the leading sectors of the global economy. Accordingly, in Uzbekistan, significant attention is being paid to the renewal and development of the tourism sector, including the creation and strengthening of the necessary legislative and regulatory framework for sustainable development, the provision of hotel services to foreign tourists in accordance with international standards, and the promotion of respect and recognition for the tourism industry. The main objective is to

[1] Independent researcher of the "Silk Road" International University of Tourism and Cultural Heritage.mirdzafarova

ensure the rapid and effective development of tourism, create infrastructure in line with international standards, and strengthen international cooperation. Furthermore, improving economic conditions through the development of the most attractive tourist destinations in the country is also among these priorities.

Literature Review on the Topic

To date, within the scientific paradigm of the tourism services market, the concepts of hotel services and the quality of hotel services have been widely used. However, global scholars have provided different definitions of these concepts based on various approaches.

In particular, K. Prokhorov, in his research, defined hotel services as “products that do not have a tangible, material form, but exist in the form of useful and effective activities” [2]. In this regard, the approach of G. Mazur is characterized by greater attention to time-related factors. He noted that “the consumption of hotel services mainly occurs simultaneously with their production. These are benefits that cannot be stored or accumulated” [3].

In the definitions of Peter Drucker, the importance of the relationship between subjects (service provider and customer) is emphasized: “The quality of hotel services is determined not by what the supplier puts into it, but by what the customer receives and is willing to pay for” [4].

The research of R. C. Lewis and V. N. Booms is more comprehensive, as their interpretation of hotel service quality takes into account both the subjects involved and the time factor. They correctly emphasized that the quality of hotel services is determined by the degree to which customers’ needs and expectations are satisfied [5].

D. A. Baker and L. J. Crompton approached hotel services specifically from a tourism perspective, defining customer satisfaction as “the positive feelings that visitors experience after their travel.” They emphasized that customer satisfaction is one of the key factors in the success and revenue growth of the tourism business, providing a precise and close characterization of the issue [6].

Research Methodology

The study analyzed the factors influencing the growth dynamics of the hotel and accommodation facilities stock, as well as the specific features of providing high-quality services in the sector.Within the framework of the topic, in order to conduct an in-depth analysis of the problems and develop scientifically grounded conclusions and recommendations, methods such as induction and deduction, comparative analysis, and the study and examination of scientific research conducted abroad and in Uzbekistan were employed. The comparative analysis method was used based on the data obtained from these studies.

Analysis and Results

The tourism industry is one of the major drivers of a country’s economic development, significantly contributing to three primary objectives of both developed and developing nations: income generation, employment creation, and foreign exchange earnings.

In this regard, the tourism sector can play an important role as a driving force of economic growth. The impact of this industry at different stages of economic development depends on the specific characteristics of each country. Considering the complexity of tourism consumption, its economic effects are widely reflected in other sectors of production as well, contributing in each case to the achievement of accelerated development goals.

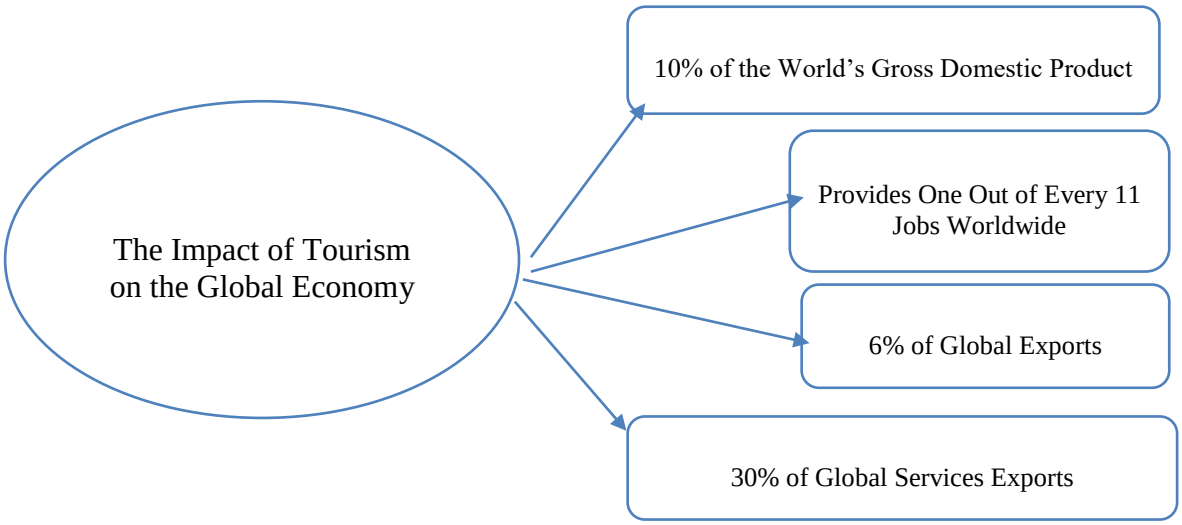


Figure 1. The Impact of the Tourism Sector on the Global Economy

Tourism accounts for approximately 10% of global Gross Domestic Product and provides one out of every 11 jobs worldwide. It represents about 6% of global exports and nearly 30% of global services exports [7] (Figure 1).

Hotel services are recognized as one of the leading sectors of the global economy. Accordingly, in Uzbekistan, significant attention is being paid to renewing and developing the tourism sector, including the creation and strengthening of the necessary legislative and regulatory framework for sustainable development, the provision of hotel services to foreign tourists in accordance with international standards, and promoting respect for the tourism industry.

The main goal is to ensure the rapid and effective development of the tourism sector, create infrastructure that meets international standards, and strengthen international relations. Additionally, improving economic conditions through the development of the most attractive tourist destinations in the country is also included in these objectives.

The role and functions of hotel services in the national tourism economy are illustrated in Figure 2**.**

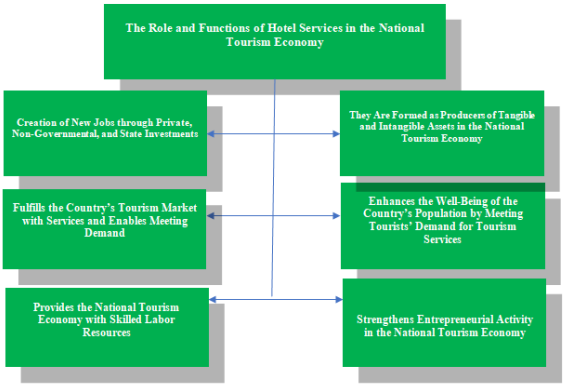


Figure-2. The Role and Functions of Hotel Services in the National Tourism Economy

Providing Tourism Services by Region in Uzbekistan Requires Certain Expenses. In Uzbekistan, delivering tourism services across different regions involves specific costs, and it can be observed that hotel-related expenses constitute a significant share of these costs.

The theoretical analysis of the distinctive features of hotel services ispresented in the following Table 1.

Table 1 : The distinctive features of hotel services and their content

№	Distinctive Features of Services	The Essence and Content of the Features
1.	Hotel services simultaneously hold significant social and economic importance.	The social role of tourism includes providing employment for the unemployed, reducing the level of unemployment, and improving the population's income level and standard of living. From an economic perspective, its contribution to the national economy is determined by the production of tourist goods and services, as well as other related factors.
2.	In the process of exchange, hotel services do not manifest in a tangible (material) form.	Like other types of services, tourism services do not take a tangible form during the buying and selling process and are consumed simultaneously as they are provided. The service delivered by the provider, in accordance with their level of professionalism, also implies the extent to which the consumer benefits from that service; consequently, it depends on the overall competence and level of both parties.
3.	The impossibility of storing hotel services.	Like other types of services, tourism services cannot be stored, because they are consumed directly at the time they are provided, and their quality is evaluated by the consumer during the very same process.
4.	Hotel services are provided at the place of service and cannot be transported to another location.	Tourism services are characterized by their intangible nature, the impossibility of storing and transporting them, and the fact that they are provided at the time and place of consumption, which makes it impossible to take them to another location.
5.	When providing hotel services, the customer, the provider, and the tourism product must be present simultaneously.	Another important function of tourism services is characterized by the necessity for the service provider, the consumer, and the tourism product (service) to be present simultaneously during the service delivery process.
6.	The quality and competitiveness of hotel services.	Enterprises and firms providing tourism services operate under conditions of very high risk. If they fail to ensure high-quality service, there is a strong likelihood that they will lose their competitive position.

During the analyzed period, the number of hotels and similar accommodation facilities increased from 434 in 2010 to 1,452 in 2024. This indicator represents a 3.8-fold growth over 14 years (see Figure 4).

Figure 3. Dynamics of the number of hotels and similar accommodation facilities in 2024[1]

It was concluded that the factors influencing the development of hotel services in the regions of the country can be divided into two groups:

- Social factors
- Economic factors

Social factors include the population's standard of living, cultural attitudes toward tourism, the level of knowledge about hotel services, the state's policy of social support for hotel services, the degree of protection of tourists from social risks, and the historically developed level of tourism and hotel services.

Economic factors include the population's income, the development of a competitive environment in the economy, the level of development of financial institutions, market demand for hotel services, the volume of tourism-oriented investments in hotel services, conditions created for investors, the availability of qualified personnel for hotel services, the development of hotel service infrastructure, and the existence of economic incentives provided by the state for hotel service activities.

Based on the results of the research, factors influencing the improvement of organizational and economic mechanisms of hotel services were developed (see Figure 4).

The quality of service is a decisive factor in competitiveness. Attention to service quality helps an organization distinguish itself from others, thereby gaining a sustainable competitive advantage. In some production sectors, service quality is more important than product quality. High service quality is not a cost of doing business but a key to increasing profitability. Service quality influences existing and potential customers' intentions to repurchase, while poor service, conversely, reduces the potential customer base.

To further increase tourist inflows in the country, proposals and recommendations were developed to improve the organizational and economic mechanism for the development of hotel services. This is based

[1]Developed by the author based on data from the State Committee of the Republic of Uzbekistan on Statistics.

on the effective development of hotels in the tourism sector and the optimization of the integration of tourism sector entities and hotel services with internationally reputable tourism and marketing platforms.

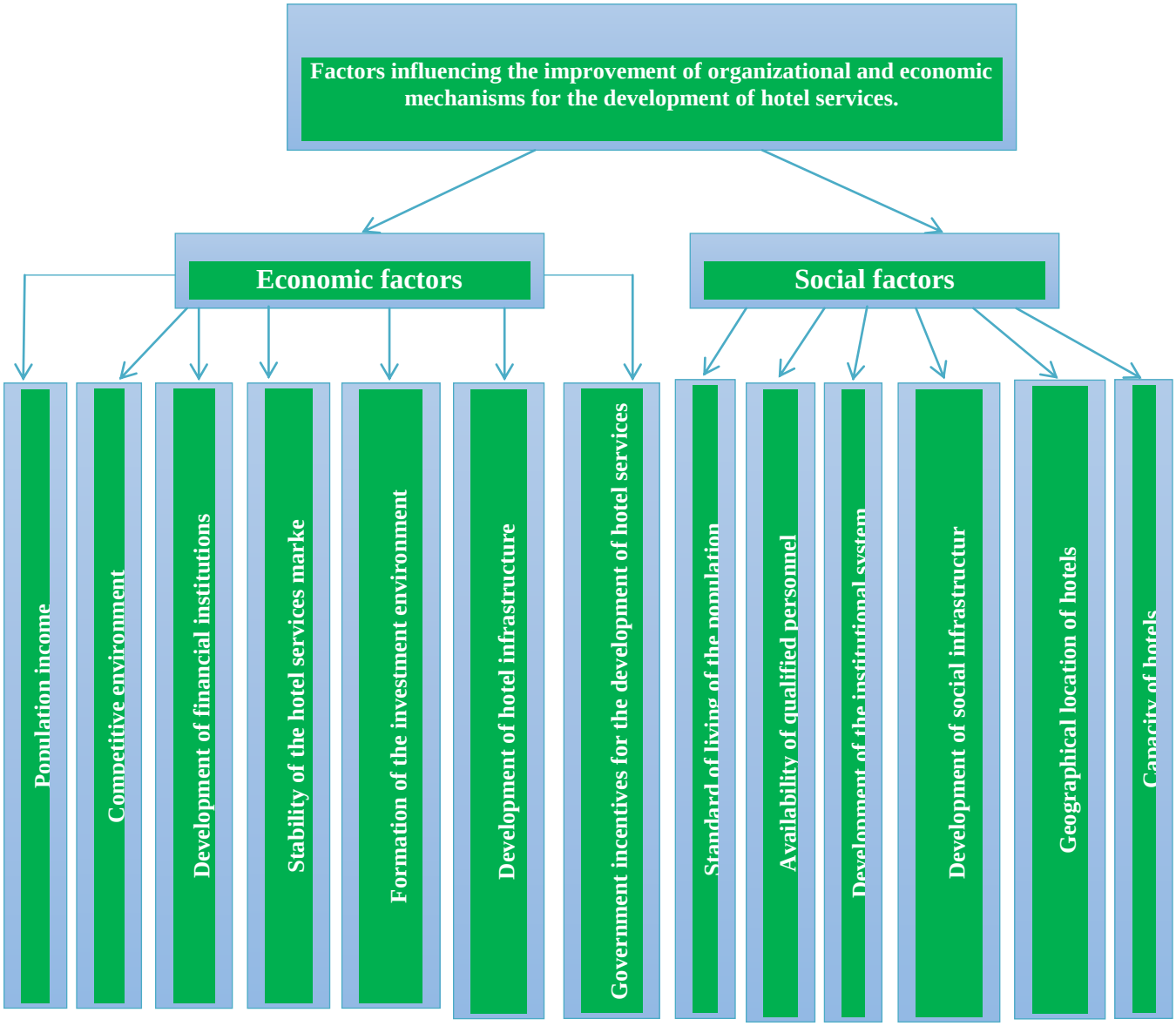


Figure 4. Factors influencing the improvement of organizational and economic mechanisms for the development of hotel services

A regional analysis was conducted on the attitude toward the development of hotel services in Samarkand region and its current state. The study also identified territorial differences in the dynamics of development across sectors.

The research showed that developing hotel services and improving their organizational and economic mechanisms acts as a factor for increasing efficiency and allows resolving a number of issues faced by service-providing enterprises. Such issues include:

- Currently, tourist service enterprises engaged in hotel services have become smaller in scale. As a result, attention to assessing the economic efficiency of tourism organizations has decreased. In most operating travel agencies, only the return on expenses is calculated, and conclusions and decisions are made based on this;
- In tourism, hotel service firms do not use a number of theoretically grounded indicators when assessing efficiency;
- Planning in most tourist service entities engaged in hotel services is very low. Consequently, the analysis of certain indicators is carried out only by comparing them with the previous year's figures;
- Organizational and economic factors affecting efficiency in tourism hotel service firms are generally not assessed;
- The personnel policy in tourism hotel service firms is not well-established and does not meet modern requirements. Most employees involved in tourist services lack the necessary knowledge, skills, and specialization, and personnel inefficiency remains at 20–25%;
- In regional tourism hotel service firms, there are some shortcomings in the statistical reporting system. This prevents obtaining the necessary data to evaluate efficiency indicators;
- Standards for the tourist services provided by tourism hotel service firms have not been established. As a result, the composition and price of the same type of product (e.g., a dish) vary;
- There are also some shortcomings in the taxation system of tourism hotel service firms;

- In regional tourist service entities providing hotel services, their property and clients' health during the tourist service period are not insured. To address these issues, the following directions for developing hotel services and improving the organizational-economic mechanism in the tourism sector have been proposed. As a result, organizational-economic mechanisms for the development of hotel services in tourism have been developed (Figure 6).

Figure 5. Structure of the organizational and economic mechanism for the development of hotel services in the tourism sector

In Figure 5, the organizational and economic mechanism for the development of hotel services in the tourism sector is shown to be significant not only economically but also socially and in terms of global tourism. This is because the organizational and economic mechanism for developing hotel services in the tourism sector practically indicates the potential increase in the share of income from hotel services in the population's earnings and, in the long term, the possibility of achieving effective results in improving the welfare of our country's population.

Conclusion

The role of developing hotel services as a factor for sustainable growth in the economic system has been clarified. This shows that this sector not only meets the consumption demands of tourists but also tends to become a high value-added branch of the national tourism economy. Hotel services are a set of specific services defined by standards and expected by customers, which have distinct characteristics in various categories of accommodation facilities and possess corresponding economic mechanism structures.

Organizational and economic mechanisms can be approached at both micro and macro levels. At the macro level, organizational and economic mechanisms represent a system of interrelated organizational-administrative and economic measures applied in the development of hotel services, encompassing all activities related to planning, designing, implementing, and monitoring the target parameters of efficiency indicators. At the micro level, the organizational and economic mechanism includes only economic measures.

References

- *Mazur, G.: QFD for service industries. In Proceedings of the Fifth Symposium on Quality Function (1993*
- *Ducker, P. (1991). Innovation and Entrepreneurship: Practice and Principles. Louisiana, Louisiana State University Press.*
- *Lewis, R.C. and Booms, B.H. (1983), "The Marketing Aspects of Service Quality" in Berry, L., Shostack, G. and Upah, G. (Eds.), Emerging Perspectives on Services Marketing, American Marketing Association, Chicago, pp. 99-104.*
- *Baker, D. A., & Crompton, J. L. (2000). Quality, satisfac- role of festival visitors' satisfaction in the relationship tion, and behavioral variables. Annals of Tourism Re- between service quality and behavioral intentions. Joursearch, 27(3), 785–804*
- *Resolution of the President of the Republic of Uzbekistan "On approval of the Concept for the further development of national culture in the Republic of Uzbekistan" adopted on November 28, 2018;*
- *Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulation on the procedure for the use of tangible cultural heritage objects", Tashkent, October 18, 2019, №881;*
- *Decree of the President of the Republic of Uzbekistan Shavkat Mirziyoyev "On measures to further improve the system of public administration in the fields of tourism, sports and cultural heritage" [1](Tashkent, April 6, 2021, No. PF-6199);*
- *Mamatkulov H.M., Bektemirov A.B., Tukhliev I.S., Norchaev A.N. International tourism, Textbook. Tashkent, "Scientific Society of Philosophers of Uzbekistan", 2009.-192 p.;*
- *Aleksandrova A. Yu., International Tourism, Moscow: Knorus, 2010. 492 p.;*
- *World tourism barometer. Tourlib.ne. [Электронныйресурс].URL https://www.e-nwto.org/doi/epdf/10.18111/wtobarometereng.2023.20.1.3?role=tab*
- *http://scientificjournal.ru/images/PDF/2017/VNO-30/gostinichnyj-rynok.pdf*

ANALYSIS OF THE STATUS OF IMPLEMENTATION OF CERTIFICATION IN FOOD SAFETY IN UZBEKISTAN

Mahamatova Maftuna[1]

ABSTRACT

The article examines the issues of introducing certification in ensuring food safety in the Republic of Uzbekistan. The bodies participating in food safety certification in the republic and their performance indicators are analyzed. The analysis is based mainly on data from the Agency for Technical Regulation and other organizations. Practical recommendations are developed based on the study of problems in the field.

Keywords: *Food Safety, ISO 22000 International Standard, Certification, Technical Regulation, Standardization, HACCP Principles.*

Introduction

The sustainable development of food industry enterprises in the Republic of Uzbekistan directly depends on the requirements of the fiercely competitive environment, the modernization of the sector, the continuation of reforms aimed at improving the diversification of food production. Therefore, the main goal of our scientific research is to study the risks existing in the production activities of food industry enterprises, to conduct an analytical study of food product certification issues and to assess the factors influencing this process, and to find solutions to problems related to safety and certification.

One of the objectives of the study is to conduct an analytical study of the issue of food product certification and to study the results of reforms carried out in this area. Therefore, an analytical study of the organizations responsible for food product certification in our republic and the measures taken by them is of great importance.

Literature review

The Agency for Technical Regulation under the Cabinet of Ministers of the Republic of Uzbekistan operates as an organization responsible for general supervision of standardization and certification work at the republican level. In accordance with the Resolution of the President of the Republic of Uzbekistan No. PF-41 dated February 27, 2024 “On measures to further improve public administration in the field of technical regulation”, the Agency for Technical Regulation under the Ministry of Investments and Foreign Trade of the Republic of Uzbekistan was transferred to the departmental subordination of the Cabinet of Ministers from February 29, 2024[4].

The main areas of activity of the Agency for Technical Regulation under the Cabinet of Ministers of the Republic of Uzbekistan are as follows[1]:

- expanding cooperation with international organizations and foreign countries in the field of national conformity assessment, recognition of testing and measurement results in export markets;

[1] Tashkent State University of Economics Independent researcher, Renaissance Educational University Assistant, Department of “Economics” Uzbekistan

- taking targeted measures to ensure compliance with modern requirements and increase competitiveness in foreign markets by introducing international standards and technical regulations in the production of domestic products;
- wide implementation of modern quality management systems, primarily at exporting enterprises, and ensuring compliance of products with the requirements of technical regulations and regulatory legal acts on standardization;
- harmonizing national legislation, technical regulations, conformity assessment instruments and regulatory legal acts on standardization with the requirements of the World Trade Organization;
- taking measures to ensure compliance with the requirements for the quality and safety of products (works, services) and to protect consumer rights from the negative consequences of incorrect measurement results [2].

The Law of the Republic of Uzbekistan “On Certification of Products and Services” defines the concept of a certificate of conformity as follows, namely: “a certificate of conformity is a document issued in accordance with the rules of the certification system to confirm the compliance of a certified product with established requirements” [2]. The product certification process is carried out in accordance with the requirements of Appendix 2 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 318 dated July 6, 2004, “Regulations on the Procedure for Certification of Products in Accordance with Standard Requirements”.

Research methods

The research used methods such as comparative analysis of indicators, multi-year monographic observation, and statistical assessment of the situation. Statistical data on measures taken in the field of certification to ensure the safety of food products in our republic were analyzed.

Analysis and results

Today, food safety certification is directly based on the first internationally accepted standard in the ISO 22000 series. This ISO 22000:2005 “Food safety management systems – requirements for all organizations involved in the production and consumption of food” was adopted by the International Organization for Standardization (ISO) in 2005. It is the first international standard that can be implemented and certified in a food safety management system[5].

The ISO 22000 Food Safety Management System standard was developed in accordance with the requirements of the management system (ISO 9001) and the principles of Hazard Analysis and Critical Control Points (HACCP). This standard allows you to manage the various levels of risks affecting products in the food production chain. It defines the optimal requirements for the main elements of a food safety management system - HACCP principles, system management, management of hazards affecting food products, interactions with suppliers, consumers, management, and development of production processes.

Along with the Agency for Technical Regulation, which operates as an organization responsible for certification, the State Institution “Uzbek Center for Scientific Testing and Quality Control “UzTest” is also an important structure in the conformity assessment system in the republic due to the aspects it covers and the breadth of the testing and certification field. The priority tasks of the “UzTest” DM are the organization and implementation of certification of products and services in accordance with technical regulations, state

standards and international standards, consumer protection from low-quality products, etc. It also engages in the certification of food, perfumery and cosmetic products and other types of certification activities[4].

In the certification of products of manufacturing enterprises by certification organizations, the number of certificates of conformity issued by the National Certification Organization of the Republic of Uzbekistan in 2019 amounted to 177,608, while the number of certificates issued by the "UzTest" DM amounted to 29,453, and the number of certificates issued on management systems amounted to 1,803. The number of certificates of conformity issued by the National Certification Organization of the Republic of Uzbekistan decreased by 84.3 percent or 149,776 in 2025 compared to 2019. A sharp decrease was also observed in the number of certificates issued by the "UzTest" DM in 2025, i.e., by 86 percent or 25,292 compared to 2019. This mainly indicates the compliance of the certificates issued by the "UzTest" DM with the National system and increased inter-system integration (Table 1).

Table 1 : Comparative analysis of certificates issued by certification bodies to manufacturing enterprises [3]

Years	Certificate of Conformity issued by the National Certification System of the Republic of Uzbekistan	Certificate of conformity issued by the "UzTest" DM	Management system certificates
2019	177608	29453	1803
2020	157168	31639	381
2021	157232	33597	1841
2022	135163	27893	1125
2023	192021	39650	1412
2024	171328	21975	1788
2025	27832	4161	1873

In terms of certification, the number of certificates obtained under management systems amounted to 1,803 in 2019, while a decrease was observed in 2020. The main reason for this can be assessed as the impact of the global COVID-19 pandemic on the production process of our republic. In 2025, 1,873 certificates under management systems were obtained by manufacturers, which is an increase of 3.9 percent or 70 compared to 2019. In general, it can be concluded that the decline in certification indicators is occurring as a result of the transition to voluntariness and relegation to the second level. This situation indicates that the quantitative approach has prevailed in the certification system and the need to further strengthen organizational and management mechanisms based on quality, systematicity, and various risks (Table 1).

Food safety management system is aimed at ensuring product safety for human health at all stages of the food production chain, and includes: a management mechanism based on the identification, assessment, control and continuous improvement of risks. Its main objectives are:

- Taking measures to prevent the production of dangerous products;
- Ensuring compliance with food safety requirements;

- Constantly protecting consumer health;
- Increasing the sustainability of the enterprise's activities, etc.

Table 2 : Analysis of certificates obtained based on the implementation of management systems in food certification [3]

Years	**Total number of certificates obtained based on the implementation of management systems**	**Of these, the number of certificates (ISO 22000) obtained for food products**	**Share of total certificates, %**
2019	177608	28911	16,3
2020	157168	27862	17,7
2021	157232	4029	2,6
2022	135163	8109	6,0
2023	192020	6649	3,5
2024	171327	6631	3,9
2025	27832	1643	5,9

As noted above, based on the requirements of international standards, enterprises operating in each country develop internal regulations based on the requirements of national and international standards. Namely, the requirements for the production and delivery of food products to the consumer are required to be certified at the national level according to the ISO 22000 standard.Analyzing the status of food product certification by quality management systems in the sector, in 2019 the total number of certificates was 177,608, of which 28,911 certificates were obtained for food products under the ISO 22000 standard for food safety management systems, accounting for 16.3 percent of total certificates. Since 2021, there has been a decrease in the number of certificates obtained for food products. In 2025, the number of certificates obtained for food products amounted to 1,643, accounting for 5.9 percent of total certificates (Table2).

The results of the analysis show that in 2021-2024, the number of certificates based on the ISO 22000 standard maintained a long-term growth trend in the introduction of management systems for food product certification, but by 2025, a sharp decline was observed. One of the main reasons for this decline can be explained by the fact that certification is carried out on a voluntary basis.

Conclusions and suggestions

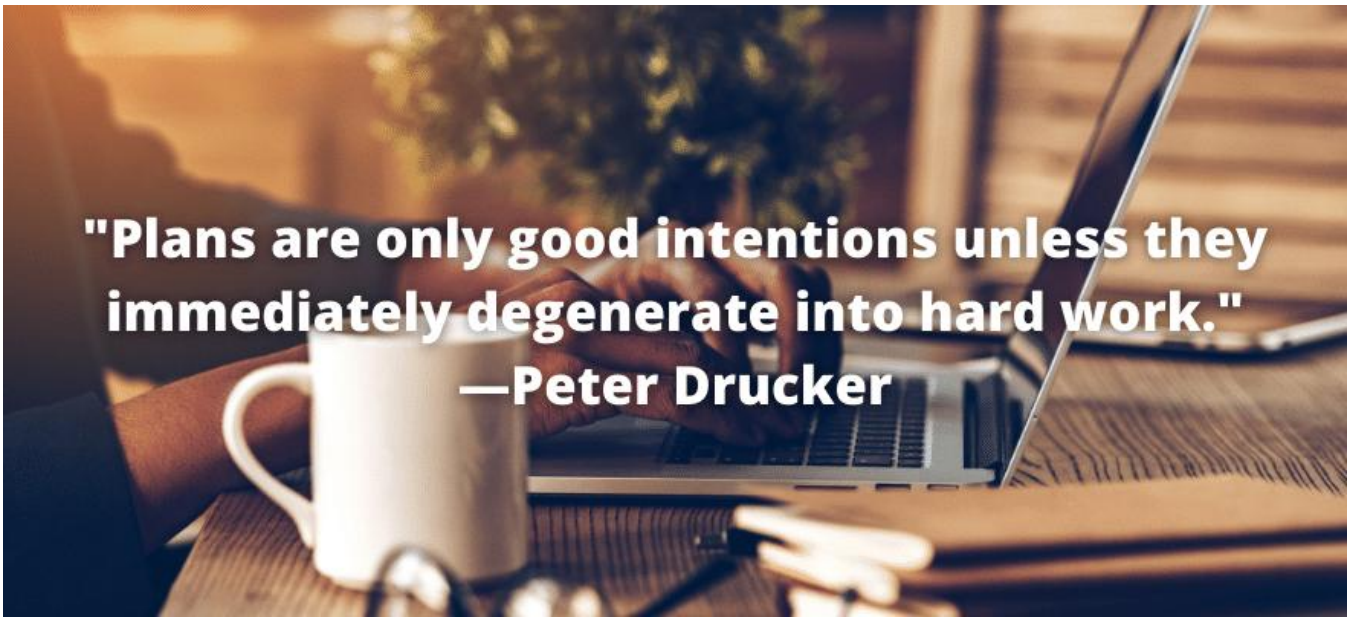
As a result of the conducted research, ensuring the safety of food products does not only occur at the production facilities, but also ends with the consumer reaching them and consuming them in a quality manner. In this regard, quality assurance is required in the processes from the delivery of food products to the transportation, storage and delivery of finished products to the consumer. In the processes of processing food products, it is important to organize production based on sanitary and hygienic requirements.

Today, along with the Agency for Technical Regulation, which operates as an organization responsible for certification, the State Institution "Uzbek Scientific Testing and Quality Control Center "UzTest" is also an important structure in the conformity assessment system in the republic due to the aspects it covers and the

breadth of the testing and certification sector. However, it is important to review the activities of the organizations of this system, reduce some administrative costs, unify the certification system into a Single Register, and establish a simple and streamlined mechanism for certifying food enterprises.

References

- *Resolution of the President of the Republic of Uzbekistan dated 27.02.2024 No. PF-41 "On measures to further improve public administration in the field of technical regulation".https://lex.uz/docs/6821840.*
- *Law of the Republic of Uzbekistan "On Certification of Products and Services". 28.12.1993.*
- *Compiled by the author based on information from the Agency for Technical Regulation under the Cabinet of Ministers of the Republic of Uzbekistan.https://gov.uz/oz/standart*
- *https://gov.uz/oz/standart/activity_page/sifat*
- *https://ru.wikipedia.org/wiki/ISO_22000*
- *https://uztest.uz/korxona-haqida/umumiy-ma-lumot/*



MODELING A SELF-ORGANIZING TRADING SYSTEM USING A SEMI-MARKOV HAWKES PROCESS

U.A. Abdullaev[1]

ABSTRACT

This paper proposes an integrated approach based on Semi-Markov and Hawkes processes to model the internal mechanisms of a self-organizing trading system. Traditional market microstructure models typically analyze either the irregularity of inter-trade durations or the mutual excitation effects between trades. In this study, to more accurately capture real market dynamics, a unified probabilistic framework incorporates stochastic inter-trade durations, clustering of trading intensity, daily trading patterns, trade volume, and location factors. The Semi-Markov process captures the variability of inter-trade durations, while the Hawkes process mathematically represents self-exciting interactions. The integrated approach provides a deeper explanation of natural clustering in market activity, liquidity dynamics, short-term instabilities, and internal equilibrium mechanisms. The results offer an effective theoretical foundation for optimizing trading strategies, assessing risks, and analyzing market activity dynamics.

Keywords: *Semi-Markov Process, Hawkes Process, Trading System, Self-Organization, Market Microstructure, Trading Intensity, Clustering, Liquidity.*

Introduction

Market components such as prices, trading volume, and consumer opinions exhibit a high degree of variability. Such variability leads to strong fluctuations over short time intervals. In classical regression models, only the mean values, trends, or seasonal components of these variables are estimated; however, the impact of previous trading decisions on future trades is not assessed from an economic, statistical, or empirical perspective. In general evaluations, the self-organizing property of the trading system is not taken into account [1-9].

In modern economics, a deep understanding of the market requires analyzing its core dynamic components. Recent studies show that internal interactions within the market, clustered segments, the SOM (Self-Organizing Map) lattice structure, and trading intensity serve as fundamental elements for comprehensive market analysis. Therefore, in modeling a self-organizing trading system, the semi-Markov–Hawkes approach forms a point process framework, since the trading system operates through a sequence of discrete events over time. In such a system, these events may include the execution of trades, order submissions, price changes, the introduction of new products, intensification of external influences, and other similar occurrences[10-13].

Theoretical materials and methods

In modeling a self-organizing trading system, the Semi-Markov–Hawkes approach focuses on a point process framework, since the trading system operates through a sequence of discrete events over time. In

[1] *PhD in economics, Karakalpakstan Branch of the Academy of Sciences of Uzbekistan, Research Institute of Natural Sciences*

such a system, these events may include trade executions, order placements, price changes, the introduction of new products, intensification of external influences, and other similar occurrences.

Below, we present Definitions 1 and 2 based on source [14]:

Definition1.We consider market trades as a point process occurring at time moments $\{T_i\}_{i\geq 1}$. If the number of trades observed in the interval $[0,t]$ is denoted by $N(t)$, then:

$$N(t) = \sum_{i\geq 1} 1_{\{T_i \leq t\}} \quad (1)$$

where $1_{\{\cdot\}}$ – is the indicator function.

From Definition (1) it follows that the indicator function assigns the value 1 to every event that occurred up to time t, and 0 otherwise, thereby capturing the total number of trades realized by time t. Since a specific event occurs at time T_i, we are interested in determining the probability that the next event will occur in the near future. For this purpose, we introduce the intensity function.

Definition 2. (Intensity function). The conditional intensity of a point process is defined as:

$$\lambda(t|\mathcal{F}_t) = \lim_{\Delta t\to 0} \frac{E[N(t+\Delta t)-N(t)|\mathcal{F}_t]}{\Delta t} \quad (2)$$

where $\mathcal{F}_t$ denotes the sigma-algebra containing all information about events observed up to time t, and satisfies the filtration property $\mathcal{F}_s \subseteq \mathcal{F}_t$ for all $s < t$. In financial markets, information regarding products, prices, or trading activity is continuously updated and accumulated; therefore, $\{\mathcal{F}_t\}_{t\geq 0}$ represents the growing information set.

Now, assuming that the occurrence of a particular event increases the likelihood of future events, we introduce the fundamental definition of the Hawkes process, which characterizes a self-exciting system.

Definition 3 (Hawkes process [8]).A self-exciting Hawkes process is defined as follows:

$$\lambda(t) = \mu(t) + \int_0^t \phi(t-s)dN(s) \quad (3)$$

where : $\mu(t)$ –denotes the baseline (daily) intensity, and $\phi(t-s)$ –is the kernel function describing the excitation effect of past events on future arrivals.

The inter trade durations within a trading day exhibit random behavior and follow their own probability distributions—for example, exponential, lognormal, gamma, or Weibull distributions. In certain periods, market activity becomes very high, which implies a higher probability of subsequent high activity; at other times, trading intensity declines, indicating that the likelihood of future trades may also be lower.

If we assume that the durations between consecutive events are identically distributed in a memoryless manner, the resulting dynamics correspond to a Markov process. However, when the inter-event times are not memoryless and follow more general distributions, the system is better characterized by a Semi-Markov process.

Definition 4 ([15]). Let $E = \{1,2,\dots,K\}$ be a discrete set of states. A pair (X_n, T_n) is called a Semi-Markov process if

$$P(X_{n+1} = j, T_{n+1} - T_n \leq t \big| X_n = i, \mathcal{F}_{T_n}) = Q_{ij}(t) \quad (4)$$

where $Q_{ij}(t) -$ is the distribution function describing the transition from state i to state j, and $T_{n+1} - T_n$ denotes the waiting time (sojourn time) in state iii, which may follow an arbitrary probability distribution.

Lemma 1 (Classical result for Semi-Markov processes). If the sequence X_n possesses the Markov property, then the Semi-Markov sojourn time $T_{n+1} - T_n$) is independent of the future state but depends on its associated distribution:

$$P(T_{n+1} - T_n \leq t \big| X_n = i, X_{n+1} = j) = G_{ij}(t) \quad (5).$$

Proof. Let $E = \{1,2, \dots, K\}$be the state space, and let $(X_n)_{n\geq 0}$ be a Markov chain. Then the transition probabilities are given by

$$P_{ij} = P(X_{n+1} = j | X_n = i).$$

from the theory of Markov chains, if $P_{ij} > 0$, then the transition $i \to j$ occurs with positive probability, and there exists a positive random variable $\xi_{ij} > 0$ representing the sojourn time in state i before transitioning to state j (which is not necessarily exponentially distributed).

The distribution function of this random variable is defined as follows:

$$G_{ij}(t) = P\{\xi_{ij} < t\} \quad (6)$$

according to the defining property of a Semi-Markov process, the sojourn time ξ_{ij} is independent of the previous sojourn times $T_1 - T_0, T_2 - T_1, \dots, T_{n+1} - T_n$, as well as of the previously visited states $X_0, X_1, \dots, X_n, X_{n+1}$(since the waiting time is governed by a non-exponential distribution). From equation (5), we observe that the system is in state $X_n = i$ and transitions to state $X_{n+1} = j$, and the expression denotes the probability that the sojourn time in state i is less than t under this transition. This is thus a conditional probability.
Therefore, using the independence of the involved random variables, we may write:

$$P(T_{n+1} - T_n \leq t | X_n = i, X_{n+1} = j) = \frac{P(T_{n+1} - T_n \leq t) * P(X_n = j, X_{n+1} = j)}{P(X_n = j, X_{n+1} = j)} = P\{\xi_{ij} < t\},$$

this completes expression (6) and thus establishes the proof of the lemma.

Theorem 1.*If the process $X_t$is ergodic and the transition distributions Q_{ij} satisfy the appropriate regularity conditions, then*

$$\lim_{t\to\infty} P(X_t = j) = \pi_j \quad (7)$$

here

$$\pi_j = \frac{\widehat{\pi_j} m_j}{\sum_k \widehat{\pi}_k m_k},$$

where

$\widehat{\pi}_j$ –is the stationary distribution of the embedded Markov chain,

m_j –is the mean sojourn (holding) time in state j, and

$\sum_k \widehat{\pi}_k m_k -$ is the average duration of a full regeneration cycle.

Thus, the process admits a stable long-run distribution.

Proof. Let us assume the opposite, that is, the limit in (7) does not exist at all or there is a limit and this limit is not equal to π_j . The assumption that the limit does not exist at all contradicts the Key Renewal theorem for ergodic semi-Markov processes [16]. That is, if the semi-Markov process is ergodic, then the Markov chain underlying it is also ergodic, that is, it has the property of being reversible and inseparable. This guarantees that the process converges to a stable distribution over all states. In each state, the average residence time is finite, that is, the condition $n_i < \infty$ is satisfied, that is, the average time spent for one complete cycle of the system is finite. If this condition were not present, the limit could not exist. According to the Key Renewal theorem, when the above conditions are met, the limit of (7) exists and its value is expressed by a specific formula. Now let us assume that the limit exists and it is not equal to π_j . That is,

$$\lim_{n\to\infty} P(X_t = j) = \pi_j{}^* \neq \pi_j \quad (8).$$

We know that the states X_t have jumps in the interval [0,t]. We denote these jumps by N(t). Then:

$$P(X_t = j) = \sum_{n=0}^{\infty} P(X_t = j, N(t) = n) \quad (9)$$

This equation above means that the probability of being in state j at time t is $n = 0$ jumps and being in j, or $n = 1$ jumps and being in j, and so on. Let's consider each case separately:

If there are no jumps and $N(t) = 0$, then equation (9) is defined as:

$$P(X_t = j, N(t) = 0) = \sum_{i\in E} \alpha_i \delta_{ij} (1 - G_i(t)) \quad (10)$$

where: α_i- initial state, δ_{ij}- Kronecker function (delta), $\big(1 - G_i(t)\big) - i$- probability of remaining in state i for time t.

Suppose there were $N(t) = 1$ jumps, then:

$$P(X_t = j, N(t) = 1) = \sum_{i\in E} \sum_{k\in E} \alpha_i P_{ik} \int_0^t [1 - G_k(t - s)] dG_{ik}(s) \quad (11)$$

if N(t)=2:

$$P(X_t = j, N(t) = 2) = \sum_{i\in E} \sum_{k\in E} \sum_{m\in E} \alpha_i P_{ik} P_{km} \int_0^t \int_0^{t-s} [1 - G_m(t - s - u) dG_{km}(u) dG_{ik}(s)] \quad (12)$$

Now for a total of $N(t) = n$ jumps, we write:

$$P(X_t = j, N(t) = n) =$$
$$\sum_{i_0, i_1, \dots, i_n \in E} \alpha_{i_0} \left(\prod_{l=0}^{n-1} P_{i_l i_{l+1}}\right) \times$$
$$\int_0^t \int_0^{t-s_1} \int_0^{t-s_1-s_2} \dots \int_0^{t-\sum_{k=1}^{n-1} s_k} [1 - G_{i_n}(t - \sum_{k=1}^{n} s_k)] dG_{i_{n-1} i_n}(s_n) \dots dG_{i_1 i_2}(s_2) dG_{i_0 i_1}(s_1) \quad (13).$$

Using the above equations (10-13) and the complete probability formula:

$$P(X_t = j) = \sum_{n=0}^{\infty} P(X_t = j \,|N(t) = n) P(N(t) = n) \quad (14)$$

We obtain . From this we obtain the equation (9) above. Thus:

$$P(X_t = j) = \sum_{n=0}^{\infty} P(X_t = j, N(t) = n)$$

The resulting equality (9) represents a series in the form of an infinite sum. From this, we can distinguish between a finite sum and an infinite sum:

$P(X_t = j) = \sum_{n=0}^{N} P(X_t = j, N(t) = n) + \sum_{n=N+1}^{\infty} P(X_t = j, N(t) = n)$ (15).

As a result, we find the following estimate of the difference using the estimation method presented in [16]:

$$\left| P(X_t = j) - \sum_{n=0}^{N} P(X_t = j, N(t) = n) \right| = \left| \sum_{n=N+1}^{\infty} P(X_t = j, N(t) = n \right| \leq \sum_{n=N+1}^{\infty} dn^{-\beta} e^{-\gamma n}$$

$$\leq d \int_{N}^{\infty} x^{-\beta} e^{-\gamma x} dx = d\gamma^{\beta-1} \Gamma(1-\beta, \gamma N)$$

Let us analyze the case of this estimate in $N \to \infty$:

$$\left| \sum_{n=N+1}^{\infty} P(X_t = j, N(t) = n \right| \leq d \cdot \gamma^{\beta-1} \cdot \left[(\gamma N)^{-\beta} e^{-\gamma N} \left(1 - \frac{\beta}{\gamma N} + \cdots \right) \right] = d \cdot \gamma^{-1} \cdot N^{-\beta} e^{-\gamma N} (1 + O\left(\frac{1}{N}\right))$$

Here we can see two cases:

-if $\gamma > 0$ then the sum approaches zero as $N \to \infty$ due to $e^{-\gamma N}$;

-if $\gamma \leq 0$ then the sum approaches zero as $N \to \infty$ due to the polynomial $N^{-\beta}$.

Now let's try to get the estimate for the case $\gamma \leq 0$. The original estimate is as follows:

$$\left| \sum_{n=N+1}^{\infty} P(X_t = j, N(t) = n \right| \leq d \cdot \sum_{n=N+1}^{\infty} n^{-\beta} e^{-\gamma n}$$

If $\gamma = 0$

$$\left| \sum_{n=N+1}^{\infty} P(X_t = j, N(t) = n \right| \leq d \cdot \sum_{n=N+1}^{\infty} n^{-\beta} \leq d \cdot \int_{N}^{\infty} x^{-\beta} dx$$

and from this

$$\left| \sum_{n=N+1}^{\infty} P(X_t = j, N(t) = n \right| \leq \begin{cases} d\gamma^{-1} N^{-\beta} e^{-\gamma N}, & \gamma > 0 \\ d(\beta-1)^{-1} N^{1-\beta}, \gamma \leq 0, \beta > 1 \\ \infty, & \gamma = 0, \beta \leq 1 \end{cases}$$

We get . This means that the sum approaches 0 in both cases as $N \to \infty$. This means that, according to the Key Renewal theorem, there is a limit for an ergodic semi-Markov process and it is equal to $\pi_j{}^*$. If the limit does not exist or is not equal to $\pi_j{}^*$, this violates the ergodicity conditions. Therefore, under the given conditions:

$$\lim_{n \to \infty} P(X_t = j) = \pi_j{}^*$$

let us now show that $\pi_j{}^* \neq \pi_j$: In this case, there will be two stationary distributions, which contradicts ergodicity. Because in an ergodic system, the stationary distribution is unique. That is, $\pi_j{}^* \neq \pi_j$. The theorem is proved.

Let us assume that there exists a device or indicator function that identifies the occurrence of a trade event for a given asset in the market. According to equation (1) presented above, we denote the trading times as$\{T\}_1^n$. For example, $N(11{:}25) = 30$means that a total of 30 trades were executed by 11:25.

Now, determining how many trades occurred within the most recent minutes (i.e., over minimal time intervals) allows us to analyze trading intensity. Based on all past information$\mathcal{F}_t$ in the market (price dynamics, previous trades, trading volume, news, etc.), the intensity function links the available information with the speed of trade occurrences. If, according to equation (2), the intensity $\lambda(t|\mathcal{F}_t)$increases, this indicates the presence of new information in the market; otherwise, the market remains in a calm and stable state. Through the intensity function, we can determine the current condition of the market.

Of particular interest is the situation in which new information triggers further trading activity, meaning that one trade induces another. This phenomenon is studied through the self-exciting process known as the Hawkes process. In equation (3), $\mu(t)$represents the baseline intensity, which describes the rate of trading even in the absence of new information. The integral part of this equation reflects the effect of past trades influencing future trades in the market. This very mechanism of mutual excitation is referred to as the Hawkes process.

Market fluctuations are generally divided into three categories: low volatility, medium volatility, and high volatility. Studying how long the market remains in a particular state enables us to determine appropriate trading strategies. However, since market components are stochastic in nature, these states are characterized probabilistically, as expressed in equation (4).

Suppose that the market is currently experiencing low volatility. We are interested in when and to which state the market will transition. For example, $X_1 \to X_3$ denotes a transition from low volatility to high volatility within time t with probability$Q_{13}(t)$. If the transition probability is determined, then a duration component independent of the Markov state is incorporated; that is, according to the lemma, it can be interpreted as$Q_{ij}(t) = p_{ij}\, G_{ij}(t)$.

The market maintains its state for a certain period and gradually changes its current condition. Even if the intensity function reaches its maximum level, the market stabilizes under the influence of its long-run distribution (theorem-1).

Research results

In the methodology, we model the self-organizing trading system using a Semi-Markov–Hawkes process through the following system:

$$\begin{cases} Q_{ij}(t) = p_{ij}\, G_{ij}(t), \\ X_t = X_n \; agar \; T_n \le t < T_{n+1} \\ \lambda(t) = \mu X_t + \int_0^t \phi_{X_s X_t}(t-s) dN(s) \\ \lim_{t\to\infty} P(X_t = j) = \pi_j \end{cases} \quad (16).$$

Using this system, we conducted a 30-day observation in the farmers' market located in Nukus city for three products (flour, meat, and chicken eggs). The changes in market states observed during the study are presented in table 1 below:

Table 1 : 30-day market states at the farmers' market in Nukus (1 –X_1 low volatility, 2 – X_2 medium volatility, and 3 – X_3 high volatility)

	Kun 1	Kun 2	Kun 3	Kun 4	Kun 5	Kun 6
0	1	1	2	1	1	2
1	3	2	1	1	2	2
2	3	2	1	1	2	3
3	2	1	1	2	2	3
4	2	1	1	2	1	1

The number of trades by product was calculated using equation (1) and is presented in table 2 below:

Table 2 : Number of trades $N(t)$

Day	Regime	Trades	Day	Regime	Trades	Day	Regime	Trades
1	1	110	11	2	230	21	1	122
2	1	120	12	2	195	22	2	210
3	2	210	13	3	360	23	2	190
4	1	115	14	2	205	24	3	355
5	1	105	15	1	108	25	2	205
6	2	220	16	1	112	26	1	111
7	3	340	17	2	215	27	1	109
8	2	200	18	3	380	28	2	220
9	1	125	19	2	225	29	1	117
10	1	118	20	1	119	30	1	121

From Table 2 presented above, we determine the values of the intensity function and present the results in table 3 below:

Table 3 : Daily conditional intensity values $\lambda(t|\mathcal{F}_t)$

Day	Regime	Lambda	Day	Regime	Lambda	Day	Regime	Lambda
1	1	113.7	11	2	210.4	21	1	113.7
2	1	113.7	12	2	210.4	22	2	210.4
3	2	210.4	13	3	358.8	23	2	210.4
4	1	113.7	14	2	210.4	24	3	358.8
5	1	113.7	15	1	113.7	25	2	210.4
6	2	210.4	16	1	113.7	26	1	113.7
7	3	358.8	17	2	210.4	27	1	113.7
8	2	210.4	18	3	358.8	28	2	210.4
9	1	113.7	19	2	210.4	29	1	113.7
10	1	113.7	20	1	113.7	30	1	113.7

The following table presents the Hawkes intensity values determined using the corresponding parameter estimates (table 4):

Table 4 : Hawkes intensity values $\lambda(t)$

```
mu1 = 113.7
mu2 = 210.4
mu3 = 358.8
alpha = 0.0015
beta  = 0.8
rho   = 0.00187  (stability condition rho < 1)

30-Day Hawkes Conditional Intensity (Compact 10 × 6 Table)
```

Day	Regime	Lambda	Day	Regime	Lambda	Day	Regime	Lambda
1	1	113.70	11	2	210.57	21	1	113.92
2	1	113.77	12	2	210.63	22	2	210.58
3	2	210.51	13	3	359.04	23	2	210.62
4	1	113.89	14	2	210.75	24	3	359.03
5	1	113.86	15	1	113.99	25	2	210.74
6	2	210.54	16	1	113.91	26	1	113.99
7	3	359.01	17	2	210.57	27	1	113.91
8	2	210.72	18	3	359.02	28	2	210.57
9	1	113.98	19	2	210.76	29	1	113.92
10	1	113.91	20	1	114.01	30	1	113.88

In the next stage, we calculate the semi-Markov transition probabilities. For this purpose, we use table 1. According to the data, the transition$X_1 \to X_2$ occurred 6 times, while$X_1 \to X_1$ occurred 7 times.Following the same logic, the transitions $X_2 \to X_1$occurred 6 times, $X_2 \to X_2$ occurred 2 times, and $X_2 \to X_3$ occurred 2 times.Similarly, the transition $X_3 \to X_1$ did not occur, $X_3 \to X_2$ occurred only once, and$X_3 \to X_3$did not occur.As a result, we determined the following transition probabilities:

$$P = \begin{pmatrix} 0.538 & 0.462 & 0 \\ 0.6 & 0.2 & 0.2 \\ 0 & 1 & 0 \end{pmatrix} \quad (17).$$

After determining the transition probabilities, the semi-Markov sojourn time (duration) is calculated, and as a result, the values of the transition distribution function are obtained (table 5):

Table 5 : Values of the transition distribution function

Transition (i→j)	Q_ij(1 day)	Q_ij(2 days)
1→2	0.000	0.667
2→3	0.250	0.375
2→1	0.375	0.500
3→2	1.000	1.000

From table 5 presented above, we observe that$T_{max} = 2$, since the maximum transition duration was two days (see table 1).Using the transition probabilities (16) and the mean sojourn times ($m_1 = 2, m_2 = 1{,}2, m_3 = 1$), we determine the stationary distribution of the embedded Markov chain as$\hat{\pi} = (0.52,\ 0.40,\ 0.08)$. Then,

according to the theorem, the stationary distribution of the semi-Markov process is obtained as$\pi = (0.65,\ 0.30,\ 0.05)$.

Conclusion

In this discrete-time Semi-Markov–Hawkes model, three states were analyzed:1 – low volatility,2 – medium volatility, and3 – high volatility.Based on empirical data, the Markov transition matrix was constructed. The results show that the probability of the market remaining in state 1 is higher compared to the other states. Observations indicate that transitions from state 2 to state 1 occur relatively frequently. The third state was found not to be independent, as it quickly transitions to state 2.The average sojourn time in each state was determined to be 2 days for state 1, 1.2 days for state 2, and 1 day for state 3. From these average durations, it can be concluded that the low-volatility state is relatively stable, whereas the high-volatility state is short-term and highly dynamic.Since the conditions of the theorem are satisfied, the long-run distribution of the system indicates that the process spends 65% of the time in state 1, 30% in state 2, and 5% in state 3. Therefore, the model demonstrates that the market predominantly operates around low and medium activity levels, while high activity is rare and short-lived.Overall, the Semi-Markov model constructed based on 30 days of data adequately reflects the dynamics of the real process, accounts for duration effects, and enables forecasting of long-term behavior. Because the process is ergodic, a stationary distribution emerges over time, and the system converges to a statistically stable state.

References

- *Almgren, R., Chriss, N. Optimal execution of portfolio transactions. Journal of Risk, 2000y. 3(2), 5–39.*
- *Bacry, E., Muzy, J. F. Hawkes process modeling of high-frequency order book dynamics. Quantitative Finance, 2014 y., 14(7), 1147–1166.*
- *Bacry, E., Mastromatteo, I., Muzy, J. F. Hawkes processes in finance. Market Microstructure and Liquidity, 2015y., 1(1), 1550005.*
- *Barbu, V. S., Limnios, N. Semi-Markov chains and hidden semi-Markov models toward applications. Springer. 2008 y.*
- *Bowsher, C. G. Modelling systemic liquidity with marked point processes. Journal of Financial Markets, 2007y., 10(3), 344–384.*
- *Bouchaud, J. P. The (unfortunate) complexity of the economy. Physical A: Statistical Mechanics, 2009y., 389(19), 4305–4321.*
- *Farmer, J. D., Patelli, P., Zovko, I. I. The predictive power of zero-intelligence in financial markets. Proceedings of the National Academy of Sciences, 2005y., 102(6), 2254–2259.*
- *Hawkes, A. G. Spectra of some self-exciting and mutually exciting point processes. Biometrika, 1971y., 58(1), 83–90.*
- *Hardiman, S. J., Bercot, N., Bouchaud, J. P. Critical reflexivity in financial markets: a Hawkes process analysis.The European Physical Journal B. 2013y., 86(10), 442.*
- *Kyle, A. S. Continuous auctions and insider trading. Econometrica, 1985y., 53(6), 1315–1335.*
- *Rambaldi, M., Bacry, E., Lillo, F. Modeling market microstructure with Hawkes processes. Quantitative Finance, 2017y., 17(7), 999–1020.*
- *Sornette, D. Self-organization in financial markets. Springer Complexity. 2014y.*
- *Swishchuk, A. Semi-Markov models for financial markets.Springer. 2013y.*
- *Daley, D. J., Vere-Jones, D.* An Introduction to the Theory of Point Processes: 2003y., Volume I–II.*Springer.*
- *Collet, Martinez, San Martín.*Quasi-stationary distributions: Markov chains, diffusions and dynamical systems, *Springer. 2015y.*
- *Limnios Oprisan. Semi-Markov Processes and Reliability/ Birkhäuser Boston 2001. https://doi.org/10.1007/978-1-4612-0161-8*

INTEGRATING IOT, GIS, AND ARTIFICIAL INTELLIGENCE TECHNOLOGIES INTO DIGITAL MONITORING SYSTEMS

Hamidov Hamdam Hasanovich[1]

ABSTRACT

The rapid development of digital technologies has significantly transformed industrial and monitoring systems, particularly through the integration of Artificial Intelligence (AI), the Internet of Things (IoT), and Geographic Information Systems (GIS). This study examines the role of AI and IoT technologies in industrial applications, energy management, and integrated monitoring systems, emphasizing their contribution to operational efficiency, cost reduction, and sustainable development. IoT devices enable real-time data collection through interconnected sensors, while GIS provides spatial visualization and territorial analysis of monitored processes. Artificial intelligence enhances these systems by performing advanced data analysis, identifying hidden patterns, and generating accurate forecasts to support decision-making. The coordinated use of AI, IoT, and GIS within unified digital platforms improves monitoring accuracy, responsiveness, and adaptability compared to standalone technologies. Practical examples from global companies demonstrate the effectiveness of smart manufacturing and energy optimization solutions based on these technologies. At the same time, challenges related to data security, system reliability, and interoperability remain critical issues. Overall, integrated digital monitoring systems are essential for effective management in industry, energy, environmental protection, agriculture, and urban infrastructure, requiring a comprehensive and coordinated digital transformation approach.

Keywords. *Artificial Intelligence, Internet of Things, GIS, Digital Monitoring Systems, Smart Manufacturing, Energy Efficiency.*

Annotatsiya.

Raqamli texnologiyalarning jadal rivojlanishi sanoat va monitoring tizimlarida tub o‘zgarishlarni yuzaga keltirdi. Ushbu tadqiqot sun’iy intellekt (AI), Narsalar interneti (IoT) va geografik axborot tizimlari (GIS) integratsiyasining sanoat, energetika va monitoring jarayonlaridagi ahamiyatini tahlil qiladi. IoT texnologiyalari sensorlar orqali real vaqt rejimida katta hajmdagi ma’lumotlarni yig‘ishni ta’minlasa, GIS ushbu ma’lumotlarni hududiy tahlil qilish va vizualizatsiya qilish imkonini beradi. Sun’iy intellekt esa to‘plangan ma’lumotlarni chuqur tahlil qilish, yashirin qonuniyatlarni aniqlash va aniq bashoratlar ishlab chiqish orqali qaror qabul qilish jarayonini qo‘llab-quvvatlaydi. AI, IoT va GIS texnologiyalarining yagona platformada uyg‘unlashuvi monitoring tizimlarining aniqligi, tezkorligi va moslashuvchanligini sezilarli darajada oshiradi. Global kompaniyalar tajribasi ushbu texnologiyalar asosida energiya samaradorligi va ishlab chiqarish jarayonlarini optimallashtirish mumkinligini ko‘rsatadi. Shu bilan birga, axborot xavfsizligi, ma’lumotlar ishonchliligi va tizimlararo moslik muammolari dolzarb bo‘lib qolmoqda. Integratsiyalashgan monitoring tizimlari sanoat, energetika, ekologiya, qishloq xo‘jaligi va shahar infratuzilmasini samarali boshqarish uchun muhim vosita hisoblanadi.

Kalit so‘zlar. Sun’iy intellekt, Narsalar interneti, GIS, Raqamli monitoring, Aqlli ishlab chiqarish, Energiya samaradorligi.

[1] Candidate of Economic Sciences (PhD), Associate Professor Tashkent State University of Economics, Department of “Digital Economy”,

Аннотация. Быстрое развитие цифровых технологий привело к значительным изменениям в промышленных и мониторинговых системах, особенно за счёт интеграции искусственного интеллекта (AI), Интернета вещей (IoT) и геоинформационных систем (GIS). В данной работе рассматривается применение AI и IoT в промышленности, энергетике и интегрированных системах мониторинга с акцентом на повышение эффективности, снижение затрат и устойчивое развитие. Технологии IoT обеспечивают сбор данных в реальном времени с помощью сенсоров, тогда как GIS позволяет выполнять пространственный анализ и визуализацию информации. Искусственный интеллект играет ключевую роль в глубокой обработке данных, выявлении скрытых закономерностей и прогнозировании, что способствует принятию обоснованных управленческих решений. Совместное использование AI, IoT и GIS в рамках единой цифровой платформы значительно повышает точность, оперативность и адаптивность мониторинговых систем. Практические примеры ведущих мировых компаний подтверждают эффективность «умного» производства и энергоменеджмента на основе данных технологий. Вместе с тем остаются актуальными проблемы информационной безопасности, надёжности данных и совместимости систем. Интегрированные цифровые системы мониторинга являются важным инструментом эффективного управления в промышленности, энергетике, охране окружающей среды, сельском хозяйстве и городской инфраструктуре.

Ключевые слова. Искусственный интеллект, Интернет вещей, GIS, Цифровой мониторинг, Умное производство, Энергоэффективность.

Introduction.

In recent years, the rapid development of digital technologies has led to fundamental changes in management, control, and analytical processes across all sectors of the economy. In particular, under conditions where the need to monitor complex systems in real time and to collect and analyze data quickly is increasing, the importance of digital monitoring systems has grown significantly. Such systems have become an essential tool for improving efficiency in areas such as manufacturing, transportation, energy, agriculture, environmental protection, healthcare, and urban infrastructure management.

The effectiveness of digital monitoring systems largely depends on the level of integration of advanced technologies. From this perspective, the integration of Internet of Things, Geographic Information Systems, and Artificial Intelligence technologies is considered one of the most relevant scientific and practical challenges today. IoT technologies enable the automatic collection of large volumes of data through various sensors and devices, while GIS supports the spatial visualization and geographic analysis of this data. Artificial intelligence, in turn, makes it possible to conduct in-depth analysis of the collected information, identify patterns, generate forecasts, and optimize management decisions.

The separate application of these technologies can yield certain results, significantly higher efficiency can be achieved by integrating them within a unified digital monitoring system. Integrated systems allow real-time data acquisition, automated processing, early detection of risks and malfunctions, and the implementation of timely response measures. This contributes to the rational use of resources, cost reduction, and the minimization of errors associated with human factors.

At the same time, the introduction of IoT, GIS, and artificial intelligence technologies into digital monitoring systems is accompanied by a number of challenges. These include insufficient technical infrastructure, data security concerns, a shortage of qualified specialists, and compatibility issues between different technological platforms. In addition, the processing of large volumes of data and ensuring their

reliability require special attention.Studying the theoretical foundations of integrating IoT, GIS, and artificial intelligence technologies into digital monitoring systems, analyzing their practical potential, and identifying existing challenges are of significant scientific and practical importance. An in-depth examination of this topic creates opportunities to further improve digital monitoring systems, expand their effective application across various sectors, and support sustainable development.

Analysis of Literature on the Topic. The existing body of literature demonstrates that the integration of artificial intelligence, the Internet of Things, and Geographic Information Systems has become a key research direction in the context of digital transformation and smart system development. Numerous studies emphasize that AI technologies significantly enhance analytical capabilities by enabling prediction, optimization, and real-time decision-making based on large and complex datasets. Researchers note that machine learning algorithms are particularly effective in identifying hidden patterns in industrial, energy, and environmental data, which supports more accurate forecasting and strategic planning.

The literature on IoT highlights its fundamental role as a data acquisition layer within digital systems. Scholars agree that IoT sensors provide continuous, real-time data streams that form the basis for intelligent monitoring and control. Studies in industrial and energy sectors report that IoT-based monitoring improves operational transparency, reduces resource waste, and increases system efficiency. However, many authors also point out persistent challenges, including cybersecurity risks, data privacy concerns, and device reliability issues, which limit the full-scale adoption of IoT solutions.Research focusing on GIS underscores its importance in spatial analysis and visualization. The integration of GIS with IoT-generated data allows researchers and practitioners to analyze processes not only temporally but also geographically. This spatial dimension is widely recognized in the literature as critical for applications such as environmental monitoring, urban infrastructure management, agriculture, and energy distribution. By visualizing data on maps, GIS enhances situational awareness and supports location-based decision-making.

Recent studies increasingly argue that the greatest benefits emerge when AI, IoT, and GIS are combined within unified monitoring platforms. The literature suggests that such integrated systems outperform standalone technologies by improving accuracy, adaptability, and responsiveness. AI-driven analytics applied to IoT and GIS data enable predictive monitoring, early risk detection, and optimization of resources across different sectors. Empirical studies and case analyses from global companies, such as those in manufacturing and energy industries, further support the conclusion that integrated smart systems contribute to higher energy efficiency, cost reduction, and sustainability.

Scholars identify unresolved issues in the implementation of integrated monitoring systems. These include data interoperability, standardization of platforms, information security, and the need for skilled specialists. Overall, the literature indicates a clear consensus that IoT GIS AI integration represents a promising and necessary direction for advanced digital monitoring, while also highlighting the need for further research to address technical, organizational, and security-related challenges.

Research Methodology.

This study adopts a qualitative and analytical research methodology aimed at examining the role and effectiveness of integrating IoT, GIS, and artificial intelligence technologies within digital monitoring systems. The methodological approach is based on a comprehensive review and synthesis of scientific literature, technical reports, and practical case studies related to smart manufacturing, energy management, and integrated monitoring platforms.

Analysis and results.

Artificial intelligence makes it possible to automate certain functions of human intelligencesuch as analysis, decision-making, and forecastingby embedding them into digital systems. Through AI algorithms and machine learning techniques, companies can analyze complex data flows and develop more effective operational strategies. For example, in manufacturing and retail sectors, AI enables the automation of processes, reduction of errors, and optimal allocation of resources, which helps lower operational costs. At the same time, AI-based systems can make real-time decisions, thereby enhancing the competitiveness of enterprises.

IoT refers to a network of interconnected devices that communicate with other IoT devices and cloud platforms to exchange data. IoT devices are typically equipped with sensors, software, and communication technologies, and they may include mechanical and digital machines as well as consumer objects. The IoT ecosystem consists of web-enabled smart devices that use embedded systemssuch as processors, sensors, and communication hardwareto collect data from their environment, transmit it, and act upon it.Despite its vast potential, IoT is not without challenges. Security is a major concern, as connected devices may be vulnerable to hacking and malware attacks. Privacy also poses a significant issue, since data collected by IoT devices can be used to monitor individuals' activities and behaviors. In addition, there are concerns about the reliability of IoT devices, as they may malfunction or fail. Nevertheless, despite these challenges, IoT is becoming an integral part of modern life and continues to transform the way people live, work, and interact. As technology advances, it enables the development of more efficient and sustainable solutions to global challenges.

Table : 1 Application Areas of AI and IoT Technologies in Industrial Systems

Technology	Application Area	Main Function	Expected Outcome
Artificial Intelligence	Manufacturing	Prediction and optimization	Cost reduction
Machine Learning	Energy sector	Energy consumption forecasting	Increased efficiency
IoT Sensors	Monitoring	Real-time control and supervision	Resource savings
Cloud Platforms	Smart systems	Data integration and management	Faster decision-making

The use of artificial intelligence in energy analysis represents one of the most promising applications of IoT systems. When IoT platforms are integrated with AI technologies, it becomes possible to conduct in-depth analysis and forecasting of energy consumption. For instance, by managing energy use in line with changes in production volumes, companies can prevent unnecessary energy losses and improve overall efficiency.

Integration with additional systems further expands the potential of IoT. By combining IoT solutions with solar panels, wind turbines, and other renewable energy sources, industries can achieve a more sustainable and cost-effective energy supply. Such integration supports long-term energy efficiency and reduces dependence on traditional energy resources.

Improving the ecosystem through IoT technologies also contributes to environmental sustainability. Energy efficiency not only promotes industrial development but also helps address environmental challenges. IoT systems enable more effective control of emissions and reduction of waste, thereby supporting ecological protection efforts.

In coordinated smart technology systems, often referred to as Smart Manufacturing, IoT devices operate as an integrated whole. Each device performs its function in real time, contributing to improved energy efficiency and optimized production processes.Several global companies illustrate the practical benefits of these technologies. Bosch, for example, developed its own IoT platform and achieved up to a 30 percent improvement in energy efficiency in industrial operations by analyzing data from various production lines and optimizing resource distribution. Hitachi implemented advanced IoT-based programs to reduce excessive energy consumption in manufacturing, achieving an estimated 15 percent reduction through data-driven energy management. Similarly, Tesla's Gigafactory relies on IoT technologies to ensure that energy resources are supplied entirely from renewable sources. The factory utilizes solar power and IoT-controlled automated systems to enhance sustainability and operational efficiency.

Table 2 : IoT–GIS–AI Integrated Monitoring Systems

Technology	**Function**	**Role in Monitoring**
IoT (Internet of Things)	Data collection	Real-time data acquisition
GIS (Geographic Information Systems)	Spatial analysis	Visualization and spatial mapping
AI (Artificial Intelligence)	Prediction and analysis	Decision support and optimization

The integration of IoT, GIS, and artificial intelligence technologies into digital monitoring systems is elevating monitoring processes to a qualitatively new level. Research indicates that while individual technologies can effectively perform specific functions, their harmonized use within a unified platform ensures greater accuracy, responsiveness, and adaptability.Through IoT technologies, large volumes of data are collected in real time via sensors. When this data is integrated with GIS systems, it becomes possible to visualize information spatially and identify geographic relationships. As a result, the spatial condition, dynamics, and regional differences of the monitored object or process can be clearly represented.

Artificial intelligence plays a crucial role in the in-depth analysis of the collected data, the identification of hidden patterns, and the forecasting of future developments. The discussion highlights that the application of AI algorithms reduces errors associated with human involvement, accelerates decision-making processes, and enhances the adaptability of monitoring systems. At the same time, issues related to information security, data reliability, and interoperability between systems emerge as pressing challenges during the implementation of these technologies.

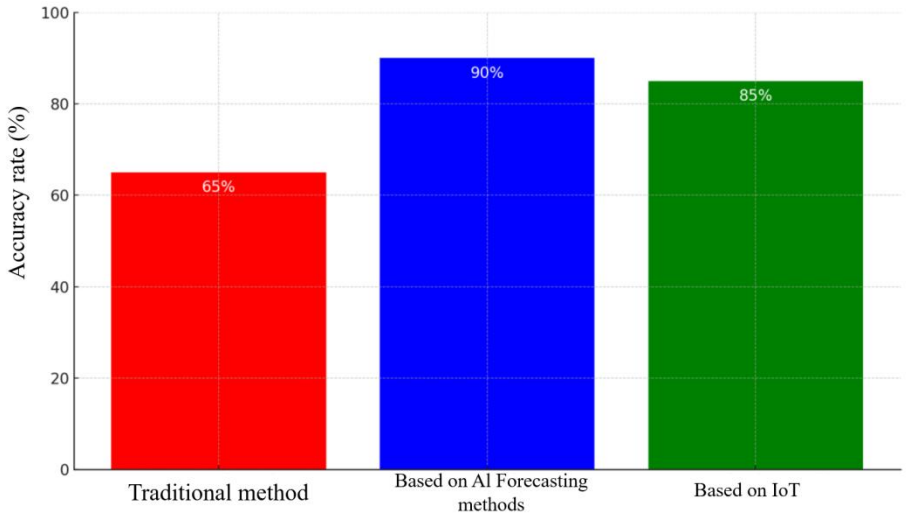


Figure 1. The level of accuracy when satellite data and Artificial Intelligence are applied.

Integrated monitoring systems have been discussed as an essential tool for ensuring effective management across various sectors, including industry, energy, environmental protection, agriculture, and urban infrastructure. This, in turn, requires the digital transformation process to be implemented through a comprehensive and coordinated approach.

Conclusion.

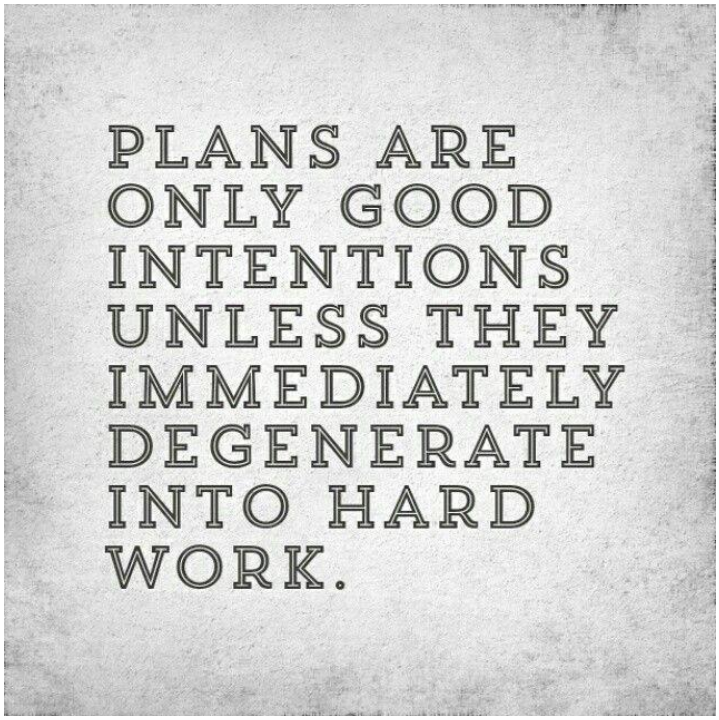
The integration of artificial intelligence, IoT, and GIS technologies into digital monitoring systems represents a critical advancement in modern industrial and socio-economic development. As demonstrated through the analysis, AI enables intelligent data processing, predictive analytics, and real-time decision-making, while IoT ensures continuous and reliable data collection from physical environments. GIS complements these technologies by providing spatial visualization and geographic context, which enhances the interpretability and practical application of monitoring results.

The combined use of these technologies significantly improves energy efficiency, optimizes production processes, and supports sustainable resource management. Practical examples from global companies such as Bosch, Hitachi, and Tesla confirm that integrated smart systems can lead to substantial reductions in energy consumption and operational costs while increasing environmental sustainability.Despite these advantages, the successful implementation of integrated monitoring systems requires addressing key challenges related to cybersecurity, data reliability, and system compatibility.Digital transformation should be approached in a comprehensive and coordinated manner, emphasizing technological integration, institutional readiness, and regulatory support.

IoTGISAI integrated monitoring systems are not only technological innovations but also strategic tools for effective management across industry, energy, environmental protection, agriculture, and urban infrastructure. Their widespread adoption has the potential to enhance competitiveness, support sustainable development goals, and ensure more resilient and intelligent decision-making processes in the digital economy.

References

- *Atzori, L., Iera, A., & Morabito, G. (2010).*The Internet of Things: A survey.*Computer Networks, 54(15), 2787–2805.*
- *Lee, J., Bagheri, B., & Kao, H. A. (2015).*A cyber-physical systems architecture for Industry 4.0-based manufacturing systems. *Manufacturing Letters, 3, 18–23.*
- *Zhou, K., Fu, C., & Yang, S. (2016).*Big data driven smart energy management: From big data to big insights. *Renewable and Sustainable Energy Reviews, 56, 215–225.*
- *Kshetri, N. (2017).*Can blockchain strengthen the Internet of Things? *IT Professional, 19(4), 68–72.*
- *Goodfellow, I., Bengio, Y., & Courville, A. (2016).*Deep learning. *MIT Press, Cambridge, MA.*
- *Batty, M. (2013).*Big data, smart cities and city planning. *Dialogues in Human Geography, 3(3), 274–279.*
- *Li, S., Da Xu, L., & Zhao, S. (2015).*The internet of things: A survey. *Information Systems Frontiers, 17(2), 243–259.*
- *Zhang, Y., Chen, M., & Li, T. (2018).*Integration of GIS and IoT for smart monitoring systems. *International Journal of Geographical Information Science, 32(8), 1565–1583.*
- *Porter, M. E., & Heppelmann, J. E. (2015).*How smart, connected products are transforming companies. *Harvard Business Review, 93(10), 96–114.*
- *Kagermann, H., Wahlster, W., & Helbig, J. (2013).*Recommendations for implementing the strategic initiative INDUSTRIE 4.0. *Final Report of the Industrie 4.0 Working Group, Germany.*



OPTIMIZING MECHANISMS FOR THE DEVELOPMENT OF FAMILY GUEST HOUSE ACTIVITIES

Dilbar Xasanona Aslanova[1], Jasur Farxodovich Fattayev[2]

ABSTRACT

This article focuses on increasing the share of guest houses in the regional tourism services market of Uzbekistan. Particular attention is given to creating comfortable conditions for tourists and enhancing the quality of their travel experience as a strategic priority in the development of inbound, domestic, and regional tourism. The paper proposes practical recommendations and mechanisms aimed at strengthening the role of family guest houses in the tourism industry and ensuring their sustainable growth.

Keywords: *Guest Houses, Regional Tourism, Culture, Cooperation, Services, Market, Tourists, World Tourism Organization (UNWTO), International Code For The Protection Of Tourists, Foreign Tourists, Tourism Industry.*

Introduction

The development of the regional tourism services market in Uzbekistan is closely linked to the historical cities of the country, which hold exceptional cultural and architectural significance. Numerous monuments of global cultural heritage are located within these regions. Historically, Uzbekistan served as a major center along the Great Silk Road, connecting Eastern and Western civilizations through trade, economic exchange, and cultural interaction.

Beyond the exchange of goods, the Silk Road facilitated the spread of cultures, traditions, crafts, religions, and spiritual values. Tourism today represents the movement of individuals for leisure, cultural enrichment, spiritual growth, and the exploration of historical and sacred sites.

Regional tourism plays a vital role in accelerating economic development and addressing socio-economic challenges. Expanding the number of guest houses contributes to job creation, increases employment among the economically active population, enhances national welfare, and stimulates related sectors and infrastructure development. Additionally, tourism serves as a powerful instrument for strengthening civic consciousness and cultural identity.

Literature Review

According to **Nuriakhmetova A.F.**, guest houses are primarily accommodation facilities located in rural areas, distinguished from hotels by providing home-like living conditions.

Osipova E.E. argues that guest houses represent an economically viable model for rural populations and emphasizes the importance of calculating occupancy-related costs during the initial stages of business planning.

[1] Doctor of Philosophy in Economics, ProfessorDepartment of Digital Economy. Samarkand Institute of Economics and Service

[2] Independent ResearcherSamarkand Institute of Economics and Service

A.I. Chupakhina defines a guest house as a form of short-term accommodation primarily oriented toward families, which may also include the organization of leisure activities, provision of additional services, and informational guidance for guests.

Research Methodology

The research employed methods such as economic analysis, grouping, comparative analysis, synthesis, and scientific abstraction. The practical significance of the study lies in the proposed recommendations aimed at increasing the share of guest houses in the regional tourism services market and supporting sustainable development within the sector.

Analysis and Results

In the Address to the Oliy Majlis and the People of Uzbekistan dated December 26, 2025, President Shavkat Mirziyoyev outlined ambitious goals for tourism development. These strategic objectives provide a methodological framework for tourism professionals and researchers for the next five years.

Among the key targets are:

- Doubling the number of foreign tourists from 11 million to 20 million within five years;
- Increasing tourism service revenues to USD 20 billion;
- Expanding tourism infrastructure, including the construction of modern pedestrian corridors and bridges connecting major landmarks in Samarkand such as Bibi-Khanym Mosque, Registan Square, Amir Temur Mausoleum, Ulughbek Observatory, Shah-i-Zinda, and the Afrosiyob Museum.

To achieve these objectives, priority tasks include:

- Creating favorable economic, institutional, and legal conditions for tourism as a strategic sector of the economy;
- Improving tourism governance mechanisms;
- Developing national tourism products and promoting them in global markets;
- Increasing tourism’s contribution to GDP and local budget revenues;
- Enhancing employment and living standards.

Further measures include:

- Improving legislation and eliminating administrative barriers;
- Simplifying visa, registration, passport, and customs procedures;
- Enhancing statistical accounting systems in tourism;
- Encouraging entrepreneurship and competition within the tourism services market;
- Ensuring the safety of tourists and excursion participants.

Special emphasis is placed on diversifying tourism types, including pilgrimage, ecological, educational, ethnographic, gastronomic, sports, medical, rural, industrial, and business tourism, as well as promoting youth, family, and social tourism.

International Cooperation

The achievement of tourism growth targets is strongly dependent on international cooperation. Uzbekistan actively collaborates with:

- The United Nations World Tourism Organization (UNWTO), including hosting the 25th Session of the UNWTO General Assembly in Samarkand in 2023;
- Implementation of joint projects under the “Silk Road” brand;
- Adoption of the International Code for the Protection of Tourists (ICPT);
- Bilateral cooperation with Azerbaijan, Kazakhstan, other Central Asian states, and the Sultanate of Oman;
- Participation in international exhibitions and tourism associations.

Conclusion

In conclusion, Uzbekistan possesses significant potential to realize its ambitious tourism development goals. Strengthening cooperation with leading international tourism organizations, implementing international standards and conventions, and expanding participation in global tourism markets will serve as a strong methodological foundation for achieving strategic objectives.

Optimizing mechanisms for the development of family guest houses will contribute to increasing regional tourism competitiveness, improving service quality, generating employment, and enhancing the socio-economic sustainability of local communities.

References

- *Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 631, August 7, 2018.*
- *Abdurakhmonov, K.X. (2013). Tourism Management. Tashkent.*
- *Golisheva, E.V. (2012). Improvement of Tourism Development Mechanisms in Market Conditions. Dissertation.*
- *Tuxliev, I.S., et al. (2014). Fundamentals of Tourism. Tashkent.*
- *Tuxliev, N., Abdullaeva, T. (2006). Management and Organization of Tourism Business in Uzbekistan.*
- *Turaev, B.X. (2009). Organizational-Economic Mechanisms of Regional Tourism.*
- *Pardaev, M.Q., Atabaev, R. (2006). Analysis and Evaluation of Tourism Resources.*
- *Alimova, M.T. (2015). Development Trends of the Regional Tourism Market.*
- *Safarov, B.SH. (2016). Methodological Foundations of Innovative Development of the National Tourism Services Market.*

THE ADVANTAGES OF IMPLEMENTING THE SMART TOURISM DESTINATION MECHANISM IN THE DEVELOPMENT OF TOURISM IN THE SURKHANDARYA REGION

Qutfiddinov Shamsiddin Kamoliddin ogli[1]

ABSTRACT

This article examines the theoretical foundations, institutional and digital infrastructure requirements, and the expected socio-economic impacts of implementing the Smart Tourism Destination (STD) mechanism in the Surkhandarya region. The study proposes a practical governance model for smart tourism based on a data ecosystem approach, service integration, user experience management, sustainability indicators, and stakeholder collaboration mechanisms. The findings demonstrate that the STD approach contributes to the diversification of tourism flows in Surkhandarya, reduces seasonality, enhances service quality and safety, stimulates local entrepreneurship, and strengthens the regional brand.

Keywords: *Smart Tourism Destination, Digital Transformation, Tourism Ecosystem, Big Data, Service Integration, Sustainable Tourism, POI, API.*

Introduction

In recent years, the tourism sector has undergone significant transformation driven by digital technologies such as mobile applications, online booking platforms, geolocation services, the Internet of Things (IoT), artificial intelligence (AI), and Big Data analytics. These technologies are reshaping management systems and service delivery models within tourism destinations.

The Smart Tourism Destination (STD) concept enables the management of a destination as a unified service and data ecosystem. This approach creates an integrated “end-to-end” experience for tourists, efficient sales channels for businesses, and real-time analytics and decision-making tools for public authorities and regional administrators.

The “end-to-end” travel model refers to a comprehensive travel solution that encompasses the entire journey—from departure to arrival and return home. Instead of separately searching for and booking individual components (e.g., taxi, flight, railway ticket, hotel), travelers are offered a unified service that can be booked simultaneously. The defining feature of this model is the ability of service providers to identify individual travelers and deliver coordinated, frictionless services in an integrated manner. Rather than navigating multiple disconnected bookings, travelers benefit from coordinated actions among interconnected travel providers.

The Surkhandarya region possesses substantial tourism potential due to its rich historical and cultural heritage (including monuments in Termez and surrounding areas), pilgrimage tourism, eco-tourism and ethno-tourism resources, as well as cross-border logistics and cultural corridors. Despite these advantages, challenges remain in packaging tourism products, standardizing information presentation, providing route-based navigation, integrating transportation and accommodation services, and managing tourist flows through digital solutions.

[1] Doctoral Researcher, Denov Institute of Entrepreneurship and Pedagogy

This article develops a conceptual model for implementing the STD mechanism in Surkhandarya and proposes evaluation criteria to assess its expected economic, social, governance, and sustainability impacts on regional tourism development.

Literature Review

The concept of smart tourism is closely associated with the development of ICT-driven and data-based governance in tourism management. It emphasizes service integration at the destination level and places tourist experience at the center of policy and operational frameworks.

Research highlights that becoming "smart" is not limited to technological adoption; rather, it requires governance innovation, inter-organizational collaboration, open data systems, standardization, and alignment with sustainability objectives.

Understanding tourists' interests and preferences in real time—through mobile activity data, surveys, and transactional records—enables the optimization of marketing strategies and resource allocation.

Greek scholar **Dimitrios Buhalis**, in his article *"Smart Tourism Destinations: Ecosystems for Tourism Destination Competitiveness,"* defines STD as a system that leverages interconnected and interoperable integrated technologies to redesign processes and data in order to generate innovative services, products, and procedures that maximize value for all stakeholders. This redesign allows the simultaneous engagement of diverse stakeholders in shaping products, processes, and services in real time, optimizing collective performance and competitiveness while creating agile solutions and shared value within the tourism ecosystem.

Similarly, **U. Gretzel**, in *"Tourism in Development: Reflective Essays,"* describes smart tourism as tourism supported by integrated efforts within a destination to collect and aggregate data derived from physical infrastructure, social connections, governmental and organizational sources, and even human cognitive and behavioral patterns. Using advanced technologies, such data are transformed into enhanced on-site experiences and business value propositions, with a clear focus on efficiency, sustainability, and enriched tourist experiences.

Furthermore, **A. Razmjoo, A. H. Gandomi, M. Pazhuhesh, S. Mirjalili, and Rizoyilar**, in their work *"The Key Role of Clean Energy and Technology in Smart Cities Development,"* emphasize that climate change, population growth, and resource constraints underscore the necessity of smart city development. Through clean energy production, technological innovation, and sustainable policy frameworks, smart city design enhances quality of life. Their findings also relate to smart tourism, particularly in terms of energy efficiency and responsible resource utilization within the context of global warming.

Research Methodology

This study applies a comprehensive scientific and methodological framework to assess the feasibility and socio-economic benefits of implementing the Smart Tourism Destination mechanism in Surkhandarya. A mixed-method approach was employed, integrating systematic analysis and comparative (benchmarking) methods. The research design combines institutional analysis, ecosystem modeling, and sustainability assessment criteria to evaluate STD implementation potential.

Analysis and Results

A Smart Tourism Destination is defined as a geographically defined area that develops tourism based on advanced technological infrastructure. Such destinations enhance the quality of tourist experiences, improve the living standards of local communities, and promote sustainable development principles.

The evaluation criteria for tourism destinations are formulated based on multiple scientific approaches, including:

- Systemic analysis
- Comparative (benchmarking) analysis
- Stakeholder analysis
- Logic model framework

These approaches enable a comprehensive assessment of digital development levels, governance efficiency, stakeholder collaboration, and the outputs and impacts of implemented initiatives. The proposed evaluation model integrates these dimensions to measure STD readiness and performance in Surkhandarya (Figure 1).

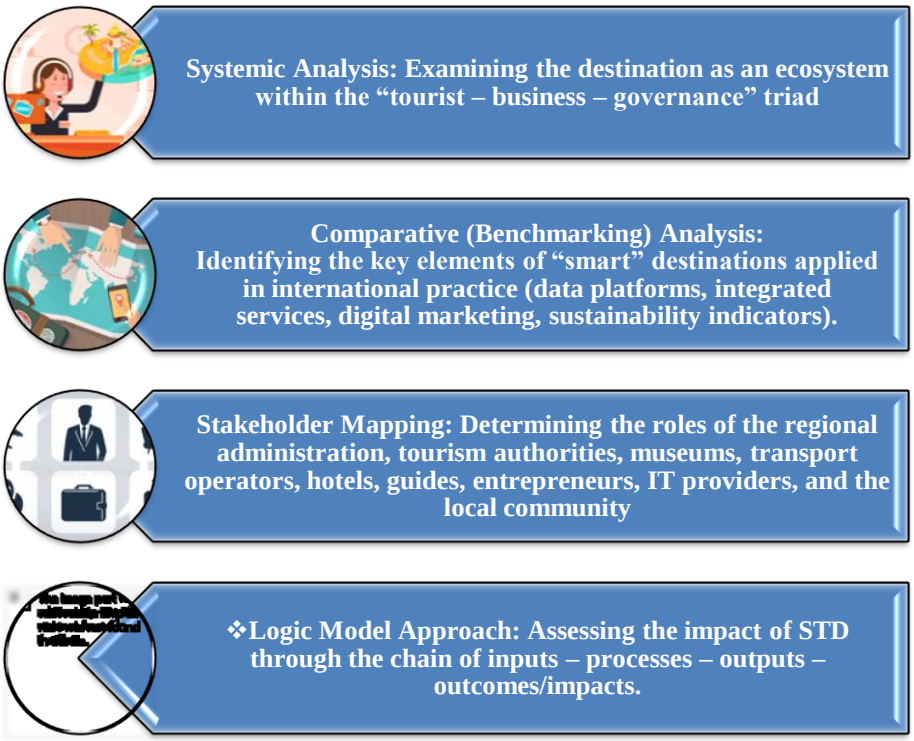


Figure 1. Research Implementation and Evaluation Criteria Based on the Smart Tourism Destination Mechanism

Some key characteristics of the Smart Tourism Destination (STD) mechanism include:

- Integration of data on local resources, tourist behavior, and consumption patterns;
- Utilization of technological platforms to enable stakeholders to derive value from collected data;

- Application of innovative solutions and the development of entrepreneurial business activities, as well as strengthening their interconnectivity;
- Development of transport infrastructure that ensures accessibility for diverse groups of travelers, including persons with disabilities;
- Use of platforms for information exchange with tourists, such as social media, QR codes, and mini-applications;
- Application of tourism research and management tools, such as the establishment of specialized tourist flow monitoring systems or the development of CRM software;
- Adoption of innovative technological approaches to enhance and enrich tourist experiences, including augmented reality (AR), gamification, and virtual reality (VR).

At present, the stages of transformation toward a smart city begin with attracting investments and resources and proceed through processes shaped by legislative frameworks, technological development, and societal factors. These stages ultimately lead to innovative development. As a result, economic efficiency, quality of life, and social welfare improve, while sustainability and effective governance systems are strengthened within the region.

The stages of transformation toward a smart city are presented below (Figure 2).

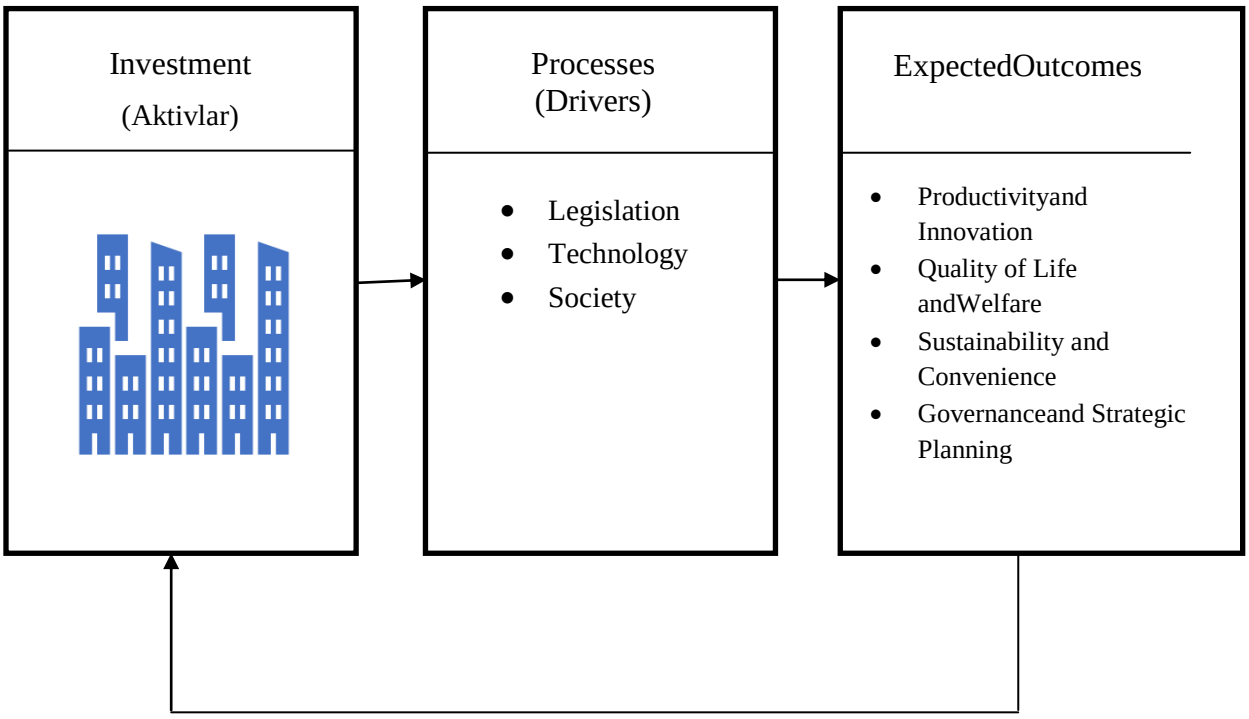


Figure 2. Sequence of Transformation Toward a Smart City

As an example of a country leading in smart tourism implementation, China can be cited. In China, tourists can use their smartphones to perform everyday activities such as paying for taxis, ordering food, checking waiting times, and accessing information about destinations or attractions through QR codes.

Today, similar services are implemented in nearly all countries worldwide. The primary reason is the widespread availability of smartphones, which creates favorable conditions for the development and large-scale deployment of mobile applications. The development of mobile applications and their integration with various systems has become one of the most relevant topics in digital transformation.

In particular, tour operators and travel agencies must utilize global location-based data to provide world-class tourism experiences and develop improved solutions for travelers. Travel and tourism datasets typically include information on cafes, museums, restaurants, beaches, outdoor sports centers, and culturally and historically significant attractions.

Owners of travel businesses must have access to accurate location data for these widely visited public places in order to create mapping services or travel-related products. Businesses must verify the current availability of locations (beaches, museums, cafes, etc.) to further develop travel itineraries and route planning.

One such service is POI (Point of Interest), which refers to a specific location marked on a map representing an attraction or other object of significance. LocationsXYZ, a POI data system developed by Xtract.io, provides access to more than six million verified locations, offering accurate and up-to-date information that supports the tourism industry in understanding geographic distribution and current trends. The location data includes attributes such as name, address, contact number, opening and closing hours, amenities, and other essential details. By using this information, tourism agencies and businesses can design precise travel plans and enhance customer experiences.

At the same time, attention should be given to data quality and regular updates, technical interoperability between services, human resource capacity in data and IT management, digital readiness of small businesses, legal requirements for handling personal data, marketing and branding strategies, multilingual content development, and the creation of personalized recommendations for each user within mobile applications.

Additionally, calculating the Return on Investment (ROI) of digital companies operating in the region—defined as the ratio between profit and investment costs—enables the comparison of different foreign investment options and the selection of the most efficient alternatives.

Conclusion

In conclusion, implementing the Smart Tourism Destination (STD) mechanism in the Surkhandarya region will transform the destination into a digital ecosystem. This transformation will enhance tourists' perceptions of the region, improve service integration and marketing efficiency, and support data-driven decision-making in tourism management based on visitor feedback and analytics.

Practical Recommendations

- Establish a unified digital registry of tourism objects and services (standardized POI database).
- Launch a unified portal and mobile application based on the "single platform" principle, ensuring gradual integration through APIs.
- Introduce short-term training programs for tourism stakeholders focused on digital literacy and service standards.

- Implement an analytical portal to continuously monitor tourist flows, satisfaction levels, complaints, conversion rates, and seasonality trends.
- Automatically test visitor management mechanisms for sustainability, including route diversification strategies.

Proposed STD Architecture for Surkhandarya

The STD mechanism in Surkhandarya is proposed to consist of the following layers:

1. Data Layer

Development of a unified platform including:

- POI registry
- Event calendar
- Transport schedules
- Pricing and availability data
- Seasonal load indicators
- Complaints and reviews
- Safety alerts

2. Integration Layer

Creation of unified standards and APIs for data integration among hotels, travel agencies, transport providers, museum ticketing systems, guide services, restaurants, and other service providers.

3. Service Layer

Development of:

- A dedicated regional mobile application
- A multilingual web portal
- A unified call center/chat service
- Digital maps and route constructors
- Online payment and booking services

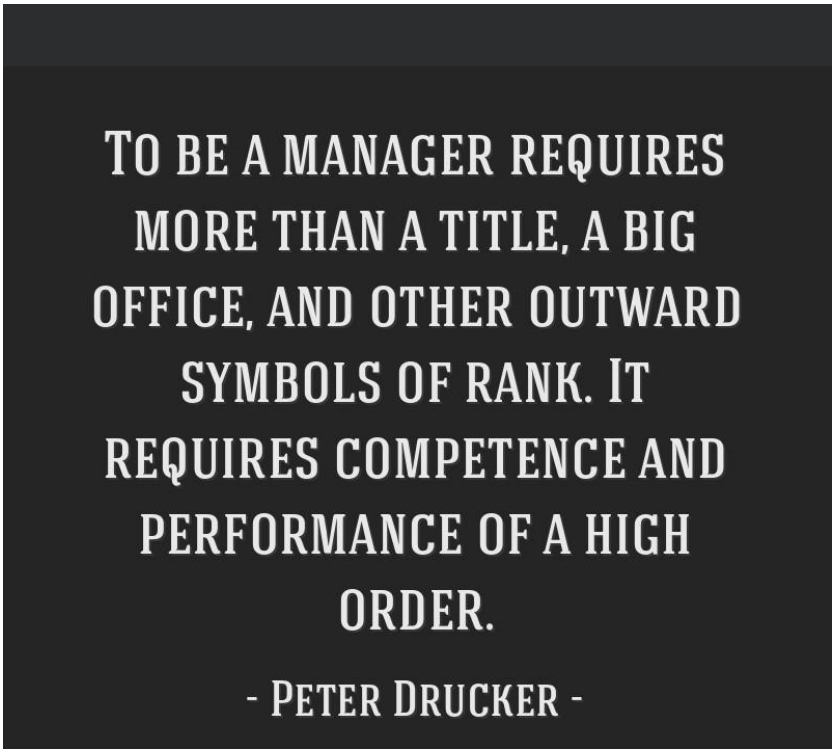
4. Analytics Layer

Implementation of analytical systems for:

- Forecasting tourist inflow and outflow
- Demand segmentation
- Resource occupancy monitoring
- Measuring marketing campaign effectiveness
- Continuous statistical reporting

References

- *Buhalis, D., & Boes, K. (2016).* Smart Tourism Destinations: Ecosystems for Tourism Destination Competitiveness. *International Journal of Tourism Cities, 2(2), 108–124.*
- *Gretzel, U. (2021).* Smart Tourism Development. *In Dieke, P., King, B., & Sharpley, R. (Eds.), Tourism in Development: Reflective Essays (pp. 159–168). CABI.*
- *UNWTO.* Tourism and Digital Transformation. *Madrid: World Tourism Organization.*
- *Razmjoo, A., et al. (2022). The key role of clean energy and technology in smart cities development.* Energy Strategy Reviews, *44, 1–8.*
- *OECD.* Tourism Trends and Policies. *OECD Publishing, Paris.*
- *Sigala, M.* A taxonomy of smart tourism destinations.
- *Amadeus (End-to-End Travel Services).*
- *Salesforce. What is ROI?*
- *POI – Wikipedia.*
- *API – Wikipedia.*



COMPETITIVE ACADEMIC SOCIALIZATION AND WORKPLACE BURNOUT AMONG MANAGEMENT GRADUATES

Shikhar Dev Mourya[1]

ABSTRACT

Business schools are widely recognized for preparing students to operate in highly competitive corporate environments. However, the intense performance-oriented culture often embedded within management education may also shape graduates' attitudes toward work in ways that extend beyond academic settings. This study examines how competitive academic socialization during management education influences workplace burnout among early-career management graduates. Drawing on theories of socialization and organizational behavior, the study argues that MBA programs frequently cultivate norms emphasizing constant achievement, performance comparison, and productivity maximization. While these norms may enhance ambition and career motivation, they may also contribute to the internalization of toxic productivity beliefs, where individuals feel compelled to maintain high levels of performance regardless of personal well-being. Using a survey-based research design targeting recent management graduates, the study investigates the relationship between competitive academic environments and burnout outcomes in professional contexts. The research further explores potential psychological mechanisms such as performance-contingent self-worth and persistent social comparison that may mediate this relationship. By linking academic socialization processes with workplace well-being outcomes, this study contributes to the literature on management education, organizational behavior, and employee burnout. The findings aim to provide insights for business schools and organizations seeking to better understand how educational environments shape long-term professional attitudes and mental health among management graduates.

Keywords : *Competitive Academic Socialization, Workplace Burnout, Management Education, Productivity Culture, Early Career Professionals, Organizational Behavior and Professional Identity Formation*

Introduction

Business schools are widely regarded as institutions designed to prepare future leaders for the complex and competitive realities of modern organizations. Through rigorous coursework, performance-based evaluations, case competitions, and highly competitive recruitment processes, management education seeks to cultivate individuals who are ambitious, resilient, and capable of thriving in demanding professional environments. In this context, competition is often framed as a necessary and productive element of managerial development. Students are encouraged to pursue excellence, outperform peers, and maintain high levels of productivity in order to succeed in the corporate world.

Yet this emphasis on relentless performance raises an important paradox. The same educational environments that aim to prepare students for successful professional careers may simultaneously cultivate behavioral and psychological patterns that make them more vulnerable to stress and burnout once they enter the workforce. In other words, business schools may inadvertently contribute to the development of a

[1] Research Scholar, Institute of Management Science, Bundelkhand University, Jhansi (U.P.)

culture that prioritizes constant productivity and achievement while normalizing chronic pressure and self-imposed performance demands. This paradox becomes particularly relevant when considering the growing concerns about burnout among young professionals in corporate settings.

In many management programs, students are exposed to intense competitive pressures from the beginning of their academic journey. Academic rankings, grade competition, internship placements, networking outcomes, and final job offers often become central indicators of success. Within this environment, students frequently engage in continuous performance comparison with their peers, striving to maintain academic and professional advantages in an increasingly competitive landscape. Over time, such experiences may function as a powerful socialization process, shaping how individuals interpret achievement, productivity, and professional identity.

Socialization processes play a crucial role in shaping individual attitudes, norms, and behavioral expectations. During formative educational experiences, individuals often internalize dominant cultural values that later influence their behavior in organizational contexts. In highly competitive academic environments, students may gradually internalize the belief that constant productivity and continuous achievement are essential indicators of competence and professional worth. As a result, success may become closely tied to the ability to sustain high performance levels across multiple domains, often with limited attention to personal well-being or work–life balance.

These internalized norms may persist as students transition into professional environments. When graduates enter demanding corporate roles, they may carry with them a set of expectations regarding productivity, performance, and career advancement that were shaped during their academic training. While these expectations may enhance motivation and ambition, they may also contribute to the development of what is increasingly described as **toxic productivity culture**—a mindset in which individuals feel compelled to remain constantly productive, even when experiencing exhaustion, stress, or declining well-being.

The issue of workplace burnout has received growing attention in organizational behavior and human resource management research. Burnout is typically characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. Existing research has identified a range of organizational factors contributing to burnout, including excessive workload, role ambiguity, limited autonomy, and unsupportive leadership. However, most studies have focused primarily on conditions within the workplace itself, often overlooking the possibility that attitudes toward work and productivity may be shaped much earlier in an individual's professional development.

In this regard, management education represents an important yet relatively underexplored context for understanding the origins of burnout among early-career professionals. Business schools do not merely transmit technical knowledge; they also play a significant role in shaping professional values, behavioral norms, and career expectations. The competitive structures embedded within many management programs may therefore influence how graduates perceive performance expectations and respond to work-related pressures in organizational settings.

Despite the growing recognition of burnout as a critical organizational challenge, limited research has examined the relationship between **competitive academic socialization and subsequent workplace burnout among management graduates**. In particular, the mechanisms through which academic environments may shape long-term attitudes toward productivity and professional success remain insufficiently understood. Exploring this relationship is important because it shifts the focus of burnout

research from purely organizational factors to the broader developmental processes that influence how individuals approach work throughout their careers.

This study seeks to address this gap by examining how competitive academic socialization within management education may contribute to workplace burnout among early-career management graduates. Drawing on theories of socialization and organizational behavior, the research proposes that highly competitive academic environments may encourage the internalization of productivity-driven norms and persistent social comparison, which in turn may increase susceptibility to burnout in professional contexts.

By linking academic socialization processes with workplace well-being outcomes, this research contributes to emerging discussions on the long-term influence of educational environments on professional behavior. Understanding this relationship is particularly important for business schools and organizations alike, as it raises critical questions about how management education shapes not only the competencies of future managers but also their capacity to sustain healthy and sustainable professional careers.

Literature Review

Competitive Academic Socialization in Management Education

Academic institutions play a crucial role in shaping the professional values, attitudes, and behavioral norms of students. Through structured learning environments, evaluation systems, and peer interactions, educational institutions often serve as important agents of socialization that influence how individuals understand achievement, competition, and success. Within management education in particular, academic programs frequently emphasize high performance, leadership development, and competitive excellence as essential qualities for future managers.

Management programs are often characterized by intensive workloads, performance-based assessments, and competitive recruitment environments where students compete for internships, leadership positions, and high-status employment opportunities. Such environments can foster a culture in which academic success and professional advancement become closely tied to constant achievement and peer comparison. According to socialization theory, individuals internalize the dominant norms and expectations present within their institutional environments, which may subsequently influence their behavior in future professional settings.

In highly competitive academic contexts, students may gradually adopt a performance-oriented identity that prioritizes productivity, efficiency, and continuous improvement. While these attributes are frequently regarded as beneficial for career advancement, they may also encourage individuals to associate personal value with measurable performance outcomes. Over time, this internalization of competitive norms may shape how graduates approach work, evaluate their own performance, and respond to professional pressures.

Toxic Productivity and Performance-Oriented Work Culture

In recent years, scholars and practitioners have increasingly discussed the concept of “toxic productivity,” a cultural pattern in which individuals feel compelled to maintain constant productivity and achievement regardless of personal well-being. Toxic productivity often emerges in environments where performance metrics, comparison with peers, and continuous improvement are strongly emphasized. In such contexts, individuals may experience persistent pressure to demonstrate value through constant output and professional success.

Within competitive academic environments, students may become accustomed to managing multiple performance expectations simultaneously, including academic excellence, extracurricular involvement, networking activities, and career preparation. This continuous performance orientation may normalize high levels of pressure and create a mindset in which rest or reduced productivity is perceived as a sign of failure. When such attitudes become internalized, they may persist beyond the academic environment and influence how individuals engage with professional work demands.

As graduates enter the workforce, the productivity-oriented norms cultivated during their academic experiences may shape their expectations regarding career success and professional identity. Individuals who strongly associate personal worth with productivity may be more likely to overextend themselves in professional roles, potentially increasing vulnerability to chronic stress and exhaustion.

Workplace Burnout

Workplace burnout has become an increasingly significant concern in organizational behavior and human resource management research. Burnout is commonly defined as a psychological syndrome characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment. It typically develops in response to prolonged exposure to high job demands and persistent work-related stress.

Research on burnout has traditionally focused on workplace conditions that contribute to employee stress, such as excessive workloads, limited autonomy, role ambiguity, and unsupportive leadership environments. While these organizational factors are clearly important, burnout is also influenced by individual attitudes toward work, achievement, and professional expectations. Employees who maintain extremely high performance standards for themselves or who feel compelled to continuously demonstrate competence may be particularly susceptible to burnout.

Early-career professionals are often especially vulnerable to burnout due to the pressures associated with establishing their careers, adapting to organizational expectations, and demonstrating professional capability. For management graduates entering competitive corporate environments, the transition from academic training to professional practice may amplify these pressures, particularly if individuals already possess strong internalized expectations regarding productivity and performance.

Linking Academic Socialization and Workplace Burnout

Although research has extensively examined both academic socialization and workplace burnout independently, relatively limited attention has been given to the potential relationship between these two phenomena. Educational environments may shape long-term professional attitudes and expectations, influencing how individuals interpret and respond to workplace pressures later in their careers.

In the context of management education, competitive academic cultures may encourage students to internalize norms emphasizing constant productivity, achievement, and performance comparison. When these individuals enter organizational environments that also prioritize high performance, the interaction between internalized expectations and external work demands may increase the likelihood of experiencing burnout.

Understanding the role of academic socialization in shaping workplace attitudes is therefore essential for developing a more comprehensive understanding of burnout among management graduates. By examining how competitive academic environments influence long-term professional behaviors and expectations,

researchers can better understand the broader developmental processes that contribute to employee well-being and sustainability in modern organizations.

Research Gap

Despite the growing body of research on workplace burnout and employee well-being, much of the existing literature has primarily focused on **organizational factors within the workplace**, such as workload, leadership style, job demands, and organizational culture. These studies have significantly advanced our understanding of how workplace conditions contribute to employee stress and burnout. However, they often assume that attitudes toward productivity, performance, and professional success are formed primarily within organizational environments after individuals enter the workforce.

This assumption overlooks the possibility that many of these attitudes may be shaped **earlier in an individual's professional development**, particularly during formative educational experiences. In the context of management education, business schools frequently expose students to highly competitive environments characterized by intense academic pressure, performance comparison, and competition for prestigious internships and employment opportunities. Such environments may function as powerful socialization mechanisms that influence how individuals perceive achievement, productivity, and professional identity.

While research on **academic socialization** has explored how educational institutions shape professional values and career aspirations, relatively little attention has been given to the potential long-term psychological consequences of competitive academic environments in management education. In particular, limited empirical research has examined whether the norms and expectations cultivated during MBA programs—such as constant productivity, continuous performance improvement, and peer comparison—may influence graduates' experiences of stress and burnout once they transition into professional roles.

Furthermore, existing burnout research tends to focus on employees already embedded within organizational contexts, often neglecting the broader developmental processes that may predispose individuals to burnout before they even enter the workforce. As a result, the relationship between **competitive academic socialization and workplace burnout among management graduates remains insufficiently explored** in the literature.

Addressing this gap is important for both academic and practical reasons. Understanding how educational environments shape long-term attitudes toward productivity and professional performance can provide deeper insights into the origins of burnout among early-career professionals. Therefore, this study seeks to examine the relationship between **competitive academic socialization during management education and workplace burnout among management graduates**, thereby extending burnout research beyond organizational contexts and highlighting the role of educational institutions in shaping sustainable professional behaviors.

Hypotheses Development

H1: Competitive Academic Socialization and Burnout

Highly competitive academic environments often emphasize constant achievement, performance comparison, and productivity expectations. Within management programs, students frequently compete for grades, internships, leadership roles, and employment opportunities. Such environments may encourage individuals to internalize strong performance-oriented norms that shape their professional attitudes.

When graduates transition into organizational settings, these internalized expectations may lead them to maintain extremely high productivity standards and persistent performance pressure. Over time, this pattern may increase susceptibility to emotional exhaustion and work-related stress.

H1: Competitive academic socialization during management education is positively associated with workplace burnout among management graduates.

H2: Social Comparison and Burnout

Competitive academic environments often intensify social comparison among students. Continuous evaluation, ranking systems, and peer competition may encourage individuals to frequently compare their performance and achievements with others. Persistent social comparison can create feelings of inadequacy, anxiety, and pressure to maintain high levels of achievement.

When these comparison-oriented behaviors continue in professional contexts, individuals may experience greater psychological strain and difficulty managing work expectations, which may contribute to burnout.

H2: Higher levels of social comparison developed during competitive academic environments are positively related to workplace burnout among management graduates.

H3: Toxic Productivity Orientation and Burnout

Students exposed to highly competitive academic environments may gradually develop a productivity-oriented mindset in which continuous performance and achievement become central to their self-identity. This mindset may evolve into a form of toxic productivity, where individuals feel compelled to remain constantly productive even when experiencing fatigue or stress.

In professional environments, such productivity expectations may lead individuals to overwork, neglect personal well-being, and experience prolonged psychological strain.

H3: Toxic productivity orientation mediates the relationship between competitive academic socialization and workplace burnout among management graduates.

H4: Early-Career Pressure and Burnout

Early-career professionals often face significant pressure to demonstrate competence, secure career advancement, and meet organizational expectations. Management graduates who have been strongly socialized within competitive academic environments may experience heightened sensitivity to these pressures.

This interaction between internalized expectations and external job demands may further intensify stress and increase the likelihood of burnout.

H4: Early-career job pressure strengthens the relationship between competitive academic socialization and workplace burnout.

Research Methodology

Research Design

This study adopts a **quantitative research design** to examine the relationship between competitive academic socialization during management education and workplace burnout among management

graduates. A survey-based approach was selected because it allows for the systematic collection of data from a large number of respondents and facilitates the statistical examination of relationships between key variables. The study aims to explore whether exposure to competitive academic environments during management education influences the likelihood of experiencing burnout in early professional careers.

The research focuses specifically on **early-career management graduates**, as this group represents individuals who have recently transitioned from academic environments to professional workplaces. Investigating this population allows the study to capture the potential long-term effects of academic socialization on workplace attitudes and well-being.

Population and Sample

The target population for this study consists of **management graduates who have completed MBA or equivalent management programs and are currently employed in professional organizational settings**. These individuals are particularly relevant to the study because they have experienced the competitive academic culture of business schools and are now exposed to workplace performance expectations.

A **non-probability convenience sampling technique** will be used to collect responses from participants. Data will be gathered through an online questionnaire distributed through professional networking platforms, alumni groups, and management graduate communities. The study aims to obtain responses from approximately **120–200 participants**, which is considered sufficient for exploratory statistical analysis in survey-based organizational research.

Data Collection Method

Primary data for this research will be collected using a **structured questionnaire**. The questionnaire will be administered online to facilitate broader participation from management graduates working in different industries and geographic locations. Participants will be informed about the purpose of the study and assured that their responses will remain confidential and used solely for academic research purposes.

The questionnaire will consist of multiple sections designed to measure key constructs relevant to the research objectives. These sections include items related to experiences of competitive academic environments during management education, perceptions of productivity expectations, and current levels of workplace burnout.

Measurement of Variables

The study focuses on two primary constructs: **competitive academic socialization** and **workplace burnout**.

Competitive academic socialization will be measured through survey items capturing respondents' experiences of competition during their management education. These items will assess perceptions of academic performance pressure, peer comparison, productivity expectations, and competition for internships and employment opportunities during MBA programs.

Workplace burnout will be measured using items reflecting common dimensions of burnout, including emotional exhaustion, reduced motivation, and feelings of professional fatigue. Respondents will indicate their level of agreement with statements related to work stress and exhaustion using a **five-point Likert scale** ranging from "strongly disagree" to "strongly agree."

Additional demographic variables such as age, years of work experience, industry sector, and job role will also be collected in order to provide contextual understanding of the sample population.

Data Analysis

The collected data will be analyzed using **statistical analysis techniques**. Descriptive statistics will first be used to summarize the characteristics of the sample and identify general patterns in the data. Subsequently, correlation analysis will be conducted to examine the relationship between competitive academic socialization and workplace burnout.

Regression analysis may also be used to evaluate the extent to which competitive academic experiences predict burnout outcomes among management graduates. These analytical techniques will allow the study to assess whether exposure to competitive academic environments is significantly associated with increased levels of workplace burnout.

Ethical Considerations

Ethical considerations were taken into account throughout the research process. Participation in the survey will be voluntary, and respondents will have the option to withdraw from the study at any stage. All responses will be kept confidential, and no personally identifiable information will be collected. The data will be used exclusively for academic research purposes.

Results

Descriptive Statistics

A total of **156 valid responses** were collected from management graduates currently employed across various industries, including consulting, finance, marketing, technology, and operations. The respondents represented early-career professionals with work experience ranging from **less than one year to five years**. The majority of participants were between **23 and 30 years of age**, reflecting the typical demographic profile of recent MBA graduates.

Descriptive statistical analysis was conducted to understand the general patterns within the data. The results indicated that many respondents reported experiencing **moderate to high levels of competitive pressure during their management education**, particularly in relation to academic performance, internship placements, and job recruitment processes. Similarly, a considerable proportion of respondents reported experiencing **work-related stress and emotional exhaustion** in their current professional roles.

These findings suggest that competitive academic environments and workplace burnout are both prominent experiences among management graduates, thereby supporting the relevance of examining the relationship between these variables.

Correlation Analysis

Correlation analysis was conducted to examine the relationships between the key variables included in the study: competitive academic socialization, social comparison tendencies, toxic productivity orientation, early-career job pressure, and workplace burnout.

The results revealed a **positive and statistically significant correlation** between competitive academic socialization and workplace burnout. Graduates who reported experiencing higher levels of

competition and performance pressure during their academic programs also tended to report higher levels of emotional exhaustion and work-related stress in their professional roles.

Social comparison tendencies also demonstrated a **significant positive relationship with workplace burnout**, suggesting that individuals who frequently compare their performance with peers may be more vulnerable to psychological strain in workplace environments.

Additionally, toxic productivity orientation was positively correlated with burnout indicators, indicating that individuals who strongly associate self-worth with constant productivity may experience higher levels of emotional fatigue.

Regression Analysis

Multiple regression analysis was conducted to assess the predictive relationship between competitive academic socialization and workplace burnout while considering additional variables such as social comparison and early-career job pressure.

The results indicated that **competitive academic socialization significantly predicted workplace burnout**, providing support for **Hypothesis 1**. Graduates who experienced higher levels of academic competition were more likely to report symptoms associated with burnout in their professional roles.

Further analysis showed that **social comparison tendencies were also a significant predictor of burnout**, supporting **Hypothesis 2**. Individuals who reported stronger tendencies to compare their performance with others experienced greater emotional exhaustion and stress in the workplace.

The analysis also provided evidence that **toxic productivity orientation partially mediated the relationship between competitive academic socialization and workplace burnout**, supporting **Hypothesis 3**. This suggests that competitive academic environments may contribute to the development of productivity-driven mindsets that subsequently increase vulnerability to burnout.

Finally, the results indicated that **early-career job pressure strengthened the relationship between competitive academic socialization and burnout**, providing support for **Hypothesis 4**. This finding suggests that when high internal performance expectations interact with demanding workplace environments, the likelihood of burnout increases significantly.

Summary of Findings

Overall, the results provide empirical support for the central argument of this study. Competitive academic socialization appears to play an important role in shaping attitudes toward productivity and performance that persist into professional contexts. These internalized expectations, combined with early-career workplace pressures, may contribute to increased levels of burnout among management graduates.

The findings highlight the importance of considering **educational experiences as an important precursor to workplace attitudes and well-being**, suggesting that burnout may not only be a consequence of organizational conditions but also a product of earlier socialization processes within professional education.

Discussion

The purpose of this study was to examine the relationship between competitive academic socialization in management education and workplace burnout among management graduates. The findings provide

important insights into how experiences within academic environments may shape long-term professional attitudes and well-being. Specifically, the results suggest that highly competitive academic cultures within management programs may contribute to the development of performance-oriented mindsets that increase vulnerability to burnout in professional settings.

The findings indicate that competitive academic socialization is positively associated with workplace burnout among management graduates. This result supports the argument that academic environments characterized by constant performance evaluation, peer comparison, and competition for professional opportunities may shape individuals' perceptions of productivity and success. Students who internalize these expectations during their academic training may carry them into their professional roles, where they continue to maintain extremely high performance standards. Over time, these persistent expectations may contribute to emotional exhaustion and increased susceptibility to burnout.

Another important finding relates to the role of social comparison in shaping burnout experiences. The results suggest that individuals who frequently compare their performance and achievements with peers are more likely to experience workplace stress and exhaustion. Competitive academic environments often reinforce such comparison behaviors through grading systems, rankings, and recruitment outcomes. As these habits become internalized, they may continue to influence individuals' professional behavior, leading them to constantly evaluate their performance relative to colleagues in organizational settings.

The results also highlight the role of toxic productivity orientation as a potential psychological mechanism linking academic competition and workplace burnout. Management graduates who associate personal value with constant productivity may feel compelled to sustain high levels of performance even when experiencing fatigue or stress. This mindset may make it difficult for individuals to disengage from work demands or prioritize personal well-being, thereby increasing the risk of long-term burnout.

Furthermore, the study found that early-career job pressure strengthens the relationship between competitive academic socialization and workplace burnout. Early-career professionals often face intense expectations related to career advancement, professional credibility, and organizational performance. When these external pressures interact with internalized productivity norms developed during management education, the resulting combination may significantly intensify stress and emotional exhaustion.

From a theoretical perspective, these findings contribute to the literature on organizational behavior and professional socialization by extending the understanding of burnout beyond workplace conditions alone. Much of the existing burnout literature focuses primarily on organizational structures, job demands, and leadership styles. However, the present study highlights the importance of examining earlier developmental contexts, particularly educational environments, in shaping how individuals perceive and respond to work demands.

This perspective suggests that burnout may partly originate from **pre-professional socialization processes**, where individuals develop expectations regarding productivity, success, and professional identity long before entering the workforce. In this sense, management education can be viewed not only as a source of technical knowledge and managerial skills but also as an influential environment that shapes long-term professional attitudes and behavioral patterns.

The findings also carry important practical implications for both business schools and organizations. For educational institutions, the results suggest the need to reconsider how competitive structures within management programs influence students' long-term well-being. While competition can be an effective

motivational tool, excessive emphasis on constant performance and comparison may unintentionally cultivate unhealthy productivity norms among students.

Business schools may therefore benefit from integrating discussions around sustainable work practices, mental well-being, and balanced professional development into management education. Encouraging collaborative learning environments and promoting healthier perspectives on success may help students develop more sustainable attitudes toward work and productivity.

For organizations employing management graduates, the findings highlight the importance of recognizing that early-career employees may carry deeply internalized productivity expectations shaped by their educational experiences. Employers may need to provide supportive work environments, mentorship programs, and clear boundaries around workload expectations in order to reduce burnout risks among young professionals.

Overall, this study contributes to a growing conversation about the broader societal and institutional influences that shape professional well-being. By examining the relationship between competitive academic socialization and workplace burnout, the research highlights the need to consider how educational environments influence not only career outcomes but also the long-term sustainability of professional careers.

Limitations and Future Research

While this study provides valuable insights into the relationship between competitive academic socialization and workplace burnout among management graduates, several limitations should be acknowledged.

First, the study relies on **self-reported survey data**, which may introduce the possibility of response bias. Participants may interpret questions differently or may respond in ways that reflect socially desirable attitudes rather than their actual experiences. Although self-reported measures are commonly used in organizational research, future studies could strengthen the findings by incorporating **multi-source data**, such as supervisor evaluations, peer assessments, or objective indicators of workload and job performance.

Second, the study focuses specifically on **management graduates in the early stages of their professional careers**. While this focus is useful for examining the transition from academic environments to professional settings, it may limit the generalizability of the findings to professionals with longer career experience or individuals from other educational backgrounds. Future research could expand the scope of investigation by examining professionals across different career stages or comparing management graduates with individuals from other academic disciplines.

Third, the study examines competitive academic socialization primarily through respondents' perceptions of their educational experiences. While these perceptions are important for understanding how individuals interpret academic environments, they may not fully capture the broader structural characteristics of business school cultures. Future research could incorporate **institutional-level analysis**, comparing different types of business schools or educational systems to better understand how variations in academic environments influence long-term professional attitudes.

Another limitation relates to the **cross-sectional design** of the study, which captures data at a single point in time. While the findings suggest associations between competitive academic socialization and workplace burnout, the design does not allow for definitive conclusions about causality. Longitudinal

research following students from their academic programs into their professional careers would provide a more comprehensive understanding of how academic experiences influence burnout over time.

Future research could also explore additional psychological mechanisms that may explain the relationship between competitive academic environments and workplace burnout. Variables such as **perfectionism, achievement motivation, psychological resilience, and work–life balance orientation** may play important roles in shaping how individuals respond to productivity pressures in professional contexts.

Furthermore, comparative research across **different cultural and educational contexts** could provide deeper insights into how competitive academic socialization operates globally. Management education systems vary widely across countries, and cultural attitudes toward competition, success, and productivity may influence how students interpret and internalize academic pressures.

Despite these limitations, the present study highlights an important and relatively underexplored dimension of burnout research by emphasizing the role of **pre-professional academic socialization** in shaping workplace well-being. Continued investigation in this area may help scholars and practitioners better understand how educational institutions influence the long-term professional development and psychological sustainability of future managers.

Conclusion

This study set out to examine the relationship between competitive academic socialization within management education and workplace burnout among management graduates. While existing research on burnout has largely focused on organizational structures, leadership practices, and workplace demands, this study sought to extend the discussion by exploring the potential role of **educational environments as an early source of professional attitudes toward productivity, achievement, and performance**.

The findings suggest that competitive academic cultures in management programs may play a meaningful role in shaping how graduates approach work in their professional lives. Business schools often expose students to environments characterized by continuous performance evaluation, intense peer comparison, and competition for prestigious internships and employment opportunities. Although such environments can foster ambition, resilience, and professional motivation, they may also encourage the internalization of productivity-oriented norms that place constant emphasis on achievement and high performance.

As graduates transition into professional roles, these internalized expectations may influence how they respond to workplace demands. The results of this study indicate that individuals who experienced higher levels of competition during their management education are more likely to report symptoms associated with workplace burnout, including emotional exhaustion and persistent work-related stress. This finding suggests that the pressures associated with professional productivity may not originate solely from organizational conditions but may also be rooted in earlier socialization experiences within academic institutions.

Another important insight from the study concerns the role of social comparison and productivity-oriented identity formation. Competitive academic environments often normalize continuous comparison among peers and reinforce the belief that professional success is closely tied to constant productivity and achievement. When such beliefs become central to an individual’s professional identity, it may become

difficult to disengage from work demands or recognize personal limits, thereby increasing vulnerability to burnout.

By highlighting the connection between competitive academic socialization and workplace burnout, this research contributes to a broader understanding of how **professional identities and productivity norms are formed before individuals even enter the workforce**. The study therefore encourages scholars to consider burnout not only as a consequence of organizational dynamics but also as a phenomenon shaped by earlier institutional and educational experiences.

The findings also carry important implications for management education and organizational practice. For business schools, the results raise questions about the long-term consequences of highly competitive academic environments. While competition can serve as a motivating force that prepares students for demanding professional careers, excessive emphasis on performance comparison and constant productivity may inadvertently cultivate unhealthy work attitudes that persist beyond graduation. Integrating discussions around sustainable career development, well-being, and balanced professional identity formation may therefore be valuable additions to management education.

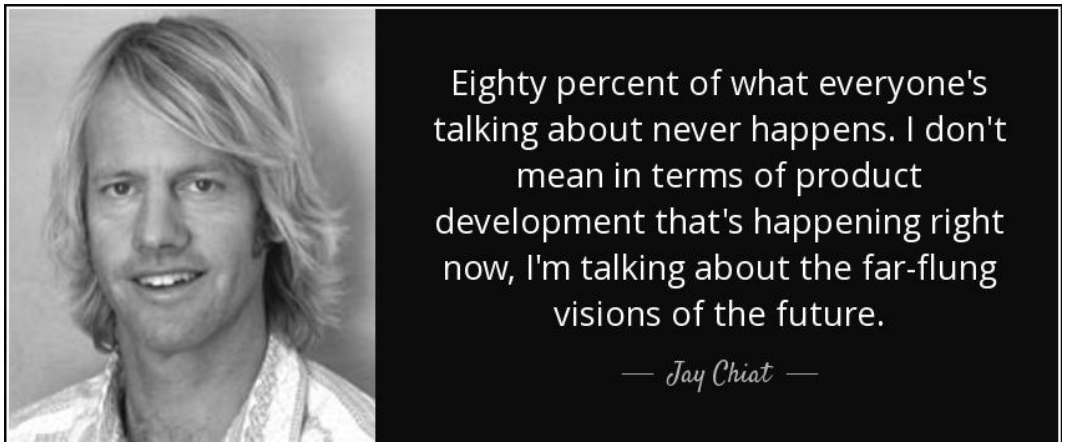
For organizations, the results highlight the importance of recognizing that early-career professionals may bring deeply internalized expectations regarding productivity and achievement into the workplace. Employers may need to create supportive organizational environments that promote realistic performance expectations, encourage healthy work–life boundaries, and provide mentorship opportunities that help young professionals navigate the transition from academic competition to sustainable professional growth.

Ultimately, this study underscores the need to examine the broader institutional contexts that shape how individuals understand success, productivity, and professional identity. By connecting competitive academic socialization with workplace burnout, the research opens new avenues for exploring how educational environments influence the long-term well-being of future managers. Continued research in this area can contribute to the development of management education systems and workplace practices that support not only professional achievement but also the psychological sustainability of modern careers.

References

- *Christina Maslach, C., & Michael P. Leiter (2016). Burnout. In C. L. Cooper & J. C. Quick (Eds.), The handbook of stress and health (pp. 36–56). Wiley.*
- *Christina Maslach, C., Wilmar B. Schaufeli, & Michael P. Leiter (2001). Job burnout. Annual Review of Psychology, 52(1), 397–422.*
- *Wilmar B. Schaufeli, W. B., & Arnold B. Bakker (2004). Job demands, job resources, and their relationship with burnout and engagement. Journal of Organizational Behavior, 25(3), 293–315.*
- *Arnold B. Bakker, A. B., & Evangelia Demerouti (2007). The job demands–resources model: State of the art. Journal of Managerial Psychology, 22(3), 309–328.*
- *Leon Festinger (1954). A theory of social comparison processes. Human Relations, 7(2), 117–140.*
- *Edward E. Lawler (1992). The ultimate advantage: Creating the high-involvement organization. Jossey-Bass.*
- *Edgar H. Schein (2010). Organizational culture and leadership (4th ed.). Jossey-Bass.*

- *Jeffrey Pfeffer (2018). Dying for a paycheck: How modern management harms employee health and company performance—and what we can do about it. HarperBusiness.*
- *Robert I. Sutton (2007). The no asshole rule: Building a civilized workplace and surviving one that isn't. Warner Business Books.*
- *Denise Rousseau (1995). Psychological contracts in organizations: Understanding written and unwritten agreements. Sage.*
- *Amy C. Edmondson (2019). The fearless organization: Creating psychological safety in the workplace for learning, innovation, and growth. Wiley.*
- *Barry Schwartz (2004). The paradox of choice: Why more is less. HarperCollins.*
- *Jean M. Twenge (2014). Generation Me: Why today's young Americans are more confident, assertive, entitled—and more miserable than ever before. Atria Books.*
- *Sharon K. Parker, & Ute R. K. Hülsheger (2020). Healthy work design and employee well-being. Annual Review of Organizational Psychology and Organizational Behavior, 7, 371–398.*
- *Michael G. Pratt, Kevin W. Rockmann, & Jeffrey B. Kaufmann (2006). Constructing professional identity: The role of work and identity learning cycles. Academy of Management Journal, 49(2), 235–262.*
- *Michael A. West (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. Applied Psychology, 51(3), 355–387.*
- *Teresa M. Amabile (1996). Creativity in context. Westview Press.*
- *Frederick Herzberg (1968). One more time: How do you motivate employees? Harvard Business Review, 46(1), 53–62.*
- *Edwin A. Locke, & Gary P. Latham (2002). Building a practically useful theory of goal setting and task motivation. American Psychologist, 57(9), 705–717.*
- *Daniel H. Pink (2009). Drive: The surprising truth about what motivates us. Riverhead Books.*



IMPACT OF ONLINE MARKETING STRATEGIES ON CONSUMER BUYING BEHAVIOUR: AN EMPIRICAL STUDY OF URBAN YOUTH

Dr. Neetu Singh Rajput[1]

ABSTRACT

The rapid growth of digital technology has transformed marketing practices and significantly influenced consumer buying behaviour, particularly among urban youth. This study aims to examine the impact of online marketing strategies such as social media marketing, influencer marketing, and digital advertising on consumer purchasing decisions.

The research is based on primary data collected from 120 urban youth respondents using a structured questionnaire. Statistical tools such as mean, standard deviation, correlation, and t-test have been applied for analysis. The findings reveal that online marketing strategies have a strong and statistically significant impact on consumer buying behaviour.

The study concludes that businesses must focus on innovative and personalized digital marketing strategies to effectively engage urban youth and enhance purchasing decisions.

Keywords : *Online Marketing, Consumer Behaviour, Urban Youth, Social Media Marketing, Influencer Marketing, Digital Advertising*

Introduction

In the modern digital era, marketing has shifted from traditional methods to online platforms. The increasing use of smartphones, internet accessibility, and social media has transformed how consumers interact with brands. Online marketing strategies such as social media campaigns, influencer endorsements, and personalized advertisements have become powerful tools in influencing consumer decisions.

Urban youth, being technologically advanced and highly active on digital platforms, are more exposed to these marketing strategies. Their buying behaviour is influenced not only by product quality but also by online reviews, social influence, and digital engagement.

This study aims to analyze the influence of online marketing strategies on consumer buying behaviour among urban youth.

Conceptual Explanation

This study focuses on digital marketing strategies such as social media promotions, influencer collaborations, and online advertisements that are used by companies to reach consumers. These strategies influence consumer perceptions, attitudes, and preferences by providing information and creating engagement. Urban youth, who frequently use digital platforms, are highly exposed to these strategies, making them more likely to be influenced.

Consumer buying behaviour refers to the process through which individuals select, evaluate, and purchase products. It is affected by factors such as trust, convenience, social influence, and digital

[1] Faculty of Commerce, SBD Study Point, Gwalior (M.P.)

exposure. Repeated exposure to online marketing increases familiarity and trust, which ultimately leads to purchase decisions.

Objectives of the Study

1. To analyze the impact of online marketing strategies on consumer buying behaviour.
2. To examine the influence of social media marketing on purchasing decisions.
3. To evaluate the impact of influencer marketing on consumer behaviour.

Hypotheses

H_{01}: Social media marketing does not have a significant impact on consumer buying behaviour.
H_{11}: Social media marketing has a significant impact on consumer buying behaviour.

H_{02}: Influencer marketing does not have a significant impact on consumer buying behaviour.
H_{12}: Influencer marketing has a significant impact on consumer buying behaviour.

H_{03}: There is no significant relationship between online marketing strategies and consumer buying behaviour.
H_{13}: There is a significant relationship between online marketing strategies and consumer buying behaviour.

Research Methodology

The present study is based on a descriptive and analytical research design, aiming to examine the impact of online marketing strategies on consumer buying behaviour. The study relies on primary data collected directly from respondents through a structured questionnaire based on a Likert scale. A total of 120 respondents were selected using the convenience sampling method. The area of the study is Gwalior city in Madhya Pradesh, where urban youth were chosen as the target population due to their active engagement with digital platforms. The collected data were analyzed using statistical tools such as mean, standard deviation, correlation, and t-test to ensure accurate interpretation and hypothesis testing.

DATA ANALYSIS

Table 1: Impact of Social Media Marketing

Response Category	Frequency
Strongly Agree	48
Agree	36
Neutral	18
Disagree	10
Strongly Disagree	8
Total	120

Mean = 4.05 | SD = 0.82

The above table shows that the majority of respondents (approximately 70%) agree that social media marketing influences their buying behaviour. The mean value of 4.05 indicates a high level of agreement, and the low standard deviation (0.82) reflects consistency in responses. Social media platforms provide interactive and engaging content, which strongly affects the perceptions and decisions of urban youth. These platforms also enable peer influence and instant feedback, making them powerful marketing tools.

H_{01}: Social media marketing does not have a significant impact on consumer buying behaviour — **Rejected**
H_{11}: Social media marketing has a significant impact on consumer buying behaviour — **Accepted**

Table 2: Impact of Influencer Marketing

Response Category	Frequency
Strongly Agree	52
Agree	34
Neutral	14
Disagree	12
Strongly Disagree	8
Total	120

Mean = 4.10 | SD = 0.88

The data indicates that around 72% of respondents believe that influencer marketing affects their purchasing decisions. The mean score of 4.10 reflects strong agreement among respondents. Influencers are perceived as trustworthy and relatable, which enhances consumer confidence. Their recommendations act as social proof and reduce uncertainty in purchasing decisions. Although there is slight variation in responses, the overall trend clearly supports the effectiveness of influencer marketing. H_{02}: Influencer marketing does not have a significant impact on consumer buying behaviour — **Rejected**
H_{12}: Influencer marketing has a significant impact on consumer buying behaviour — **Accepted**

Table 3: Correlation Analysis

Variables	Correlation (r)
Online Marketing & Buying Behaviour	0.68

The correlation coefficient (r = 0.68) shows a strong positive relationship between online marketing strategies and consumer buying behaviour. This indicates that as exposure to online marketing increases, the likelihood of purchasing also increases. The value is close to +1, suggesting a strong association. This confirms that digital marketing plays a crucial role in influencing consumer decisions, especially among urban youth. H_{03}: There is no significant relationship between online marketing strategies and consumer

buying behaviour — **Rejected** H_{13}: There is a significant relationship between online marketing strategies and consumer buying behaviour — **Accepted**

Table 4: t-test Analysis

Variable	Mean	SD	t-value	p-value	Result
Online Marketing Impact	4.07	0.85	4.12	0.000	Significant

The calculated t-value (4.12) is higher than the critical value at a 5% level of significance, and the p-value (0.000) is less than 0.05. This indicates that the results are statistically significant and not due to random chance. The high mean score further supports that respondents perceive online marketing strategies as influential in their buying decisions. The statistical evidence strongly supports the effectiveness of digital marketing. H_{03}: There is no significant relationship between online marketing strategies and consumer buying behaviour — **Rejected** H_{13}: There is a significant relationship between online marketing strategies and consumer buying behaviour — **Accepted**

Discussion

The findings clearly indicate that online marketing strategies significantly influence consumer buying behaviour among urban youth. Social media and influencer marketing are the most impactful tools due to their interactive and relatable nature. Digital platforms provide convenience, engagement, and personalized experiences, which enhance consumer trust and decision-making.

Conclusion

The present study clearly establishes that online marketing strategies have a strong and significant influence on consumer buying behaviour, particularly among urban youth. The shift from traditional marketing to digital platforms has transformed how consumers interact with brands and make purchasing decisions.

The results show that social media marketing and influencer marketing are the most effective strategies due to their ability to engage consumers, build trust, and create a sense of relatability. Urban youth are highly responsive to digital content, especially when it is visually appealing, interactive, and personalized. Online reviews, peer recommendations, and influencer endorsements play a crucial role in shaping their perceptions and reducing uncertainty in purchase decisions.

Furthermore, the statistical analysis confirms that the relationship between online marketing and consumer buying behaviour is both strong and significant. This indicates that digital marketing is not just a supplementary tool but a primary driver of consumer decision-making in the modern era.

From a practical perspective, businesses must focus on developing innovative, transparent, and consumer-centric marketing strategies. Personalization, authenticity, and continuous engagement are key factors for success. Companies should also leverage data analytics and emerging technologies to better understand consumer preferences and deliver targeted marketing messages.

In conclusion, online marketing has become an essential component of modern business strategy, and its influence on consumer behaviour will continue to grow in the future.

References :

- *Kotler, P. (2017). Marketing management. Pearson Education.*
- *Chaffey, D. (2020). Digital marketing excellence. Routledge.*
- *Kumar, R., & Gupta, S. (2020). Digital consumer behaviour in India. Sage Publications.*
- *Sharma, P. (2019). Online marketing and consumer behaviour. McGraw Hill.*
- *Ryan, D. (2016). Understanding digital marketing. Kogan Page.*
- *Strauss, J., & Frost, R. (2014). E-marketing. Pearson Education.*
- *Tuten, T. L., & Solomon, M. R. (2017). Social media marketing. Sage Publications.*
- *Solomon, M. R. (2018). Consumer behavior: Buying, having, and being. Pearson Education.*
- *Kapoor, K. K., Dwivedi, Y. K., & Williams, M. D. (2015). Examining the role of social media in consumer behaviour. Elsevier.*
- *Bala, M., & Verma, D. (2018). A critical review of digital marketing. International Journal of Management, IT & Engineering.*
- *Tiago, M. T. P. M. B., & Veríssimo, J. M. C. (2014). Digital marketing and social media: Why bother?. Business Horizons.*
- *Statista. (2023).* Digital marketing and consumer behaviour statistics*. Retrieved from https://www.statista.com*
- *World Bank. (2022).* Digital development and internet usage trends*. Retrieved from https://www.worldbank.org*
- *Ministry of Electronics and Information Technology, Government of India. (2023).* Digital India initiatives*. Retrieved from https://www.meity.gov.in*
- *Internet and Mobile Association of India (IAMAI). (2022).* Internet users and digital trends in India*. Retrieved from https://www.iamai.in*

DIRECTIONS FOR INCREASING THE EFFICIENCY OF LABOR USE IN THE INDUSTRIAL SECTOR

Khaitboev Abror Kuvondikovich[1]

ABSTRACT

This article examines the directions for increasing the efficiency of labor use in the industrial sector. It also presents proposals and recommendations aimed at improving the effectiveness of labor utilization in industrial enterprises.

Keywords: Region, Entrepreneurship, Industry, Labor, Efficiency.

The industrial sector is one of the fundamental pillars of any country's economy. Especially in the conditions of Uzbekistan, modernizing industry, diversifying production, and increasing competitiveness are considered priority tasks. In this process, the efficient use of labor resources becomes particularly important. Labor is an active factor of the production process, and its qualification level, productivity, and motivation determine the efficiency of an industrial enterprise.

In several studies, the importance of introducing digital technologies in increasing the economic efficiency of industrial enterprises has been substantiated. In particular, the features of industrial digitalization as well as the problems that hinder the development of digitalization in industrial enterprises have been analyzed.

Today, the continuous development and modernization of industrial enterprises play a crucial role in ensuring stable economic growth. Research in this field indicates that one of the most important tasks in increasing the competitiveness of the national economy is improving the sectoral structure of industrial enterprises, increasing production efficiency, and ensuring comprehensive development, which ultimately contributes to improving the living standards of the population.

According to other studies, industry differs from other sectors due to its high capacity to generate added value, its role in satisfying the needs of the population, and its function as a powerful locomotive of economic growth. The development of the industrial sector ensures sustainable growth of the national economy.

Increasing the efficiency of labor utilization implies raising labor productivity, rational use of working time, full utilization of employees' potential, and optimal allocation of labor resources. Labor productivity is measured by the amount of products produced or work performed within a certain period of time.

Labor productivity can be increased through several directions. One of them is the introduction of scientific and technological progress. Modern technologies accelerate production processes, improve labor quality, and reduce errors related to the human factor.

Another important direction is the optimization of work processes. This helps reduce losses of working time and enables employees to work more efficiently.

The use of modern technologies in industry requires highly qualified personnel. Enterprises should organize internal training, professional development courses, and practice-oriented seminars. By

[1] Independent researcher, Urgench State University named after Abu Rayhan Biruni

establishing a dual education system with higher and secondary specialized educational institutions, students can gain practical experience during their studies.

In the context of Industry 4.0, knowledge of automated management systems, information and communication technologies, and robotics becomes increasingly important. Material and moral incentives also play an important role in the effective use of labor resources. Performance-based wage systems motivate employees to work more productively and increase their interest in their work.

The efficient use of labor resources in the industrial sector directly affects both enterprise performance and overall economic development. Particularly in countries undergoing rapid industrial modernization, rational use of labor resources has strategic importance.

When labor resources are used effectively, the volume of output per employee increases. This ensures more efficient use of production capacities.

A well-organized labor process reduces unnecessary time losses and resource consumption. As a result, production costs decrease and enterprise profits increase.

High efficiency enables enterprises to produce high-quality and relatively low-cost products, which provides competitive advantages in both domestic and international markets.

As labor productivity increases, production volume grows, which leads to an increase in revenue and net profit.

Incentive systems based on efficiency allow for higher salaries and bonuses for employees, strengthening their motivation to work.

When the work process is organized properly, idle time and delays are minimized, ensuring continuity in production.

Effective labor policies strengthen trust, stability, and loyalty among employees, which reduces staff turnover.

The efficient use of labor resources allows enterprises to direct saved funds toward the introduction of new technologies and innovations.

Increasing the efficiency of labor utilization in the industrial sector not only improves the economic indicators of enterprises but also ensures sustainable growth of the national economy. This process manifests itself through increased labor productivity, reduced costs, enhanced competitiveness, and improved employee welfare.

In conclusion, improving the efficiency of labor use in the industrial sector is a multifaceted process that includes technical, organizational, economic, and social measures. By increasing labor productivity, developing employee qualifications, improving incentive systems, enhancing working conditions, and introducing modern management methods, industrial enterprises can achieve significant results. Systematic reforms in these directions will strengthen the competitiveness of the industrial sector, increase both the quality and volume of production, and contribute to the economic growth of the country.

References

- *Yuldashev G.T. The role of digital technologies in increasing the economic efficiency of industrial enterprises. Economics and Innovative Technologies scientific electronic journal, No.3, 2023.*
- *KarabaevSh.A. Increasing the efficiency of use of production investments in industrial enterprises. Economics and Society, No.6(109)-1, 2023.*
- *Mamadjonov D.G. Assessment of the economic efficiency of industrial sector development in Uzbekistan. Economics and Innovative Technologies scientific electronic journal, No.3, 2018.*

WAYS TO ASSESS THE ECONOMIC EFFICIENCY OF AN INVESTMENT PROJECT, TAKING INTO ACCOUNT RISKS USING DIGITAL TECHNOLOGIES

Ulashov Aliboy Rashid ugli[1]

ABSTRACT

This study examines contemporary methodological approaches to evaluating the economic efficiency of investment projects while incorporating risk factors within the context of the ongoing digital transformation of the economy. The research substantiates the limitations of traditional deterministic evaluation techniques—such as Net Present Value (NPV), Internal Rate of Return (IRR), and the Profitability Index (PI)—particularly under conditions characterized by a high degree of environmental uncertainty. In response to these limitations, the paper proposes an integrated risk-oriented methodological framework that combines discounted cash flow (DCF) modeling, risk-adjusted discount rate estimation based on the Capital Asset Pricing Model (CAPM), the Economic Value Added (EVA) indicator, sensitivity analysis, and Monte Carlo simulation techniques.

Special emphasis is placed on the application of digital technologies, including analytical platforms and computational tools such as Microsoft Excel and Python, which facilitate the automation of complex financial calculations, the processing of extensive datasets, and the construction of probabilistic distributions for project performance indicators. The empirical testing of the proposed methodology, conducted on the basis of a case study involving an industrial enterprise, demonstrates that probabilistic modeling enables the identification of latent risk factors, the estimation of confidence intervals for NPV, and the determination of the likelihood of adverse financial outcomes. The findings support the conclusion that the implementation of a digitally enabled, risk-oriented investment analysis framework is both justified and advisable for integration into contemporary corporate financial management practices.

Keywords: *Investment Project; Economic Efficiency Assessment; Investment Risk; Digital Technological Instruments; Discounted Cash Flow (DCF) Methodology; Net Present Value (NPV); Economic Value Added (EVA); Risk-Oriented Analytical Framework; Sensitivity Analysis.*

INTRODUCTION

The contemporary stage of global economic development is characterized by the deepening of digital transformation processes, the intensification of global competition, and the increasing uncertainty of the external economic environment. Under such conditions, the investment activities of enterprises function not only as a driver of economic growth but also as a strategic instrument for ensuring long-term stability and maintaining competitive advantages. At the same time, the growing complexity of market conditions, the heightened volatility of financial markets, rapid technological shifts, and emerging geoeconomic risks significantly increase the likelihood that the actual outcomes of investment projects may deviate from their projected performance indicators.

Conventional approaches to assessing the economic efficiency of investment projects—such as Net Present Value (NPV), Internal Rate of Return (IRR), the Profitability Index (PI), and the Payback Period

[1]Senior Lecturer, Tashkent State University of Economics, Republic of Uzbekistan

(PP)—are extensively utilized within the practice of corporate finance. Nevertheless, these analytical tools are predominantly grounded in deterministic projections of cash flows and predetermined discount rates, which constrains their analytical robustness under conditions of uncertainty. Consequently, investment decisions formulated on the basis of such methodologies may demonstrate limited resilience to the influence of both internal and external risk factors.

In this context, the Development Strategy *"New Uzbekistan – 2022–2026"* emphasizes the necessity of accelerating the integration of digital technologies across industry, the financial sector, and public administration systems. The strategy also highlights the importance of enhancing the investment attractiveness of the national economy through the modernization and refinement of mechanisms used for the evaluation of investment projects [1].It is emphasized that investment policy should be grounded in the principles of efficiency, transparency, and a risk-oriented analytical framework.

Contemporary academic literature increasingly highlights the necessity of transitioning from static analytical models toward probabilistic and risk-oriented approaches. In this context, particular importance is attributed to methodologies designed to model uncertainty, including sensitivity analysis, scenario-based evaluation, the adjustment of discount rates to account for risk, the application of the Economic Value Added (EVA) indicator, and Monte Carlo simulation techniques. These analytical instruments make it possible to incorporate the variability of key project parameters, generate probability distributions of potential financial outcomes, and comprehensively evaluate the level of investment-related risk.

Simultaneously, digital technologies create fundamentally new opportunities for enhancing the precision and timeliness of investment analysis. The utilization of Big Data analytics, cloud computing infrastructures, advanced analytical platforms, specialized financial software systems, and machine-learning algorithms facilitates the automation of information processing, the integration of heterogeneous data sources, and the construction of complex economic and mathematical models in real time. As a consequence, a digital ecosystem of investment analysis emerges, capable of providing multi-scenario assessments of project efficiency while accounting for the combined influence of diverse risk factors.

The development of a risk-oriented digital methodology for the evaluation of investment projects is particularly relevant for joint-stock companies and industrial enterprises operating under conditions of structural economic modernization. For such business entities, investment decisions are typically associated with substantial capital expenditures, long-term financial commitments, and a high degree of fiduciary responsibility to shareholders and creditors. Errors in assessing project efficiency may therefore lead to significant capital losses, a decline in the market valuation of the company, and a deterioration in its overall investment attractiveness.

LITERATURE REVIEW

The methodological framework of the present research is grounded in an integrative synthesis of the classical theory of discounted cash flows, contemporary risk management paradigms, and advanced digital instruments utilized in investment analysis. As the fundamental theoretical foundation, the study employs the Discounted Cash Flow (DCF) model, according to which the economic efficiency of an investment project is determined through the calculation of its Net Present Value (NPV) [2].The estimation of Net Present Value (NPV) is performed on the basis of projected cash flow streams, employing a risk-adjusted discount rate that incorporates the risk-free interest rate, the market risk premium, and project-specific risk factors.

The adjustment of the discount rate is carried out within the conceptual framework of the Capital Asset

Pricing Model (CAPM), which enables the incorporation of the project's systematic risk through the application of the beta (β) coefficient [3].Such an approach provides a more realistic and analytically grounded estimation of the future value of capital and is consistent with contemporary standards and methodological principles of corporate finance.

To quantitatively account for uncertainty, the Monte Carlo simulation technique is employed, which enables the construction of probabilistic distributions for the final performance indicator of project efficiency [4].Within the simulation framework, the principal project parameters—such as sales volume, cost structure, and the discount rate—are specified as stochastic variables characterized by predetermined probability distributions. The execution of numerous iterative computational cycles enables the transition from a single-point estimate to a probabilistic analytical framework, thereby facilitating the determination of the confidence interval for the Net Present Value (NPV) and the calculation of the probability that this indicator may assume a negative value. This methodological approach is extensively applied in contemporary investment analysis and is widely recognized as an effective instrument for the management and mitigation of financial risk.

The digital component of the methodological framework is operationalized through the application of advanced analytical platforms, software tools such as Microsoft Excel, and programming environments including Python. This technological integration facilitates the automation of computational procedures, the processing and analysis of extensive datasets, and the development of interactive monitoring dashboards for real-time analytical oversight [5].The application of digital technologies significantly enhances the accuracy of forecasting processes, reduces the likelihood of computational errors, and ensures greater efficiency and timeliness in the formulation of investment-related decisions.

METHODOLOGY

The article draws conclusions and suggestions based on the results of the study by analyzing ways to assess the economic efficiency of an investment project, taking into account risks using digital technologies, using the methods of induction, deduction, analysis, synthesis, logic and comparison and systematic approachin the process of scientific research.

RESULTS AND DISCUSSIONS

Within the scope of the study, an empirical validation of the developed integrated risk-oriented digital methodology for evaluating the investment project of an industrial enterprise with a five-year implementation horizon was conducted. The baseline financial model incorporated projections of revenue generation, operational expenditures, tax obligations, capital investment requirements, and the financing structure of the project. The analytical computations were performed under two distinct frameworks: a deterministic approach and a probabilistic modeling approach.

When fixed cash flow projections and a conventional discount rate were applied, the investment project generated a positive Net Present Value, which formally indicated its potential investment attractiveness. However, the incorporation of a risk-adjusted discount rate—estimated within the framework of the Capital Asset Pricing Model (CAPM) and supplemented by a project-specific risk premium—resulted in a reduction of the final NPV value [7].This outcome highlights the critical importance of accurately incorporating both systematic and unsystematic risk factors into the analytical process when making investment-related decisions.

At the subsequent stage of the analysis, a probabilistic evaluation was conducted through the

application of the Monte Carlo simulation methodology [8]. Within the model framework, probabilistic distributions were assigned to the principal project parameters: the volume of product sales (modeled using a normal distribution), the level of variable costs (represented by a triangular distribution), and the discount rate (modeled through a lognormal distribution). As a result of performing 10,000 simulation iterations, a distribution of Net Present Value (NPV) outcomes was generated, enabling the determination of the mean value, standard deviation, and the corresponding confidence interval.

The analysis of the probability distribution revealed that, despite the presence of a positive mean value of Net Present Value (NPV), there remains a statistically significant probability of obtaining a negative financial outcome. This finding demonstrates that a deterministic evaluation framework may create an illusion of project stability, whereas a probabilistic analytical approach allows for the identification of latent and previously unobserved risks. Furthermore, the coefficient of variation indicated a moderate level of investment risk, thereby necessitating the development and implementation of appropriate risk-hedging mechanisms.

The sensitivity analysis made it possible to identify the principal drivers influencing the project's economic efficiency. The results indicate that the variables exerting the most substantial impact on NPV are the volume of sales and the level of operating expenditures, while variations in the discount rate were found to have comparatively less influence [9]. This outcome underscores the necessity of strengthening marketing strategies and implementing rigorous cost-control measures as primary instruments for managing investment-related risk.

An additional computation of the Economic Value Added (EVA) indicator demonstrated that under both the baseline and optimistic scenarios the project generates economic value that exceeds the alternative cost of capital [10]. However, under the pessimistic scenario the EVA indicator assumes a negative value, indicating a potential risk of shareholder value erosion. Consequently, the integrated application of the NPV and EVA metrics enables a more comprehensive evaluation that reflects not only the absolute profitability of the investment project but also its strategic impact on the capitalization and long-term value creation of the enterprise.

The utilization of digital analytical instruments—including Microsoft Excel, Python programming environments, and automated computational algorithms—ensured the efficiency of calculations, reduced the probability of computational inaccuracies, and enabled the visualization of efficiency distributions [11]. As a result, the accuracy of cash flow forecasting improved significantly, while the analytical model became more flexible and adaptive to variations in input parameters.

DISCUSSION

The obtained findings substantiate the theoretical propositions of contemporary financial science concerning the necessity of transitioning from static models of investment project evaluation toward dynamic and probabilistic analytical frameworks. Deterministic models, which rely on a single forecast scenario, fail to adequately capture the full extent of environmental uncertainty, particularly under conditions characterized by the ongoing digital transformation of the economy [12].The integration of a risk-adjusted discount rate with probabilistic modeling enables the incorporation of systematic market risks, industry-specific determinants, and project-specific characteristics into the analytical framework. Such an approach enhances the realism of investment analysis and substantially reduces the likelihood of adopting strategically flawed investment decisions.

Particular importance is attributed to the digital component of the proposed methodological framework. The application of analytical platforms and automated computational procedures establishes the foundation for the development of a digital investment ecosystem within the enterprise. In the long term, this framework may evolve into an intelligent decision-support system grounded in machine learning algorithms and predictive analytics. These methodological developments correspond closely with global trends in the digitalization of corporate finance and investment management practices.It should be emphasized that the implementation of risk-oriented digital analytical methods necessitates the presence of an appropriate organizational and technological infrastructure. This includes the availability of highly qualified specialists, a well-developed IT infrastructure, and reliable informational databases. Moreover, the validity of simulation results is directly contingent upon the adequacy of the selected probability distributions and the robustness of the underlying analytical assumptions.

From a scientific perspective, the proposed methodological approach expands existing frameworks for evaluating investment efficiency through the integration of classical financial indicators, probabilistic analytical techniques, and digital data-processing instruments. The practical significance of the research lies in the potential adaptation of the developed model for joint-stock companies and industrial enterprises operating under conditions of heightened uncertainty.Thus, the discussion of the obtained results confirms that the transition toward a digital, risk-oriented system for evaluating investment projects constitutes an objective necessity within the context of the contemporary economic environment. A comprehensive analytical approach enables the enhancement of investment decision resilience, facilitates long-term value creation, and contributes to the mitigation of financial risk exposure.

CONCLUSION

The conducted study substantiated the necessity for transforming conventional approaches to the evaluation of the economic efficiency of investment projects under the conditions of a digitalized economy and an increasingly uncertain external environment. The findings indicate that deterministic analytical techniques—primarily based on the static calculation of Net Present Value (NPV) and the Internal Rate of Return (IRR)—do not ensure a comprehensive incorporation of investment-related risk and may therefore lead to the adoption of insufficiently substantiated managerial decisions.

The developed integrated methodological framework combines the discounted cash flow model, a risk-adjusted discount rate, the Economic Value Added (EVA) indicator, and probabilistic Monte Carlo simulation. Such a comprehensive analytical approach enables a transition from single-point estimations to probability-based evaluations of financial outcomes, thereby facilitating the identification of acceptable risk thresholds and enhancing the objectivity of investment decision-making processes.

Particular importance is attributed to the utilization of digital data-processing technologies, which ensure the automation of computational procedures, improve the accuracy of financial forecasting, and enhance the adaptability of the analytical model to dynamically changing economic conditions. The integration of classical financial instruments with advanced digital analytical solutions thus forms the foundation of a contemporary risk-oriented system of investment analysis.

The proposed methodological approach possesses both scientific and practical relevance and can be adapted for application within joint-stock companies and industrial enterprises, thereby contributing to the strengthening of investment resilience and the creation of long-term corporate value in the context of the ongoing digital transformation of the economy.

REFERENCES

- *Decree of the President of the Republic of Uzbekistan dated January 28, 2022, No. PF-60, "On the Development Strategy of the New Uzbekistan for the Period 2022–2026". https://lex.uz/docs/5841063*
- *Damodaran, Aswath. Investment Valuation : Tools and Techniques for Determining the Value of Any Asset. 3rd ed. Hoboken, N.J: Wiley, 2012. Print.*
- *Hull, J. C. (2023). Risk management and financial institutions. John Wiley & Sons.*
- *Mun, Johnathan. (2006). Modeling Risk: Applying Monte Carlo Simulation, Real Options Analysis, Stochastic Forecasting, and Optimization.*
- *OECD (2024), OECD Digital Economy Outlook 2024 (Volume 1): Embracing the Technology Frontier, OECD Publishing, Paris,https://doi.org/10.1787/a1689dc5-en.*
- *Damodaran, Aswath. Investment Valuation : Tools and Techniques for Determining the Value of Any Asset. 3rd ed. Hoboken, N.J: Wiley, 2012. Print.*
- *Hull, J. C. (2023). Risk management and financial institutions. John Wiley & Sons.*
- *Mun, Johnathan. (2006). Modeling Risk: Applying Monte Carlo Simulation, Real Options Analysis, Stochastic Forecasting, and Optimization.*
- *Улашов, А. Р. (2024). Направления повышения экономической эффективности на предприятиях.*
- *Ulashov, A. R. O. G. L. (2024). INVESTITSION LOYIHANI AMALGA OSHIRISHNING MOLIYAVIYIQTISODIY SAMARADORLIGINI BAHOLASH KO 'RSATKICHLARI. Academic research in educational sciences, 5(TSUE Conference 1), 418-422.*
- *Анализ инвестиционной привлекательности [Электронный ресурс] : учебное пособие / А. В. Бобков, Н. П. Паздникова ; Пермский госу дарственный национальный исследовательский университет. – Элек тронные данные. – Пермь, 2021. – 3,58 Мб ; 152 с. – Режим доступа: http://www.psu.ru/files/docs/science/books/uchebnie-posobiya/bobkovpazdnikova-analiz-investicionnoj-privlekatelnosti.pdf. – Заглавие с экрана.*
- *https://openlibrary.org/books/OL34686837M/Fundamentals_of_Financial_Management*

MONITORING OF ECONOMIC ACTIVITY OF RETAIL TRADE ENTERPRISES

ToshpulatovBoburRasulogli[1]

Introduction

In the Surkhandarya region, a significant role is assigned to the retail trade sector as an important structural component of the domestic market in shaping the economic potential of the Republic and ensuring the effective functioning of the consumer goods circulation system.

An analysis of regulatory and legal documents, scientific literature, and business practices of retail trade enterprises shows that in recent years positive changes have been observed in the development of their material and technical base. In particular, modern retail technologies are being introduced, retail enterprises that meet international standards in terms of customer service culture are being developed, and local retail chains operating under a single trade brand adhere to a unified operational strategy.

Literature Review

The analysis of macroeconomic indicators of the Surkhandarya region is reflected in the research of various scholars. In particular, the statistical analysis of housing construction enterprises in the region was studied by Q.T. Ibragimov [1], development trends of construction materials in the region were examined by B.E. Turayev [2], and fruit and vegetable production in the region was analyzed by O.A. Jorayev [3]. The above studies focus on the statistical analysis of specific sectors. In contrast, this article provides a general statistical analysis of the gross regional products of the region.

Research Methodology

In writing this article, observation, statistical analysis, and comparative methods were widely used.

Analysis and Results

According to the analytical results, the Surkhandarya region (96.9%), Kashkadarya region (95.1%), and the Republic of Karakalpakstan (95.5%) are leading in terms of the share of small businesses and private entrepreneurship entities in retail trade turnover. As of April 1, 2025, the number of commercial enterprises operating in the retail trade sector amounted to 5,158, of which 72 were large enterprises and 5,086 were small enterprises and microfirms.

According to the ranking compiled by M.M. Kuznetsov, Ukraine maintained its attractiveness for international retail trade investments in 2009 and, as in 2008, ranked 17th, entering the Top 30 countries [4]. The attractiveness of the Ukrainian retail market is explained by the growth and stability of retail trade turnover, low rental rates, declining land prices, and the reduced cost of Ukrainian retail enterprises with high debt burdens.

An annual growth of retail trade turnover by 15 percent is sufficiently attractive for foreign investors. Despite the slowdown in turnover growth rates in 2009, experts expect a renewal of interest in the retail trade market after improvements in capital market conditions.

[1] Lecturer, Termez State Pedagogical Institute

The main indicator characterizing the activity of retail trade enterprises is retail trade turnover, the dynamics of which are presented in Figure 1.

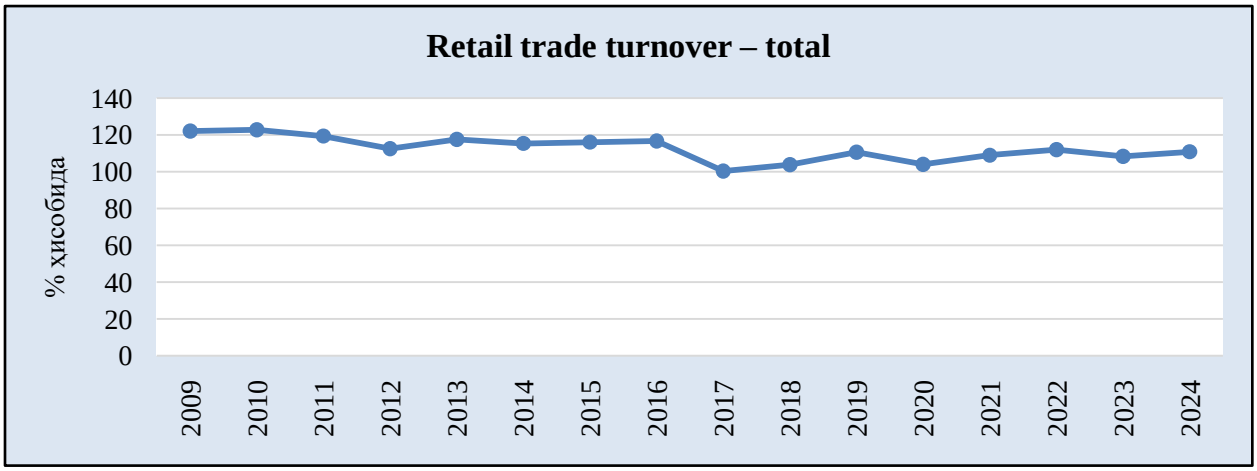


Figure 1. Dynamics of retail trade turnover volume of enterprises in the Surkhandarya region for 2009–2024

Based on the data presented in Figure 1, it can be concluded that during the period from 2009 to 2024, the physical volume of retail trade turnover of enterprises in the Surkhandarya region consistently increased compared to the previous year. In addition, the highest growth rates of retail trade turnover were observed in 2009, when it increased by 22.0 percent compared to 2008, and in 2010, when it grew by 22.7 percent compared to the previous year. Except for 2008 and 2009, the annual acceleration of retail trade turnover growth in all subsequent years was also positive (Figure 2).

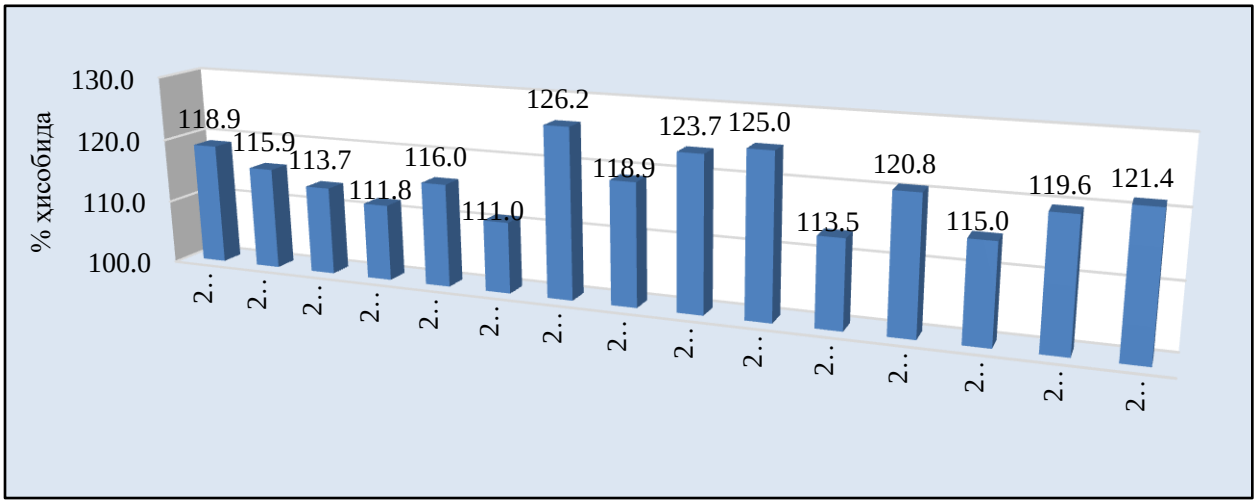


Figure 2. Chain growth rates of retail trade turnover volume of enterprises in the Surkhandarya region for 2009–2024

The year 2016 became a significant year for retail trade enterprises, as the volume of retail trade turnover amounted to 4,766.4 billion UZS, which is 26.2 percent higher than in 2015 (at comparable prices). It should be emphasized that during this period several large retail operators operated successfully due to substantial accounts payable and appropriate internal policies. According to experts, in the retail trade

market of the Surkhandarya region, only those retail enterprises that are able to adapt to crisis conditions, possess promising strategic objectives, are development-oriented, and impose strict requirements on the opening of new retail outlets and lease conditions are considered viable.

The analysis of data presented in the studies of Ye.A. Karpenko indicates that regional trade development is characterized by average levels both in absolute terms and on a per capita basis [5]. Therefore, a study was conducted to examine the practice of implementing process-oriented management in retail trade enterprises.

The Surkhandarya region is an administrative region of the Republic of Uzbekistan. It was established on March 6, 1941 (previously the Surkhandarya District since June 29, 1925). The region is located in the southeastern part of the country, in the Surkhan–Sherabad Valley. The name of the region originates from the “Surkhan” River (Persian-Tajik: “red”) flowing through the valley. It borders Afghanistan along the Amu Darya River to the south, Tajikistan to the north, northeast, and east, Turkmenistan to the southwest, Kashkadarya region to the northwest. The total area is 20.1 thousand square kilometers, with a population of 2.907 million as of June 1, 2024. The region comprises 14 districts.

In the Surkhandarya region, the main places where the population purchases food products are farmers’ markets and supermarket-format stores, accounting for 47.3 percent. The second largest share belongs to stores established by local entrepreneurs (31.6 percent), while unorganized retail enterprises rank third (21.1 percent).

According to the analytical results, the Surkhandarya region (96.9 percent), the Kashkadarya region (95.1 percent), and the Republic of Karakalpakstan (95.5 percent) lead in terms of the share of small businesses and private entrepreneurship entities in retail trade turnover. As of April 1, 2025, the number of commercial enterprises operating in the retail trade sector amounted to 5,158, of which 72 were large enterprises and 5,086 were small enterprises and microfirms.

In terms of the number of retail outlets in the region, the “ATB-market” chain ranks first (Table 1). Positive trends in the development of retail trade in the Surkhandarya region are reflected in the clear dynamics of retail trade turnover growth rates, the vector of which corresponds to the overall national trend (Appendix 1).

Table 1 : Retail trade enterprises with established market positions in the territories of the Surkhandarya region as of 2024

“TERMIZ-SOF-BARAKA” Limited Liability Company	Retail sale of small technical devices, lamps, tools, etc.	Termez city, A. Navoi Street, 31, Apt. 17	47590	17.5
“MagnitMarket”, TermezCity	Retail sale of food products, beverages, and tobacco products	Magnit Market, 7865+CFR, Termez city	47110	30.5
“DENOV MATLU-BOTSAVDO BIZNES” Family Enterprise	Mixed grocery store (milk, bread, meat, etc.)	Denov city, M. Baraka Street, 45	47110	14.4

“ImratMarket”, DenovDistrict	Retail sale of food products, beverages, and tobacco products	Denov city, H. Mirzayev Street, 295	47110	33.2
“DEHYDRATION VEGFRUITS” Limited Liability Company	Retail sale of household electrical appliances (TVs, washing machines, refrigerators, vacuum cleaners, etc.)	Qumqurgan city, YangiShahar neighborhood, unnumbered building	47540	13.9
“BarakaMarket”, QumqurganDistrict	Retail sale of food products, beverages, and tobacco products	Baraka Trade Complex, RHJR+H9J, Qumqurgan	47110	26.7
“AYSHA SHUKRO-NA MALAK” Family Enterprise	Retail sale of bread and confectionery products	Uchqizil settlement, Shifokorlar Street, unnumbered building	47241	10.8
“ZilolMarket”, TermezDistrict	Retail sale of food products, beverages, and tobacco products	ZILOL Market, 787X+7V3, Termez district	47110	20.6
“SURXON AGRO FOOD ORGANIZATIONS” Limited Liability Company	Retail sale of grain, flour, cereals, and other grain products	Jarkurgan city, SurxonSohili neighborhood, unnumbered building	47213	11.3
“OzbegimMarket”, JarkurganDistrict	Retail sale of food products, beverages, and tobacco products	Jarkurgan city, NurliDiyor neighborhood, unnumbered building	47110	19.8

During the period 2000–2012, the average growth rate of retail trade turnover of enterprises in the Surkhandarya region amounted to 115.8 percent. In contrast, during 2013–2024, the average growth rate declined to 110.3 percent, representing a decrease of 5.5 percent compared to the previous period. At the same time, it should be noted that the growth of sales volume in the Surkhandarya region is significantly lower than the national average.

Throughout the entire period under analysis, the increase in the volume of retail trade turnover accompanied by a noticeable reduction in the number of retail trade outlets indicates the development of modern large-format stores and retail systems. In the retail trade market of the Surkhandarya region, sufficiently strong retail chains operate, including “Magnit Market” in Termez city, “Imrat Market” in Denov district, “Baraka Market” in Qumqurgan district, “Zilol Market” in Termez district, and “Ozbegim Market” in Jarkurgan district.

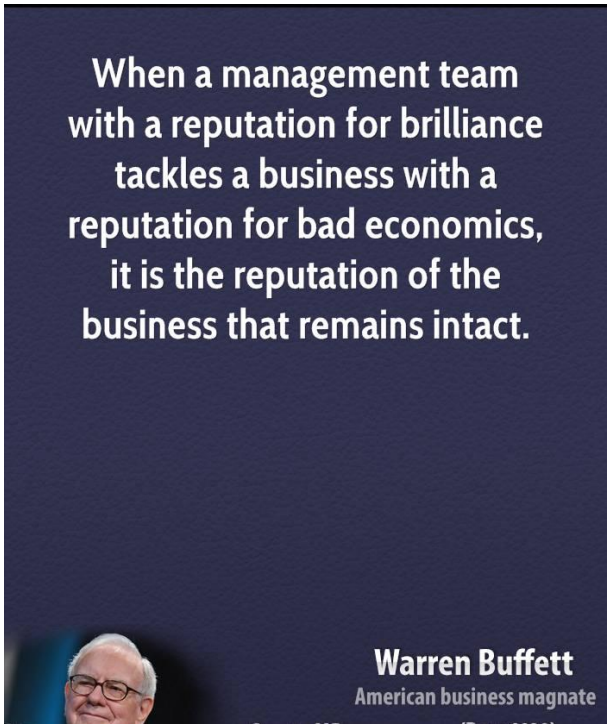
Considering the enterprises selected for the study, it should be noted that they are located in different districts of the Surkhandarya region, and due to differences in their working capital volumes, it is necessary to conduct a territorial-based assessment.

References

- *Ibragimov, K.T. Economic-statistical analysis of active construction enterprises in the Surkhandarya region. Journal of Management Value & Ethics, Vol. 13, No. 02, April Special Issue, 2023. SJIF 8.001; GIF 0.626. ISSN 2249-9512.*
- *Turayev, B.E. Econometric modeling of the building materials industry. Journal of Management Value & Ethics, Vol. 13, No. 02, April Special Issue, 2023, pp. 192–199.*
- *Jorayev, O.A. Economic and statistical analysis of fruit and vegetable production processes in the Surkhandarya region. Proceedings of the Republican Scientific-Practical Conference "Latest Achievements of Science in New Uzbekistan," Tashkent: TIQXMMI, December 16, 2023.*
- *Kuznetsov, M.M. Development of the transport services market in Ukraine. Scientific Notes of Tavrida National University named after V.I. Vernadsky, Series "Economics and Management," Vol. 22 (61), No. 1, 2009, pp. 33–44.*
- *Karpenko, E.A. Process-oriented management of retail trade enterprises.PhDDissertation (Economics), Specialty 08.00.04, Poltava, 2011, 341 p.*

Enterprise	Activity	HeadOffice	IFUT code	Averageturnover, bln. UZS
"TERMIZ-SOF-BARAKA" Limited Liability Company	Retail sale of small technical devices, lamps, tools, etc.	Termez city, A. Navoi Street, 31, Apt. 17	47590	17.5
"MagnitMarket", TermezCity	Retail sale of food products, beverages, and tobacco products	Magnit Market, 7865+CFR, Termez city	47110	30.5
"DENOV MATLU-BOTSAVDO BIZNES" Family Enterprise	Mixed grocery store (milk, bread, meat, etc.)	Denov city, M. Baraka Street, 45	47110	14.4
"ImratMarket", DenovDistrict	Retail sale of food products, beverages, and tobacco products	Denov city, H. Mirzayev Street, 295	47110	33.2
"DEHYDRATION VEGFRUITS" Limited Liability Company	Retail sale of household electrical appliances (TVs, washing machines, refrigerators, vacuum cleaners, etc.)	Qumqurgan city, YangiShahar neighborhood, unnumbered building	47540	13.9
"BarakaMarket", QumqurganDistrict	Retail sale of food products, beverages, and tobacco products	Baraka Trade Complex, RHJR+H9J, Qumqurgan	47110	26.7

“AYSHA SHUKRO-NA MALAK” Family Enterprise	Retail sale of bread and confectionery products	Uchqizil settlement, Shifokorlar Street, unnumbered building	47241	10.8
“ZilolMarket”, TermezDistrict	Retail sale of food products, beverages, and tobacco products	ZILOL Market, 787X+7V3, Termez district	47110	20.6
“SURXON AGRO FOOD ORGANIZATIONS” Limited Liability Company	Retail sale of grain, flour, cereals, and other grain products	Jarkurgan city, SurxonSohili neighborhood, unnumbered building	47213	11.3
“OzbegimMarket”, JarkurganDistrict	Retail sale of food products, beverages, and tobacco products	Jarkurgan city, NurliDiyor neighborhood, unnumbered building	47110	19.8



ECONOMETRIC MODELING AND FORECASTING PROSPECTS OF INDICATORS FOR IMPLEMENTING A MODERN HEALTHCARE SYSTEM IN THE REGION

Boltayev Magrurbek Allayarovich[1]

ABSTRACT

This article discusses the prospects for econometric modeling and forecasting of indicators for the implementation of a modern healthcare system in the region.It also provides conclusions on the effective implementation of econometric modeling and forecasting of indicators for the implementation of a modern healthcare system.

Keywords.Region, Healthcare, System, Healthcare System, Econometric Modeling, Forecasting Prospects.

Introduction

Modernization of the healthcare system in regions is a crucial prerequisite for improving public health, enhancing the quality of labor resources, and ensuring economic stability. Effective management of this process requires an in-depth analysis of socio-economic indicators in the healthcare sector, identification of interdependencies among these indicators, and scientifically grounded forecasting of future development trends. In this context, econometric modeling methods play a significant role in assessing the effectiveness of implementing and developing healthcare systems.

According to previous studies, econometric modeling occupies a central place in managing the tourism industry by providing analytical tools for evidence-based decision-making [1]. Other studies have developed models aimed at optimizing healthcare expenditures through the redistribution of available resources based on financial conditions and patient classifications [2]. These models are grounded in analyzing total medical costs for specific disease groups and aligning healthcare expenditures with annual planning objectives.

Research on regional healthcare systems highlights the importance of identifying promising organizational and managerial approaches to minimize resource requirements and implementation conditions for digital technologies [3]. Accordingly, instruments for managing social relations that facilitate the introduction of healthcare innovations are recommended.

Further studies emphasize the need for future research focused on healthcare system development prospects, particularly in hospital service delivery. The ultimate objective is to establish a more efficient and measurable system to improve healthcare standards and public awareness [4]. Other research presents medium-term forecasts for the development of the medical services market in the Khorezm region of the Republic of Uzbekistan, demonstrating strong correlations among indicators and enabling the identification of forecast parameters through regression analysis [5].

Additional studies focus on developing econometric models to forecast the achievement of key objectives of medical institutions under existing municipal socio-economic conditions, using regression analysis techniques [6]. According to other sources, econometric modeling has become a vital tool in healthcare, providing a solid foundation for analyzing the complexities of healthcare financing and policy formulation [7].

[1] Independent researcher at Urgench State University named after Abu Rayhon Beruni

Methodology and Econometric Modeling

In econometric modeling of a modern regional healthcare system, a group of indicators is employed, including healthcare budget expenditures, per capita medical spending, the number and capacity of medical institutions, availability of physicians and mid-level medical staff, the level of implementation of digital healthcare (e-health) elements, life expectancy, morbidity and mortality rates, and patient satisfaction with medical services. These indicators are shaped by social, economic, and institutional factors.

Econometric modeling is based on representing socio-economic processes using mathematical and statistical methods. In the healthcare sector, econometric models are applied to determine the strength of influencing factors, optimize resource allocation, evaluate policy effectiveness, and develop medium- and long-term forecasts.

The following types of econometric models are commonly used for regional healthcare systems:

- **Regression models**, particularly multivariate regression models, to identify relationships between healthcare indicators and influencing factors:
- $Y=\beta_0+\beta_1X_1+\beta_2X_2+...+\beta_nX_n+\varepsilon$ (1)

where:
Y - dependent variable (life expectancy);

Xi-explanatory variables;

Bi - model parameters;

ε -– random error term.

- **Time series models**, such as ARIMA and VAR, used to analyze and forecast changes in healthcare indicators over time.
- **Panel data models**, which are effective for analyzing multi-year data across regions and allow for accounting for interregional differences.

Digital technologies play an increasingly important role in modern healthcare systems. Accordingly, econometric models incorporate variables such as the share of institutions using electronic medical records, coverage of telemedicine services, investments in medical information systems, and the proportion of the population using digital health services. Empirical results confirm that digital healthcare positively influences life expectancy and the quality of medical services.

Scenario Forecasting

Based on econometric models, the following development scenarios are formulated:

- **Inertial scenario**, assuming the continuation of existing trends.
- **Innovative scenario**, characterized by significant growth in digital healthcare, investments, and human capital.
- **Pessimistic scenario**, reflecting limited financing and slow institutional reforms.
- The implementation of these scenarios demonstrates that econometric forecasting contributes to increased life expectancy, reduced morbidity, improved labor productivity, decreased social burden on the state budget, and enhanced regional investment attractiveness.

As a result of these econometric forecasts, the life expectancy of the population will increase, the incidence rate will decrease, labor productivity will increase, the social burden on the state budget will decrease, and the investment attractiveness of the region will increase. As for the prospects for implementing econometric modeling, in the future, such areas as modeling based on artificial intelligence and Big Data, working with real-time data, integration with GIS technologies, and intelligent systems supporting medical decisions will be considered priority areas. Based on this, the following table indicators were used to determine the prospects for econometric modeling and forecasting of indicators for the implementation of a modern healthcare system in the region (Table 1).

Table 1 : Indicators of the implementation of a modern healthcare system in the region in 2010-2024[1]

Years	Number of hospital institutions pcs	Number of outpatient clinics, pcs	Number of hospital beds, thousand pcs	Number of medical doctors, thousand people	Number of medical workers, thousand people	Number of paramedical workers, thousand people
2010.	33	302	6,5	4	19,8	15,8
2011.	33	295	6,6	4	19,9	15,9
2012	33	299	6,7	4	20	16
2013	33	311	6,7	3,7	18,6	14,9
2014	34	298	6,6	4,1	19,9	15,8
2015	37	291	6,6	4,2	20	15,8
2016	38	321	6,7	4,6	20,4	15,8
2017	42	270	6,8	4,8	20,6	15,8
2018	42	303	6,9	5	20,9	15,9
2019	50	334	7	5,1	21,2	16,1
2020	56	366	7,2	5,3	21,4	16,1
2021	72	419	7,5	5,3	21,7	16,4
2022	75	462	7,8	5,6	22,8	17,2
2023	75	533	8	5,8	23,1	17,3
2024	83	502	8,6	6,2	23,3	16,6

Econometric studies were conducted on the basis of this Table 1. In this regard, it was taken into account that the healthcare system is one of the important socio-economic sectors in ensuring the health of the population. Because the dynamics of the number of hospitals, outpatient clinics, medical personnel and beds determine the country's potential for providing medical services. Therefore, based on statistical data for

[1]Information from the General Directorate of Statistics of Khorezm region

2010-2024, the main indicators of the healthcare sector were analyzed and forecast values for 2026-2030 were calculated.

The following indicators were taken as the object of research:

number of hospitals (units);

number of outpatient clinics (units);

number of beds in hospital institutions (thousands);

number of medical doctors (thousands);

number of medical workers (thousands);

number of paramedical workers (thousands).

As for the selected forecast model, the study used a linear trend model. This model reflects the influence of the time factor.

The formula for the linear trend model is:

$$Ý_t = a + b \cdot t \qquad (2)$$

where:

$Ýt$ - forecasted indicator.

t - time indicator (years ordinal number);

a - initial value;

b - average annual change coefficient.

Based on this formula, the calculated trend equation has the following form (Table 2).

Table 2 : Calculated trend equation[1]

Indicator name	Trend equation
Number of hospital facilities, pcs.	Ý=18,6+4,15t
Number of outpatient clinics, pcs	Ý=245,4+17,9t
Number of beds (thousands)	Ý=5,9+0,18t
Medical doctors (thousands)	Ý=3,4+0,19t
Medical staff (thousands)	Ý=18,2+0,36t
Nursing staff (thousands)	Ý=15,4+0,08t

In the equations, t is the time indicator (sequence of years), and coefficients such as 18.6, 245.4, 5.9, 3.4, 18.2 and 15.4 indicate the conditional initial level of the indicators. The coefficients in front of t (4.15, 17.9, 0.18, 0.19, 0.36 and 0.08) reflect the average annual growth rate of each indicator. According to the results of the analysis, there is a positive growth trend for all indicators. In particular, it is observed that the growth rate is higher in the number of outpatient clinics and hospital institutions. This indicates that reforms

[1]Author's development.

are being implemented aimed at gradually expanding the healthcare infrastructure and increasing the volume of medical services.

Based on these calculations, forecast values for 2026-2030 were determined (Table 3).

Table 3 :Forecast values of indicators for the implementation of a modern healthcare system in the region for 2026-2030[1]

Year	Number of hospital facilities, pcs.	Number of outpatient clinics, pcs.	Number of beds (thousands)	Number of doctors (thousands)	Number of medical personnel (thousands)	O‘rta tibbiyot xodimlari soni (ming nafar)
2026	89	550	8,9	6,6	24,3	16,8
2027	93	568	9,1	6,8	24,7	16,9
2028	97	586	9,3	7,0	25,0	17,0
2029	101	604	9,5	7,2	25,4	17,1
2030	105	622	9,7	7,4	25,8	17,2

Based on this Table 3, we will conduct a detailed analysis of the indicators. Analyzing the forecast values for 2026-2030 from year to year, that is, comparing each year with the previous one, clearly shows the pace of development and priority areas in the healthcare sector. This analysis makes it possible to assess how the infrastructure and human resources capacity in the system are gradually changing. The indicators for 2026 reflect an increase in comparison with 2025. The number of hospital institutions is 89, which indicates an expansion of the possibilities for providing inpatient medical services. The number of outpatient clinics has reached 550, which indicates that great attention is being paid to the primary health care system. The increase in the number of beds to 8.9 thousand indicates an improvement in the possibilities for meeting the treatment needs of the population. The increase in the number of doctors, medical workers and paramedical staff indicates positive changes in the provision of personnel.

In 2027, compared to 2026, growth will continue in all indicators. The number of hospital institutions is projected to increase from 89 to 93, an increase of 4. This indicates a steady expansion of the hospital infrastructure. The number of outpatient clinics will increase from 550 to 568, an annual increase of 18. The number of beds will increase from 8.9 thousand to 9.1 thousand, which will serve to increase the volume of inpatient services. The number of doctors is projected to increase from 6.6 thousand to 6.8 thousand, and the number of medical workers from 24.3 thousand to 24.7 thousand. An increase of 0.1 thousand will also be observed in the number of paramedical staff.

[1]Author's development.

In 2028, stable positive changes will continue compared to the previous year. The number of hospital institutions will increase by 4, from 93 to 97. The number of outpatient clinics will increase from 568 to 586, indicating that the expansion of the primary health care network is continuing. The increase in the number of beds from 9.1 thousand to 9.3 thousand will further improve the quality of inpatient services. The number of doctors will increase from 6.8 thousand to 7.0 thousand, and the number of medical staff from 24.7 thousand to 25.0 thousand. The number of paramedical staff will also increase by 17.0 thousand, showing an increase compared to the previous year.

In 2029, the growth will continue even more consistently compared to 2028. The number of hospitals will increase from 97 to 101, ensuring the expansion of the network of medical institutions. The number of outpatient clinics will increase from 586 to 604, increasing the possibilities for providing medical services close to the population. The number of beds will increase from 9.3 thousand to 9.5 thousand, further strengthening the possibilities for inpatient treatment. The number of doctors will increase from 7.0 thousand to 7.2 thousand, and the number of medical workers from 25.0 thousand to 25.4 thousand. The number of paramedical staff will also increase by 0.1 thousand, maintaining stable growth. The projected indicators for 2030 also have positive dynamics compared to 2029. The number of hospital institutions will increase from 101 to 105, with an annual increase of another 4. The number of outpatient clinics increased from 604 to 622, indicating the continued development of the primary health care network. The number of beds will increase from 9.5 thousand to 9.7 thousand, and the volume of inpatient services will further expand. The number of doctors is projected to increase from 7.2 thousand to 7.4 thousand, and the number of medical staff from 25.4 thousand to 25.8 thousand. The number of paramedical staff will reach 17.2 thousand, demonstrating steady growth compared to the previous year. In general, positive changes will be observed in all key indicators in each year during 2026-2030 compared to the previous year. This indicates that the infrastructure and human resources capacity of the healthcare system are developing proportionally, and the volume and quality of medical services are increasing. Such steady growth will serve as a solid foundation for improving the health of the population and increasing the efficiency of the sector in the future.

In conclusion, econometric modeling and forecasting of indicators of the implementation of a modern health care system in the region is an important scientific and practical tool for increasing the effectiveness of health policy, optimal resource allocation and improving the health of the population. These forecasts, developed on the basis of econometric approaches, serve as a key decision-making mechanism for ensuring the long-term sustainable development of the region. Therefore, econometric modeling in health care is considered a dynamic and important area at the intersection of economics, statistics and health care. With the right tools and methodological approach, these models can have a profound impact on politics and policy-making processes.

The analysis reveals a stable positive growth trend across all key healthcare indicators, particularly in the number of hospitals and outpatient clinics, indicating the gradual expansion of healthcare infrastructure and service capacity.

Forecast results for 2026–2030 indicate consistent annual growth in healthcare institutions, bed capacity, medical personnel, and supporting staff, reflecting balanced development of infrastructure and human resources.

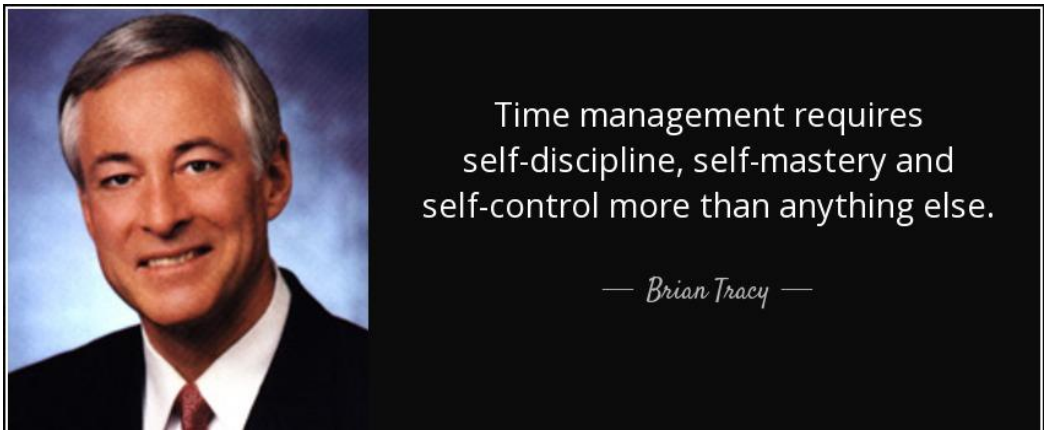
Conclusion

In conclusion, econometric modeling and forecasting of indicators for implementing a modern regional healthcare system represent an essential scientific and practical tool for improving healthcare policy effectiveness, optimizing resource allocation, and enhancing population health outcomes. Forecasts developed using econometric approaches serve as a key decision-making mechanism for ensuring long-

term sustainable regional development. Consequently, econometric modeling in healthcare stands at the intersection of economics, statistics, and public health, constituting a dynamic and strategically important research field capable of exerting substantial influence on policy formulation and implementation.

References :

- *Shukurov I.A. The importance and role of econometric modeling in economics. // Economy and Society, No. 5(120), 2, 2024. - 669 p.*
- *Kulikova O.M., Usacheva E.V., Shamis V.A., Nelidova A.V., Boush G.D. The Financing Model of the Regional Health System. Digest Finance, 2018, vol.23, iss.4. - pp. 384-394. https://doi.org/10.24891/df.23.4.384*
- *Mishon E.V., Gogoleva T.N., Kanapukhin P.A., Sokolov A.A. (2020). Analysis and Forecasting of Prospects for Digitalization of a Regional Healthcare System. In: Popkova, E., Sergi, B. (eds) Digital Economy: Complexity and Variety vs. Rationality. ISC 2019. Lecture Notes in Networks and Systems, vol 87. Springer, Cham. https://doi.org/10.1007/978-3-030-29586-8_63*
- *RosmanjawatiBinti Abdul Rahman. Econometric structural modeling and efficiency study in a health care environment. // Thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy. UniversitiSains Malaysia, May 2007. - pp. 1-36.*
- *Rakhimova S., Yusupova F., Andryushchenko I., Yumashev A., Karapetyan A. Forecasting Development of Medical Services Market in the Context of Model-Based Innovation Economy. // BIO Web of Conferences 82, 050001 (2024). MSNBAS2023. - pp. 1-12.*
- *Tkhorikov B.A., Spichak I.V. Econometric models prediction of the municipal health system. // Modern problems of science and education, 2011, №6. - p. 303.*
- *https://www.numberanalytics.com/blog/top-key-tips-econometric-models-health*
- *Data from the Main Department of Statistics of the Khorezm region*



Information to Authors :

The paper should be typed in MS-Word.

- Title of the paper should be followed by Name, e-mail and affiliation of author(s).
- Use a single column layout with both left aFnd right margins justified.
- Font Main Body text 10 point Style Arial or Times New Roman
- **Tables and Figures :** To the extent possible, tables and figures should appear in document near after where they are referred in the text. Avoid the use of small type in tables. In no case should tables or figures be in a separate document or file.
- An abstract of not more than 200 words is required.
- The paper should start with an introduction and with a Conclusion summarizing the findings of the paper.
- **References :** It is the author's obligation to provide complete references with the necessary information. References should appear to the text and the User of all references must be placed at the end of the manuscript.
- Papers are accepted for publication on the stand that these contain original unpublished work not submitted for publication anywhere else.
- Facts of papers presented / submitted in a conference / seminar must be clearly mentioned at the bottom of the first page of the manuscript and the author should specify with whom the any right rests.
- Papers are processed through a blind referral system of experts in the subject areas. To answer anonymity the writer's name, designation and other details should appear on the first page alongwith title of the paper and should not be repeated anywhere else.

All manuscripts should be in electronic form and sent to :

The Editor
Journal of Management Value & Ethics
Gwalior Management Academy (GMA) Publications
C-17, Kailash Nagar, Near New High Court,
Gwalior (M.P.) – INDIA – 474 006
Tel. : 0751-2230233 Mob. 09425121133
E-mail : jmveindia@yahoo.com
Website : www.jmveindia.com

- Payment to be made by Net Banking directly in the account of Gwalior Management Academy, Gwalior (M.P.)

GWALIOR MANAGEMENT ACADEMY

Run by: Lt. Muhar Singh Sengar Memorial Shiksha vikas Samitee

MEMBERSHIP FORM

Name :.....

Sex : Male / Female .....

Date of birth ..... (MM/DD/YYYY).....

Address :.....

Phone.....Occupation.....

Email ID…….....

Type of membership: **Life member / working member / student member** (please tick any one).

I wish to be a part of the GMA and promise to work for promoting research activities in the interest of "**Journal of Management Value & Ethics**", so please enroll my name as working /life member. I am enclosing a cross cheque in favour of **Gwalior Management Academy** payable at Gwalior**.**

(Signature of member)

Mode of Payment through NIFT or Cheque will be accepted.

MEMBERSHIP FEES

Student Members: Rs. 1000 P.A.
Working Members: Rs. 2000 P.A.
Life members: Rs. 5000 (one time)
Institutional member : Rs. 2000 P.A.

Please send your duly filled membership forms/donations to :
C-17 Kailash Nagar Near, New High Court, Gwalior (M.P.) INDIA. Pin: - 474006

E-Mail to: jmveindia@yahoo.com, www.jmveindia.com
Phone: +91-0751-2230233, 9425121133