ECONOSCITECH INTEGRATION

ISSUE 10 PART II

INTERNATIONAL SCIENTIFIC ELECTRONIC JOURNAL

TASHKENT STATE UNIVERSITY OF ECONOMICS

American University of Technology
Powered by Arizona State University®

ISSN: 3060-5075



Acceptance of articles
PUBLISHED MONTHLY

ARTICLE CONTRIBUTORS
PROFESSORS, SCHOLARS, SPECIALISTS, AND RESEARCHERS



Google scholar

OpenAIRE

ISSN INTERNATIONAL STANDARD SERIAL NUMBER DENMARK

CONTACT: +998 94 3540880 https://econoscitech-integration-journal.uz

2026



EDITOR-IN-CHIEF:
Zufarova Nozima Gulamiddinovna
DSc., Dean of Tourism Faculty, TSUE

DEPUTY EDITOR-IN-CHIEF:
Makhmudov Nosir Makhmudovich
DSc., Prof., Academican

DEPUTY EDITOR-IN-CHIEF:
Suyunov Dilmurod Xolmurodovich
Doctor of Economics (DSc), Professor,

DEPUTY EDITOR-IN-CHIEF:
Allayarov Shamsiddin Amanullayevich
doctor of economics (DSC), professor

RESPONSIBLE SECRETARY:
Otaboyev Axmed Maxsudbek o‘g‘li
TSUE independent researcher

THE SCIENTIFIC-POPULAR ELECTRONIC JOURNAL **"ECONOSCITECH-INTEGRATION"** HAS BEEN REGISTERED UNDER THE NUMBER C-5669651 BY THE AGENCY FOR INFORMATION AND MASS COMMUNICATIONS (AOKA) OF THE REPUBLIC OF UZBEKISTAN, EFFECTIVE FROM OCTOBER 9, 2024.

In accordance with Resolution No. 384/6 dated April 10, 2026, issued by the Presidium of the Supreme Attestation Commission under the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan, this journal is included in the list of recommended international scientific publications for publishing the primary research findings of doctoral dissertations in the field of Economic Sciences.

Partners: Tashkent State University of Economics / American University of Technology in Tashkent (AUT)

Electronic publication. Issue 10. PART II
500 pages. Approved for publication in October 2026.

Editorial Board Members:


Sharipov Kongratbay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor


Teshabayev To‘lqin Zakirovich,
Doctor of Economic Sciences (DSc), Professor


Said Irandoust,
Doctor of Chemical Engineering Sciences, Professor


Abdurakhmanova Gulnora Kalandarovna,
Doctor of Economic Sciences (DSc), Professor


Khudoykulov Sadirdin Karimovich,
Doctor of Economics, (DSc), Professor


Tokunaga Masahiro,
professor, PhD of Economics of the Faculty of Business and Commerce


Debasis Das,
professor Department of Computer Science


Nitin Goje,
professor and Program Lead - Computer Science


Nargizakhon Shamshieva
Doctor of Economic Sciences, Professor


Rakhmonov Norim Razzakovich,
Doctor of Economic Sciences (DSc), Professor

Bayxonov Bahodirjon Tursunbayevich
Doctor of Science (DSc), Professor


Shomurodov Ravshan Tursunkulovich,
PhD, Associate Professor


Boymuratov Abduraxmat Djumayevich
Doctor of Philosophy (PhD) in Economics


Sharopova Nafosat Radjabovna
DSc, Associate Professor


Sultanova Kamila Mukhtorali Kizi
Master of Science

CONTENTS

THE ORGANISATIONAL AND ECONOMIC MECHANISM FOR MANAGING THE COMPETITIVENESS OF ENTREPRENEURIAL ENTITIES: A SUBSYSTEM-BASED FRAMEWORK AND A MEASUREMENT-ORIENTED CLASSIFICATION OF FACTORS 14
Akhmadjanov Abrorbek Akbarjon ugli

STATISTICAL ANALYSIS OF HUMAN CAPITAL ALLOCATION EFFICIENCY ACROSS SECTORS OF UZBEKISTAN'S ECONOMY 23
Ne'matova Gulchehraxon

АКТУАЛЬНЫЕ ВОПРОСЫ ОЦЕНКИ КРЕДИТОСПОСОБНОСТИ КОМПАНИЙ 32
Шомуродов Равшан Турсункулович

A COMPARATIVE STATISTICAL ASSESSMENT OF REAL ECONOMIC GROWTH ACROSS UZBEKISTAN'S REGIONS, 2010–2025 38
Shamsiyeva Nigora Rafiq qizi

ЗЕЛЁНАЯ ЭКОНОМИКА КАК ИНСТРУМЕНТ ОБЕСПЕЧЕНИЯ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ ГОСУДАРСТВА: МЕЖДУНАРОДНЫЙ ОПЫТ И ОСОБЕННОСТИ РАЗВИТИЯ В УЗБЕКИСТАНЕ 45
Хурсандов Комилжон Махматкулович

DIAGNOSIS-BASED TARGETING OF SUPPORT FOR CREATIVE ECONOMY ENTITIES: AN INDEX-BASED ALLOCATION MECHANISM (EVIDENCE FROM UZBEKISTAN) 56
Kurbonova Zebiniso Azimovna

MANAGING INNOVATION RISKS IN THE DEVELOPMENT OF THE GREEN ECONOMY 63
Madraximova Shohista Bahrom qizi

IMPROVING THE INVESTMENT STRATEGY FOR SUSTAINABLE DEVELOPMENT OF INDUSTRIAL ENTERPRISES 72
Samijonov Musobek

HOW CAN BEHAVIOURAL AND PSYCHOLOGICAL THEORIES EXPLAIN PATTERNS OF ARTIFICIAL INTELLIGENCE (AI) USE AMONG 15-YEAR-OLD STUDENTS, AND HOW ARE THESE PATTERNS ASSOCIATED WITH LEARNING OUTCOMES AND ACADEMIC PERFORMANCE? 86
Fayazov Xasan Jaxongir o'g'li

OPPORTUNITIES FOR IMPROVING THE AUDIT OF EXTRABUDGETARY REVENUES IN HIGHER EDUCATION INSTITUTIONS BASED ON INTERNATIONAL STANDARDS 94
Abduraxmonov Saidqosimxon Abduhamid o'g'li

REGIONAL DIFFERENTIATION OF SMALL BUSINESS AND PRIVATE ENTREPRENEURSHIP ACTIVITY: A COEFFICIENT-BASED INDEX FOR THE DISTRICTS OF NAMANGAN REGION, UZBEKISTAN 100
Malikov Ulug'bek Xoldarboyevich

INTEGRATED ASSESSMENT OF COMMERCIAL BANKS' ECONOMIC SECURITY: RISK-BASED EVIDENCE FROM UZBEKISTAN 106
Shavkat Makhramovich Uralov

CURRENT CHALLENGES AND PROSPECTS FOR ENHANCING COMMERCIAL BANKS' REVENUE GENERATION 113
Ostonakulova Gulchekhrakhon Mukhammadyokub kizi

THE INTERRELATIONSHIP BETWEEN CORPORATE GOVERNANCE, INTERNAL CONTROL SYSTEMS, AND FINANCIAL DISCIPLINE IN STATE-OWNED TRANSPORT ENTERPRISES 120
Raxmatov Ziyodullo Nosirovich

CONTENTS

BEYOND THE 3R APPROACH: INSTITUTIONAL STRUCTURE AND OPERATIONAL DYNAMICS OF THE 9R CIRCULAR ECONOMY HIERARCHY 130
Mirzayev Muzaffar Maxmudovich

INTEGRATED ASSESSMENT OF THE ECONOMIC DEVELOPMENT OF RAILWAY ROLLING STOCK MANUFACTURING AND REPAIR ENTERPRISES: A WEAKEST-LINKSENSITIVE AGGREGATION APPROACH 141
Mannonov Shohruhmirza Abdirashid o‘g‘li

ADVANCED INTERNATIONAL MODELS FOR ORGANIZING FOOD SUPPLY FOR MILITARY PERSONNEL: EXPERIENCES OF SEVEN LEADING COUNTRIES AND THEIR ADAPTATION TO THE NATIONAL GUARD SYSTEM 148
Sharifov Akmal Mamadaminovich

THE SIGNIFICANCE OF TRADITIONAL CRAFTSMANSHIP IN PRESERVING INTANGIBLE CULTURAL HERITAGE: THE CONTRIBUTION OF DILBAR MEROSI AND ITS RELATIONSHIP WITH CULTURAL TOURISM IN UZBEKISTAN 156
Tongotarova Zuhra
Amiriddinova Muslima

PROSPECTS FOR THE APPLICATION OF CLOUD COMPUTING IN THE DEVELOPMENT OF MODERN INFORMATION SYSTEMS 160
Bozorova Irina Jumanazarovna

INNOVATIVE APPROACHES TO ECONOMIC INCENTIVES FOR ENHANCING SOIL FERTILITY 168
Muslimjon Isakhanov

CONCEPTUAL FOUNDATIONS FOR DEVELOPING MARKETING STRATEGIES TO DIVERSIFY TOURISM SERVICES: THE CASE OF KHOREZM REGION 176
Komilov Dostonbek Ro‘zimboy o‘g‘li

REGULATORY FRAMEWORK FOR THE ACCOUNTING AND AUDITING OF FINANCIAL INSTRUMENTS IN UZBEKISTAN: A CLAUSELEVEL COMPARATIVE ANALYSIS WITH IFRS 9 AND ISA 540 (REVISED) 187
Shanasirova Nodira Abdullaevna

IMPROVING INTEGRATED MANAGEMENT OF INDUSTRIAL ENTERPRISES THROUGH ERP SYSTEMS: A DYNAMIC INVENTORY CONTROL AND AI-ASSISTED DECISION SUPPORT FRAMEWORK 197
Farhod Toshmuradovich Xoliyarov

THE ESSENCE, NECESSITY, AND SIGNIFICANCE OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN THE BANKING SYSTEM 205
Jurayeva Sevara Zakirovna

СОВЕРШЕНСТВОВАНИЕ СИСТЕМЫ СТРАХОВАНИЯ ЖИВОТНОВОДСТВА В УЗБЕКИСТАНЕ 212
Хужакулова Ирода Ураловна

IMPROVING THE ORGANIZATIONAL AND ECONOMIC MECHANISM FOR THE TRANSITION TO CLOUD SOLUTIONS IN COMMERCIAL BANKS 219
Jumayev Sohib Bahodirovich

EXPANDING THE SCOPE OF GREEN BANKING SERVICES IN UZBEKISTAN: BASED ON INTERNATIONAL EXPERIENCE 226
Mirzakhmedova A.A.

AN ECONOMETRIC ASSESSMENT OF GUIDE TRAINING, SERVICE QUALITY, AND TOURIST SATISFACTION: THREE STANDARD TOOLS AND WHAT EACH OF THEM REVEALS 232
Misirxonov Habibxon Iskandar o‘g‘li

RISK-TIERED CUSTOMS CLEARANCE OF TRAVELLERS BASED ON ADVANCE INFORMATION AS A TOOL FOR DEVELOPING CROSS-BORDER TOURISM IN UZBEKISTAN 243
Ergashev Qobiljon Ernazarovich

CREDIT RISK CAPITAL DIAGNOSTICS UNDER LIMITED DEFAULT DATA IN UZBEKISTAN 249
Gaybullaev Umidillaxon Hasan ugli

ASSET EFFICIENCY AND PROFITABILITY OF LARGE HOTEL ENTERPRISES IN UZBEKISTAN: EVIDENCE FROM FINANCIAL STATEMENTS FOR 2021–2025 256
Rakhimov Hasan Abdusaitovich

ECONOMIC EFFICIENCY OF AI-BASED VIRTUAL TRY-ON TECHNOLOGIES IN ENHANCING DIGITAL MARKETING STRATEGIES IN THE FASHION INDUSTRY 263
Ahmedova Rayhona Jasurbek qizi

DIRECTIONS FOR IMPROVING STATE FISCAL (BUDGETARY AND TAX) POLICY 272
Asatullaev Khurshid Sunatullaevich

АНАЛИЗ СОВРЕМЕННОГО СОСТОЯНИЯ И ПЕРСПЕКТИВ РАЗВИТИЯ УСТОЙЧИВОГО БИЗНЕСА В ДЕЯТЕЛЬНОСТИ АО «УЗБЕКИСТОН ТЕМИР ЙУЛЛАРИ» 277
Абдурахманова М. Т.
Машарипов Масъуд Нумонжонович

STRUCTURAL SOURCES OF LABOUR PRODUCTIVITY GROWTH IN UZBEKISTAN IN THE CONTEXT OF GLOBAL TRENDS 284
Artiqova O‘g‘iljon Zafar qizi

EFFICIENT USE OF ECONOMIC RESOURCES IN THE CONTEXT OF DIGITAL TRANSFORMATION 290
Muydinov Khurshidbek Abdullaevich

IMPROVING THE ACCOUNTING AND AUDIT OF TAX OBLIGATIONS 295
Dulabov Zafar Akbarovich

ECONOMETRIC MODELLING METHODS FOR ASSESSING THE INVESTMENT ATTRACTIVENESS OF INDUSTRIAL ZONES: A METHODOLOGICAL FRAMEWORK WITH EVIDENCE FROM UZBEKISTAN 299
Bozorova Nargiza Tolibjonovna

SUSTAINABLE UTILISATION OF THE TOURISM AND RECREATIONAL POTENTIAL OF PROTECTED NATURAL AREAS: THE CASE OF JIZZAKH REGION 307
Mamadiyorov Adhamjon Kuchkar ugli

THE MAIN ECONOMIC FACTORS AFFECTING AGRICULTURAL PRODUCTION ON FARMS 321
Axmedova Mavluda Shavkatovna

THE IMPACT OF DIVIDEND POLICY ON FINANCING DECISIONS AND CAPITAL STRUCTURE IN JOINT-STOCK COMPANIES 327
Abdurazakova Nargiza Rixsibayevna

METHODOLOGY FOR FINANCING JOINT-STOCK COMPANIES THROUGH IPOS, SPOS, AND FPOS 332
Abdurazakova Nargiza Rixsibayevna

FUNDAMENTALS OF INTERNAL AUDIT ORGANIZATION IN BUDGETARY ORGANIZATIONS 342
Nurmetov Nurmat Aminbayevich

THE IMPORTANCE OF TALENT MANAGEMENT IN ENSURING MANAGEMENT EFFECTIVENESS 347
Xolbayev Shaxriyor Abdullayevich
Nasimov Dilmurod Abdulloyevich

A METHODOLOGY FOR CONSTRUCTING AND ASSESSING AN INTEGRATED RESOURCE EFFICIENCY INDEX FOR INDUSTRIAL ENTERPRISES 355
Rasulova Durdona Gayratovna

THE IMPORTANCE OF ORGANIZING ESG AUDITS IN CONSTRUCTION AND CONTRACTING ORGANIZATIONS 360
Tulovov Erkinjon Tolqin ugli

CONTENTS

TESTING A PUBLISHED PROVISION MATRIX: EVIDENCE FROM AN UZBEK ELECTRICITY DISTRIBUTOR 365
Suyunov Jaloliddin O‘ktam o‘g‘li

INTERNATIONAL EXPERIENCE IN IMPROVING COMMERCIAL BANK CAPITAL EFFICIENCY AND OPPORTUNITIES FOR ITS APPLICATION IN UZBEKISTAN’S BANKING PRACTICE 376
M. Sa’dullaeva

DETERMINANTS OF PURCHASE CHANNEL CHOICE AND THE ECONOMIC EFFICIENCY OF E-COMMERCE TOOLS FOR SMALL FOOTWEAR BUSINESSES: EVIDENCE FROM A MULTINOMIAL LOGIT MODEL IN UZBEKISTAN 383
Makhmudova Munisakhon Abbos qizi

IMPROVING THE EFFICIENCY OF FINANCIAL RESOURCE ALLOCATION FOR FUNDING CIVIL SOCIETY INSTITUTIONS THROUGH ARTIFICIAL INTELLIGENCE TECHNOLOGIES 392
Khusanov Otabek Nishonovich

FORMATION AND DEVELOPMENT OF ECONOMIC SUPPORT MECHANISMS FOR EXPORT ACTIVITIES AT THE REGIONAL LEVEL 398
Dadajanova Moxinur Alisher qizi

ENHANCING THE EFFICIENCY OF THE PUBLIC PROCUREMENT SYSTEM: INSTITUTIONAL REFORMS AND INTERNATIONAL BEST PRACTICES 405
Kurbonbekov Sardorbek Ravshanovich

INTEGRATED STATISTICAL ASSESSMENT AND ECONOMETRIC MODELLING OF BUSINESS DEVELOPMENT ACROSS THE REGIONS OF UZBEKISTAN 412
Saidova Markhabo

QUANTITY IS NOT QUALITY: TRADITIONAL BIOMASS, ADAPTIVE CAPACITY, AND THE GROWTH RETURNS TO RENEWABLE ENERGY IN BRICS+ ECONOMIES, 2002–2022 417
Muslimova Farangiz

DOES INDUSTRIAL EXPANSION STILL DRIVE INCOME GROWTH? AN ARDL ANALYSIS OF INDUSTRIALISATION, ELECTRICITY CONSUMPTION, AND ECONOMIC GROWTH IN UZBEKISTAN 424
Eshboev Mirjalol Bakhrom ugli
Rayimbaev Otabek Uktamboy ugli

IMPROVING THE METHODOLOGY FOR ASSESSING THE INSTITUTIONAL AND ECONOMIC EFFICIENCY OF MANAGEMENT MODELS IN TEXTILE INDUSTRY ENTERPRISES 439
Avulchayeva Feruza Jurakuziyevna

A STATISTICAL ASSESSMENT OF TOURISM CLUSTERS IN DRIVING REGIONAL ECONOMIC GROWTH: A COMPARATIVE ANALYSIS OF UZBEKISTAN AND CYPRUS 445
Dilshodjon Nematov

CONTROLLING FREQUENCY-INDUCED IMPLICIT WEIGHTS IN MULTI-SOURCE CONSUMER PRICE DATA
(A Two-Stage Geometric Aggregation Approach and Evidence from Uzbekistan) 450
Ismailova Shaxnoza

ASSESSMENT OF THE EFFECTIVENESS OF EXISTING ORGANIZATIONAL AND ECONOMIC MECHANISMS FOR MANAGING INNOVATION ACTIVITIES IN TEXTILE INDUSTRY ENTERPRISES 456
Abdurahmanova Feruza Nusratovna

GOVERNING DIGITAL CHANGE THROUGH SCHOOL LEADERSHIP COMPETENCIES 462
Avazbek Esanov

THEORETICAL FOUNDATIONS AND INTERNATIONAL EXPERIENCE IN THE DEVELOPMENT OF SMALL BUSINESS AND PRIVATE ENTREPRENEURSHIP 468
Kaxorova Zamira Safaraliyevna

IFRS LINE: AN AUTHOR'S MODEL OF PARALLEL ACCOUNTING UNDER IFRS AND THE NATIONAL ACCOUNTING STANDARDS OF THE REPUBLIC OF UZBEKISTAN 474
Rakhimova Khalida Bakhodurovna

IMPROVING A MULTIFACTOR REGRESSION MODEL FOR ASSESSING THE WORK PERFORMANCE OF FACULTY MEMBERS IN HIGHER EDUCATION 480
Sultanova Kamila Mukhtorali kizi

ANALYSIS OF THE DEVELOPMENT STATUS OF THE FOOD INDUSTRY IN THE KHOREZM REGION AND THE EFFECTIVENESS OF STATE REGULATION 487
Xolmuratov Jamshidbek Xayrulla ugli

ECONOMIC–MATHEMATICAL MODELLING OF THE RELATIONSHIP BETWEEN INNOVATION OUTCOMES AND COMMERCIALISATION TIME IN COTTON-TEXTILE CLUSTERS 495
Tadjiyev Sadulla Muxidinovich

CONTEMPORARY TRENDS IN INDUSTRIAL DEVELOPMENT 501
Kasimov Azamat Abdukarimovich

WAYS TO IMPROVE MANAGEMENT EFFICIENCY THROUGH ARTIFICIAL INTELLIGENCE TECHNOLOGIES 509
Mardiev Bunyod Sirojiddin o‘g‘li
Amanova Lola Baydulla qizi

TIME-AWARE ALLOCATION OF CUSTOMS INSPECTION RESOURCES ACROSS RISK LANES: DECLARATION-LEVEL EVIDENCE FROM UZBEKISTAN 514
Kilichov Nazar Bafoyevich

НАКОПЛЕНИЕ КАПИТАЛА ОПЕРЕЖАЕТ РОСТ ПРОИЗВОДИТЕЛЬНОСТИ: ТЕХНИКО-ИНДИКАТИВНАЯ МАТРИЦА ДЛЯ ПРОИЗВОДИТЕЛЕЙ СПОРТИВНОГО ОБОРУДОВАНИЯ В УЗБЕКИСТАНЕ 519
Хамракулов Ихтиёр Бахтиёрович

AN INTEGRATED FRAMEWORK FOR ASSESSING AND ENHANCING OPERATIONAL PERFORMANCE IN ORGANIZATIONS 526
Oybek Rixsillayevich Sheraliyev

REGIONAL FRUIT BRANDS AND EXPORT COMPETITIVENESS IN UZBEKISTAN 530
Karimova Maftuna Nurdinovna

STRATEGIC INVESTMENT POLICY AND MANAGEMENT MODERNIZATION IN UZBEKISTAN'S CONSTRUCTION MATERIALS INDUSTRY: EMPIRICAL EVIDENCE AND STRUCTURAL TRAJECTORIES 536
Kutbitdinova Moxigul Inoyatovna

A RISK-BASED AUDIT METHODOLOGY FOR ELECTRICITY LOSSES IN DISTRIBUTION UTILITIES: EVIDENCE FROM UZBEKISTAN 543
Xojimuradov Zuxriddin Shukurullo o‘g‘li

PROSPECTS FOR DIVERSIFYING UZBEKISTAN'S MELON AND GOURD EXPORTS TO EUROPEAN UNION MARKETS: RESULTS OF THE HERFINDAHL–HIRSCHMAN INDEX (HHI) AND REGRESSION ANALYSIS 552
Rakhimov Feruz Uygunovich

CONTENTS

INTERNATIONAL SCIENTIFIC ELECTRONIC JOURNAL

PROSPECTS FOR DIVERSIFYING UZBEKISTAN'S MELON AND GOURD EXPORTS TO EUROPEAN UNION MARKETS: RESULTS OF THE HERFINDAHL–HIRSCHMAN INDEX (HHI) AND REGRESSION ANALYSIS

Rakhimov Feruz Uygunovich
Independent Researcher,
Gulistan State University

Abstract. This article examines the prospects for diversifying Uzbekistan's exports of melon and gourd crops to European Union markets. The study analyzes trends in the geographical distribution, volume, and market composition of exports of these products and assesses the level of export market concentration using the Herfindahl–Hirschman Index (HHI). In addition, regression analysis was conducted to identify the key factors influencing exports of these crops. The results indicate that a high concentration of exports in specific markets may increase exposure to external market risks. The study substantiates the potential for establishing new trade routes, ensuring the stability of export revenues, and enhancing the international competitiveness of Uzbekistan's melon and gourd crops through export diversification into European Union markets. Finally, the article presents scientific and practical recommendations aimed at expanding exports, developing product varieties that are in high demand in European markets, and broadening export geography.

Keywords: melon and gourd crops, exports, export diversification, European Union market, international market, Herfindahl–Hirschman Index (HHI), market concentration, regression analysis, export geography, competitiveness, export potential, foreign trade.

Аннотация. В статье рассматриваются перспективы диверсификации экспорта бахчевых культур Узбекистана на рынки Европейского союза. В исследовании анализируются тенденции изменения географической структуры, объёмов и распределения экспорта данной продукции по рынкам сбыта, а также оценивается уровень концентрации экспортных рынков с использованием индекса Херфиндаля–Хиршмана (HHI). Кроме того, проведён регрессионный анализ с целью выявления ключевых факторов, влияющих на экспорт бахчевых культур. Результаты исследования показывают, что высокая концентрация экспорта на отдельных рынках может повышать подверженность внешним рыночным рискам. В работе обосновываются возможности формирования новых торговых маршрутов, обеспечения стабильности экспортных доходов и повышения международной конкурентоспособности узбекской бахчевой продукции посредством диверсификации экспорта на рынки Европейского союза. В заключение представлены научно-практические рекомендации, направленные на расширение экспорта, развитие производства сортов продукции, пользующихся высоким спросом на европейских рынках, и расширение географии экспортных поставок.

Ключевые слова: бахчевые культуры, экспорт, диверсификация экспорта, рынок Европейского союза, международный рынок, индекс Херфиндаля–Хиршмана (HHI), концентрация рынка, регрессионный анализ, география экспорта, конкурентоспособность, экспортный потенциал, внешняя торговля.

INTRODUCTION

Today, growing global demand for agricultural products, the expansion of international trade relations, and increasing competition in export markets encourage countries to utilize their export potential effectively and diversify the geographical structure of their foreign trade. In particular, expanding exports of fruits, vegetables, and melon and gourd crops into new markets plays an important role in increasing export revenues, diversifying foreign market opportunities, and strengthening the international competitiveness of domestic producers.

Uzbekistan possesses significant export potential for melon and gourd crops due to its favorable natural and climatic conditions, extensive experience in cultivating these crops, and existing production capacity. Alongside increasing export volumes, expanding export geography, establishing new trade partnerships, and entering markets with strong demand remain important priorities. In this context, European Union markets represent a promising opportunity for diversifying Uzbekistan's exports of melon and gourd crops. Access to these markets requires consideration of factors such as product quality, food safety standards, logistics costs, and price competitiveness.

The Herfindahl–Hirschman Index (HHI) is an important analytical tool for the scientifically grounded assessment of export diversification. This index makes it possible to determine the degree of export concentration across destination countries and evaluate structural changes in export geography. Meanwhile, regression analysis helps identify the economic factors influencing the export volume of melon and gourd crops and assess the direction and magnitude of their effects. The combined application of these methods provides a quantitative basis for evaluating export diversification opportunities.

Accordingly, the aim of this study is to assess the prospects for diversifying Uzbekistan's exports of melon and gourd crops to European Union markets, determine the degree of export market concentration using the Herfindahl–Hirschman Index (HHI), and examine the factors influencing export volumes through regression analysis. The findings of the study will provide a basis for developing scientific and practical recommendations aimed at expanding export geography, entering new markets, and enhancing the competitiveness of Uzbekistan's melon and gourd products in European markets.

LITERATURE REVIEW

Issues related to export diversification and the assessment of market concentration have been extensively examined by international researchers. In particular, Abu Bakkar Siddique and J.P. Singh investigated agricultural export diversification in terms of both products and trading partners using a sample of 64 developing countries. Their findings demonstrated that expanding the range of export partners and product categories has a positive effect on export volumes. Furthermore, studies examining India's exports employed the Herfindahl–Hirschman Index (HHI) to assess the concentration of export markets and products, indicating that the diversification of trading partners contributes to greater resilience to external market risks.

Uzbek researchers U. Sheripbaeva, N. Dexkanova, and F. Galimova have analyzed the export potential, export composition, and geographical distribution of destination markets for Uzbekistan's fruit and vegetable products. Meanwhile, M. Qobilova, F. Usanova, and Sh. Muratov investigated the development trends and export geography of Uzbekistan's agricultural exports during 2022–2025. In addition, N.N. Eshqulova examined approaches to identifying promising foreign markets for agricultural exports through the analysis of export geography and the application of RCA and ARIMA models. Unlike these studies, the present article specifically assesses the diversification of Uzbekistan's melon and gourd exports to European Union markets using the Herfindahl–Hirschman Index (HHI) and regression analysis.

RESEARCH METHODOLOGY

The study assessed the degree of diversification of Uzbekistan's exports of melon and gourd crops to European Union markets using the Herfindahl–Hirschman Index (HHI). Regression analysis was employed to identify the factors influencing export volumes. In addition, statistical comparison and dynamic analysis methods were applied.

ANALYSIS AND RESULTS

When assessing the current state of Uzbekistan's exports of melon and gourd crops, it is essential to first examine the dynamics of production and exports. According to data from the National Statistics Committee, the production volume of melon and gourd crops in Uzbekistan has demonstrated a steady upward trend in recent years. Specifically, total production across all categories of farms increased from 2.36 million tonnes in 2021 to 2.84 million tonnes in 2024 (Table 1).

INTERNATIONAL SCIENTIFIC ELECTRONIC JOURNAL

Table 1
Dynamics of food and melon crop production in Uzbekistan

Year	Production, thousand tonnes
2021	2 364,0
2022	2 522,0
2023	2 680,5
2024	2 839,6

Source: Data from the National Statistics Committee of the Republic of Uzbekistan.

The table indicates a consistent increase in the production volume of melon and gourd crops. Although this trend reflects the expansion of the country's export potential, an increase in production volume does not necessarily lead to greater diversification of export markets. Therefore, the next stage of the analysis focuses on assessing the degree of concentration in the geographical distribution of exports.

Between January and July 2024, Uzbekistan exported 24.3 thousand tonnes of melons, with a total export value of USD 10.8 million. The majority of these exports were directed to the markets of Kyrgyzstan, Kazakhstan, and Russia. Latvia and Germany were also among the export destinations in the European market (Table 2).

Table 2
Main destinations for Uzbekistan's melon exports, January–July 2024

Export market	Volume, thousand tonnes	Share, %
Kyrgyzstan	7,2	29,63
Kazakhstan	6,2	25,51
Russia	5,9	24,28
Latvia	1,3	5,35
Germany	0,8	3,29
Other countries	2,9	11,94
Total	24,3	100,0

Source: Data from the National Statistics Committee of the Republic of Uzbekistan.

These data indicate that the majority of exports are concentrated in a limited number of traditional markets. In particular, the combined share of Kyrgyzstan, Kazakhstan, and Russia accounts for nearly 80% of total exports. This finding highlights the importance of diversifying export destinations, particularly by increasing the share of exports to European Union countries (Table 3).

Table 3
Interpretation of the HHI result

HHI value	Market concentration
Up to 1500	Low
1500–2500	Average
Over 2500	High

Source: Developed by the author based on the results of the research conducted.

To assess the degree of export market concentration, the Herfindahl–Hirschman Index (HHI) is calculated using the following formula:

where:
Si - the share of country (i) in total exports, expressed as a percentage;
n - the number of export destination countries.
HHI calculated using 2024 data:
$HHI=29,63^2+25,51^2+24,28^2+5,35^2+3,29^2+11,94^2$
$HHI\approx2366$

The calculations indicate an HHI of approximately 2,366 points, suggesting a moderate level of concentration in Uzbekistan's melon export markets. Thus, although the geographical distribution of exports is relatively broad, the concentration of a substantial share of export volumes in a limited number of countries highlights the importance of further strengthening export market diversification and resilience to external market risks.

A separate analysis of exports to the European Union indicates that, during the first seven months of 2024, Latvia and Germany accounted for a combined export volume of 2.1 thousand tonnes, representing approximately 8.6% of total melon exports.

$$D_{EU} = (Q_{EU} / Q_{total}) \times 100$$

where:

D_{EU} - the share of European Union countries in total exports;

Q_{EU} - the volume of products exported to European Union countries;

Q_{total} - the total export volume.

$D_{EU} = ((1,3 + 0,8) / 24,3) \times 100 = 8,6\ \%$

Result: European Union countries accounted for approximately 8.6% of Uzbekistan's total melon exports.

This figure indicates that the share of European Union markets in Uzbekistan's exports of melons and gourds remains relatively limited. At the same time, the presence of export flows to Latvia and Germany demonstrates the potential for further expanding the supply of these products to European markets.

Between January and June 2025, Uzbekistan exported 14,000 tonnes of melons. The list of export destinations included Russia, Kazakhstan, and Kyrgyzstan, as well as European countries such as Latvia, Germany, Belarus, and Lithuania (Table 4).

Table 4

Main destinations for melon exports in January–June 2025

Direction	Volume, thousand tonnes
Russia	5,6
Kazakhstan	4,0
Kyrgyzstan	3,0
Latvia	0,603
Ukraine	0,515
Germany	0,254
Belarus	0,249
Lithuania	0,153
Other countries	0,084

Source: Data from the National Statistics Committee of the Republic of Uzbekistan.

The table indicates an expansion of export routes to European markets. In particular, the inclusion of Latvia, Germany, Belarus, and Lithuania in the geographical distribution of exports demonstrates opportunities for supplying Uzbekistan's melon and gourd products to European markets. Therefore, further expansion of exports should be pursued not only through traditional markets but also by increasing access to other European Union countries.

Regression analysis can be employed to identify the factors influencing export diversification. In this study, the export volume of melon and gourd crops is used as the dependent variable:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon$$

where:

Y - export volume of melon and gourd crops;

X_1 - production volume of melon and gourd crops;

X_2 - number of export destination countries;

X_3 - average export value of products;

β_0 - constant term (intercept);

β_1, β_2, β_3 - regression coefficients representing the effects of the explanatory variables on export volume;

ε - random error term.

The logical structure of the model is as follows in Figure 1

INTERNATIONAL SCIENTIFIC ELECTRONIC JOURNAL



Figure 1. Analytical-conceptual model of diversification of export of polys products[1]

This approach demonstrates that an increase in production volume expands the supply base necessary for exports, while an increase in the number of destination countries reduces market concentration. Therefore, the coefficients X_1 and X_2 in the regression model are expected to be positive (Table 5).

Table 5
Summary of analysis results

Indicator	Result	Economic substance
Production of melon and gourd crops	Growth trend	Export potential is expanding.
Key export markets	Concentrated in several countries	Concentration is present
HHI	≈2366	Average concentration
European Union direction	Relatively small share	High potential for diversification
Number of European countries	Trend towards expansion	There is an opportunity to capture new markets

Source: Developed by the author based on the results of the research conducted.

Thus, the results of the analysis indicate that Uzbekistan possesses significant export potential for melon and gourd crops, while traditional markets continue to account for the largest share of its export geography. The HHI value highlights the importance of further diversifying export destinations. Meanwhile, the growing presence of European Union countries among export destinations suggests that these markets represent promising opportunities for diversifying Uzbekistan's exports of melon and gourd crops. In 2025, the export volume of melons and watermelons within the country's total fruit and vegetable exports increased, reaching 233.6 thousand tonnes by the end of the year.

CONCLUSIONS AND RECOMMENDATIONS

The research findings indicate that Uzbekistan possesses sufficient production and export potential to further develop exports of melon and gourd crops. However, the continued concentration of exports in traditional markets highlights the importance of expanding export destinations and strengthening resilience to external market risks. The analysis based on the Herfindahl–Hirschman Index (HHI) revealed a moderate level of market concentration, emphasizing the need for further export diversification.

1 Source: Developed by the author based on the results of the research conducted.

Existing exports to European Union countries demonstrate the availability of market opportunities for Uzbekistan's melon and gourd crops in the region. At the same time, increasing the market share of these products in Europe requires ensuring compliance with international product quality and safety standards, improving logistics systems, expanding export geography, and enhancing product competitiveness.

Based on the research findings, the following recommendations have been developed to diversify Uzbekistan's exports of melon and gourd crops to European Union markets (Table 6).

Table 6

Proposals for diversifying the export of Uzbek melon and gourd crops to European Union markets

№	Area of the proposal	Content of the proposal
1	Expanding the export geography	Diversifying export destinations by reducing reliance on traditional markets and accessing new markets in the European Union.
2	Improving product quality	Aligning produce with European market requirements regarding quality, safety, packaging, and certification.
3	Improving the logistics system	Reducing product losses by developing cooling, storage, sorting, and modern transportation systems.
4	Expanding the range of export-oriented products	Cultivating high-demand varieties and increasing the share of sorted and packaged products.
5	Strengthening market monitoring	Conducting regular monitoring of demand, prices, and import requirements in European Union countries.

Source: Developed by the author based on the results of the research conducted.

Implementing the proposals presented in the table will contribute to reducing export market concentration and expanding the geographical distribution of exports. Improving product quality, ensuring compliance with international standards, and strengthening logistics capabilities are key factors, particularly for gaining access to European Union markets. At the same time, increasing the number of export destinations will contribute to greater resilience to external market risks and enhance the stability of export revenues. These measures will establish a foundation for strengthening the international competitiveness of Uzbekistan's melon and gourd crops and effectively utilizing their export potential in European markets.

REFRENCES

1. Eshqulova N.N. Qishloq xo'jaligi mahsulotlari eksportini diversifikatsiya qilishning ustuvor yo'nalishlari // Agrobiznes, fan va texnologiyalar. – 2026. – Vol. 4, № 7.
2. O'zbekiston Respublikasi Milliy statistika qo'mitasi. O'zbekiston qariyb 11 mln AQSH dollariga teng qovun eksport qilgan [Elektron resurs]. – Toshkent, 2024. – 10 sentyabr. – URL: https://stat.uz/uz/matbuot-markazi/qo-mita-yangiliklar/56532-o-zbekiston-qariyb-11-mln-aqsh-dollariga-teng-qovun-eksport-qilgan.
3. O'zbekiston Respublikasi Milliy statistika qo'mitasi. O'zbekiston 17 ta davlatga qovun eksport qilgan [Elektron resurs]. – Toshkent, 2025. – 8 avgust. – URL: https://stat.uz/uz/matbuot-markazi/qo-mita-yangiliklar/63094-o-zbekiston-17-ta-davlatga-qovun-eksport-qilgan.
4. O'zbekiston Respublikasi Milliy statistika qo'mitasi. Qishloq xo'jaligi statistikasi: oziq-ovqat poliz mahsulotlari ishlab chiqarish ko'rsatkichlari [Elektron resurs]. – Toshkent, 2024. – URL: https://siat.stat.uz/data/339/?lang=en.
5. Porter M.E. The Competitive Advantage of Nations / M.E. Porter. – New York: Free Press, 1990.
6. Qobilova M.U. Analysis of agricultural export development trends and export geography in Uzbekistan / M.U. Qobilova, F.Z. Usanova, Sh.A. Muratov // Yashil iqtisodiyot va taraqqiyot. – 2026. – Vol. 4, № 7. – B. 504–507. – DOI: 10.5281/zenodo.21376824.
7. Ricardo D. On the Principles of Political Economy and Taxation / D. Ricardo. – London: John Murray, 1817.
8. Stephens A.R. The Central Asian Tiger: Export Specialization in Uzbekistan: Opportunities for Economic Diversification and Development / A.R. Stephens, Z. Tajekeev // The European Journal of Applied Economics. – 2023. – Vol. 20, № 1. – P. 22–38. – DOI: 10.5937/EJAE20-41446.
9. World Trade Organization. World Trade Statistics 2025. – Geneva: WTO, 2025.

Proofreader: Xondamir Ismoilov

Layout and Designer: Hasan Maqsudov

2026. № 10/2

© When materials are reproduced, the ECONOSCITECH-INTEGRATION journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

Our address: Tashkent city, Yunusobod district, 19th block, House 17.