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CONTENTS

RECONCEPTUALIZING HIGHER EDUCATION MARKETING IN THE ALGORITHMIC ERA: INSTITUTIONAL GENERATIVE AI AND MULTIDIMENSIONAL UNIVERSITY BRAND EQUITY	10
Nozima Zufarova	
DEVELOPMENT OF WAREHOUSE AND INVENTORY MANAGEMENT IN MANUFACTURING ENTERPRISES	16
Maxmidov Shirinboy Botirovich	
IMPROVING THE MECHANISM FOR ENHANCING THE POTENTIAL OF OIL AND GAS INDUSTRY ENTERPRISES IN UZBEKISTAN	25
Bekmuhamedova Malika Iskandarbekovna	
IMPROVING THE METHODOLOGY OF ARTIFICIAL INTELLIGENCE-BASED MARKETING DECISION-MAKING IN CONSTRUCTION MATERIALS MANUFACTURING ENTERPRISES	30
Uzakova Umida Ruzievna	
ORGANIZATIONAL AND ECONOMIC ASPECTS OF IMPROVING THE QUALITY OF DIGITAL SERVICES IN THE HIGHER EDUCATION SYSTEM	37
Berdiev Sunnatullo Alikulovich	
GLOBAL JUSTICE CODE AND GLOBAL JUSTICE INDEX: A CONCEPTUAL FRAMEWORK FOR GLOBAL GOVERNANCE AND SUSTAINABLE DEVELOPMENT	43
Alimov Nasimjon Hoshimovich	
IMPROVING THE MECHANISMS FOR MANAGING THE PROCESS OF DIVERSIFYING HOTEL SERVICES BASED ON INTERNATIONAL STANDARDS (USING THE FERGANA VALLEY AS AN EXAMPLE)	50
Sevarakhon Dehqonova Fatxitdin qizi	
DOES INVESTMENT SOURCE DIVERSIFICATION IMPROVE FARM PERFORMANCE? EVIDENCE FROM HORTICULTURAL PRODUCERS IN UZBEKISTAN	56
Jalilov Shohruh Zafar o'g'li	
SPECIFIC ASPECTS OF PREPARING AN AUDIT OPINION AND REPORT BASED ON ESG AUDIT RESULTS.....	65
Sayfullayev Mekhroj Sayfullayevich	
THE ROLE AND IMPORTANCE OF THE MULTIFACTOR DEVELOPMENT MODEL IN THE ECONOMIC DEVELOPMENT OF THE INDUSTRIAL SECTOR.....	70
Ne'matov Shokhruxbek Ma'murjon o'g'li	
IMPROVEMENT OF ACCOUNTING AND AUDITING OF ENVIRONMENTAL ACTIVITIES IN BUILDING MATERIALS INDUSTRY ENTERPRISES	75
Mirzaev Komiljon Abdullajonovich	
THEORETICAL EVOLUTION OF COMPETITIVENESS AND ISSUES OF THE TERRITORIAL COMPETITIVENESS OF SMALL BUSINESSES.....	82
Mamatkulova Kh. N.	
СОВРЕМЕННОЕ СОСТОЯНИЕ И АНАЛИЗ ЭКОНОМИЧЕСКОГО ПОТЕНЦИАЛА АО «УЗБЕКНЕФТЕГАЗ»	87
Бекмухамедова Малика Искандарбековна	
ОЦЕНКА ВЛИЯНИЯ ИННОВАЦИОННОЙ АКТИВНОСТИ НА РАЗВИТИЕ СОЦИАЛЬНОГО СЕКТОРА ЭКОНОМИКИ: ЭКОНОМЕТРИЧЕСКИЙ АНАЛИЗ.....	95
Холмуратов Жахонгир Салимбек ўғли	

FOREIGN EXPERIENCE IN SUPPORTING SMALL BUSINESS ENTITIES AND OPPORTUNITIES FOR ITS APPLICATION	104
Botir Baxtiyorovich Ganiyev	
STRATEGIES FOR THE DIVERSIFICATION OF INDUSTRIAL ENTERPRISES.....	108
Kalimullina Nargiza Vladimirovna	
CURRENT STATE AND CHALLENGES OF USING NATIONAL FASHION ELEMENTS IN UZBEKISTAN'S TOURISM MARKET	112
Yusupova Mokhinur Farkhod qizi	
IMPROVING THE ORGANIZATION, PLANNING, AND METHODOLOGICAL ASPECTS OF THE AUDIT OF BIOLOGICAL ASSETS	120
Akhmetova Salima Seytovna	
FACTORS DETERMINING THE DEVELOPMENT OF SMALL BUSINESS AND ENTREPRENEURSHIP	125
Imomnazarov Khurshid Ozodboevich	
SMART INCLUSIVE UNIVERSITY: A DIGITAL ECOSYSTEM MODEL FOR INCLUSIVE HIGHER EDUCATION.....	129
Kamola Makhkamova	
THEORETICAL FOUNDATIONS OF ORGANIZATIONAL AND ECONOMIC DEVELOPMENT OF THE FOOD INDUSTRY	137
Tleuov Nietulla Rakhmanovich	
SECTORAL ANALYSIS OF WATER RESOURCE USE EFFICIENCY UNDER CIRCULAR ECONOMY PRINCIPLES: EVIDENCE FROM UZBEKISTAN	143
Sotvoldiyeva Muslimaxon G'ayratjon qizi	
MECHANISMS FOR INCREASING THE IMPACT OF USING THE RESOURCES OF INTERNATIONAL FINANCIAL AND CREDIT INSTITUTIONS ON SUSTAINABLE ECONOMIC DEVELOPMENT	149
Qosimov Bobur Sobirovich	
IMPROVING ELECTRONIC SERVICES IN THE B2B AND B2G MARKET SEGMENTS OF THE REPUBLIC OF UZBEKISTAN	154
Otaboyev Nodirbek Oybek o'g'li	
MACROECONOMIC DETERMINANTS OF INDUSTRIAL DEVELOPMENT IN UZBEKISTAN: A TIME-SERIES ECONOMETRIC ANALYSIS AND SCENARIO FORECAST FOR 2026–2027	160
Khusniddin Nuriddin ugli Muydinov	
INSTITUTIONAL CHALLENGES AND DEVELOPMENT CONSTRAINTS IN SERVICE SECTOR MANAGEMENT	166
Dauletmuratov Adilbay Mirzabaevich	
ECONOMETRIC ANALYSIS OF THE FACTORS AFFECTING INTERBANK COMPETITION IN THE DIGITAL BANKING SERVICES MARKET	173
Karimov Odiljon Boqiyevich	
PRIORITY DIRECTIONS FOR ENHANCING FINANCIAL INCLUSION THROUGH INNOVATIVE BANKING SERVICES IN THE DIGITAL ECONOMY	185
Azlarova Aziza Axrorovna	
INTEGRATED INSTITUTIONAL MECHANISM OF FORMATION AND MANAGEMENT OF NATIONAL CRAFT CLUSTER.....	192
Yakhshilikov Sardor Rustam ugli	
IMPROVING THE METHODOLOGY OF PUBLIC AUDIT IN THE SYSTEM OF STATE FINANCIAL CONTROL.....	203
B. Sh. Mirzoyev	

PROSPECTS FOR THE DIGITAL TRANSFORMATION OF LOCAL GOVERNMENT AUTHORITIES	208
Achilova Furuza Kurbanovna	
Nurmurodov Zafarjon Nurmurod ugli	
A STUDY OF HOUSING STOCK MANAGEMENT ISSUES IN THE CONTEXT OF URBANIZATION BASED ON SWOT ANALYSIS.....	212
Mamanazarov Oybek Shomurodovich	
DETERMINING THE FORECAST PARAMETERS OF INDICATORS REPRESENTING AGRO-SERVICES AND THE POSSIBILITIES FOR POVERTY REDUCTION.....	217
Pardaev Mamayunus Karshibaevich	
Abilov Feruz Nematullaevich	
EVOLUTION OF PRODUCTION MANAGEMENT MODELS IN TEXTILE ENTERPRISES AND DIGITAL DIRECTIONS FOR IMPROVING EFFICIENCY.....	223
Kodirova Xurshida Ismoilovna	
DIRECTIONS FOR REDUCING POVERTY THROUGH THE USE OF DIGITAL TECHNOLOGIES IN THE SERVICE SECTOR	228
Saparov Murod Irgashovich	
FOREIGN EXPERIENCE IN HANDICRAFT MANAGEMENT AND OPPORTUNITIES FOR ITS APPLICATION IN UZBEKISTAN.....	233
Yakhshilikov Sardor Rustam Ugli	
REGIONAL INTERDEPENDENCIES AND CROSS-BORDER DYNAMICS: ASSESSING THE INFLUENCE OF NEIGHBOURING COUNTRIES ON THE DEVELOPMENT OF UZBEKISTAN'S TOURISM SECTOR	238
Khusniddin Egamnazarov	
THEORETICAL ISSUES OF DETERMINING THE QUALITY AND EFFICIENCY INDICATORS OF AGRO-SERVICES.....	246
Abilov Feruz Nematullaevich	
THE THREE-STEP INTERNAL QUALITY CONTROL MODEL FOR THE PREPARATION OF FINANCIAL STATEMENTS IN JOINT-STOCK COMPANIES IN ACCORDANCE WITH IFRS AND ITS IMPLEMENTATION MECHANISMS.....	251
Lutfullaev Sardorbek Utkur o'g'li	
CONCEPTUAL MODEL OF AN INTEGRATED ORGANIZATIONAL AND ECONOMIC MECHANISM FOR THE DEVELOPMENT OF RAILWAY INDUSTRIAL ENTERPRISES.....	260
Baymatov Atxam Axmadaliyevich	
INNOVATIVE MECHANISMS FOR THE STATISTICAL ASSESSMENT OF POPULATION QUALITY OF LIFE AND LIVING STANDARDS IN THE REPUBLIC OF UZBEKISTAN AND DIRECTIONS FOR THEIR IMPROVEMENT UNDER CONDITIONS OF SUSTAINABLE ECONOMIC GROWTH	266
Ostonaqulov Dilshod Ismatilla o'g'li	
THE IMPORTANCE OF CORPORATE CULTURE IN IMPROVING THE MANAGEMENT OF JOINT-STOCK COMPANIES	272
Nazokat Israilovna Akramova	
THE CURRENT STATE AND DEVELOPMENT PROSPECTS OF SPECIAL ECONOMIC ZONES IN UZBEKISTAN	280
Toshtemirova Malika Turg'un qizi	
IMPROVEMENT OF MECHANISMS FOR INCREASING THE EFFICIENCY OF FINANCIAL MANAGEMENT IN JOINT-STOCK COMPANIES.....	287
Abdubodiyev Muxammad Sharofitdinovich	
ANALYSIS OF THE CURRENT STATE AND ASSESSMENT MECHANISMS FOR THE DEVELOPMENT OF INTELLECTUAL AND TECHNOLOGICAL POTENTIAL IN THE KASHKADARYA REGION	294
Uralov Elshod Sirojiddin o'g'li	

IMPROVING MECHANISMS FOR CONTENT PLACEMENT AND MANAGEMENT BASED ON ARTIFICIAL INTELLIGENCE.....	303
Khujamatova Shakhlo Abdusalom qizi	
STATISTICAL MODEL FOR DETERMINING SAMPLE SIZE IN THE AUDIT OF BUDGETARY ORGANIZATIONS BASED ON AUDIT RISK, MATERIALITY, AND EXPECTED MISSTATEMENT	309
Jasur Bosimovich Muqumov	
ЭКСЕРГООЭКОНОМИЧЕСКАЯ И ЭКСЕРГООЭКОЛОГИЧЕСКАЯ ОЦЕНКА СОЛНЕЧНО-АККУМУЛЯТОРНОГО ХОЛОДОСНАБЖЕНИЯ ПРИ ДЛИТЕЛЬНОМ ХРАНЕНИИ ЯБЛОК	318
Мирзабаев Акрам Махкамович	
Матчанов Нураддин Азадович	
Кулматов Хайрулло Хабибуллаевич	
Шодиев Бобур Тоир угли	
THE ESSENCE, SIGNIFICANCE, AND IMPORTANCE OF THE INTERCONNECTIVITY BETWEEN CENTRAL AND SOUTH ASIA, AND UZBEKISTAN'S ROLE IN DEEPENING REGIONAL COOPERATION WITH SOUTH ASIA	330
Yuldashev Anvar Ergashevich	
INTERNATIONAL EXPERIENCE IN STATE SUPPORT FOR FOOD INDUSTRY ENTERPRISES AND ITS ADAPTATION TO THE CONDITIONS OF UZBEKISTAN.....	341
Mamatojjeva Sarvinoz Dilshodjon qizi	
ОСОБЕННОСТИ ЭКОЛОГИЧЕСКОГО ТУРИЗМА ТАШКЕНТСКОЙ ОБЛАСТИ КАК ОСНОВЫ ЕЁ УСТОЙЧИВОГО ЭКОНОМИЧЕСКОГО РАЗВИТИЯ	346
Ахмедходжаев Равшан Темурович	
THE ROLE OF FOREIGN TRADE IN SHAPING SUSTAINABLE REGIONAL DEVELOPMENT: EVIDENCE FROM THE REGIONS OF UZBEKISTAN	352
Dilnoza Ochilova Ismoil qizi	

THE ROLE OF FOREIGN TRADE IN SHAPING SUSTAINABLE REGIONAL DEVELOPMENT: EVIDENCE FROM THE REGIONS OF UZBEKISTAN

Dilnoza Ochilova Ismoil qizi

Lecturer, Department of Economics and Information Technologies,
Navoi Innovation University, Navoi, Republic of Uzbekistan

E-mail: dilnoz_noz@bk.ru

ORCID: 0009-0006-3892-9044

Abstract. This paper examines how the market theory of foreign trade—comparative advantage, factor endowments, and diversification-based new trade theory—helps explain the factors driving sustainable regional development across all fourteen administrative regions of Uzbekistan. Long-term statistical series covering 2015–2025 are used to trace the trajectory of the country's foreign trade turnover, exports, and imports, while a composite Foreign Trade Development Index is constructed using objectively derived coefficient-of-variation weights applied to three verifiable indicators: export volume, foreign trade turnover, and the export-to-import coverage ratio. The results show that Uzbekistan's foreign trade turnover expanded from approximately USD 33.8 billion in 2018 to a preliminary USD 81.2 billion in 2025, with exports more than doubling over the same period, while the export-to-import coverage ratio remained structurally below unity throughout the period. To assess how these national gains are distributed territorially, a Herfindahl–Hirschman-type Regional Trade Concentration Index (HHI) is calculated across all fourteen regions using official region-level foreign trade data for January–October 2023 and January–October 2024. The computed HHI remained essentially unchanged between the two periods—2,778 and 2,781, respectively, on a 10,000-point scale—placing Uzbekistan's regional foreign trade structure within the highly concentrated range. This concentration largely reflects the comparatively high share of Tashkent City, which alone accounts for approximately half of the nationally distributed regional turnover, while regions with relatively limited industrial and logistics capacity and stronger agricultural specialisation, such as Surkhandarya, Syrdarya, and the Republic of Karakalpakstan, each account for approximately one per cent or less. The findings support the market-theory proposition that comparative-advantage-led export growth is a necessary but insufficient condition for sustainable regional development. Complementary regional infrastructure, export diversification, and governance measures are therefore required across regions located farther from major trade and logistics hubs, rather than focusing on a single case region, to translate national growth in foreign trade activity into balanced territorial outcomes. Policy recommendations are proposed for strengthening regional export capacity, diversifying the geography of trade, and reducing both the persistent national trade deficit and the regional concentration of trade gains.

Keywords: foreign trade, market theory, comparative advantage, sustainable regional development, trade openness, composite index, regional concentration, Herfindahl–Hirschman Index, Uzbekistan, export diversification

Аннотация. В статье рассматривается, каким образом рыночная теория внешней торговли, включающая концепции сравнительных преимуществ, обеспеченности факторами производства и новую теорию торговли, основанную на диверсификации, позволяет объяснить факторы устойчивого регионального развития во всех четырнадцати административных регионах Узбекистана. Долгосрочные статистические ряды за 2015–2025 годы используются для анализа динамики внешнеторгового оборота, экспорта и импорта страны. Кроме того, разработан интегральный индекс развития внешней торговли с применением объективно рассчитанных весов на основе коэффициента вариации к трём проверяемым показателям: объёму экспорта, объёму внешнеторгового оборота и коэффициенту покрытия импорта экспортом. Результаты показывают, что внешнеторговый оборот Узбекистана увеличился приблизительно с 33,8 млрд долл. США в 2018 году до предварительных 81,2 млрд долл. США в 2025 году, при этом объём экспорта за тот же период вырос более чем в два раза. Вместе с тем коэффициент покрытия

импорта экспортом на протяжении всего рассматриваемого периода оставался устойчиво ниже единицы. Для оценки территориального распределения результатов роста внешней торговли рассчитан региональный индекс концентрации торговли типа Херфиндаля–Хиршмана (ННН) по всем четырнадцати регионам на основе официальных региональных данных о внешней торговле за январь–октябрь 2023 года и январь–октябрь 2024 года. Рассчитанные значения ННН практически не изменились между двумя периодами и составили соответственно 2 778 и 2 781 пункта по шкале от 0 до 10 000, что позволяет отнести региональную структуру внешней торговли Узбекистана к категории высокой концентрации. Такая концентрация во многом обусловлена сравнительно высокой долей города Ташкента, на который приходится около половины внешнеторгового оборота, распределяемого по регионам. В то же время на регионы с относительно ограниченными промышленными и логистическими возможностями и более выраженной сельскохозяйственной специализацией, включая Сурхандарьинскую, Сырдарьинскую области и Республику Каракалпакстан, приходится около одного процента или менее. Полученные результаты подтверждают положение рыночной теории о том, что рост экспорта, основанный на сравнительных преимуществах, является необходимым, но недостаточным условием устойчивого регионального развития. Для преобразования общенационального роста внешнеторговой активности в сбалансированные территориальные результаты необходимы дополнительные меры по развитию региональной инфраструктуры, диверсификации экспорта и совершенствованию управления в регионах, расположенных вдали от основных торговых и логистических центров, а не сосредоточение внимания только на одном отдельном регионе. Предложены рекомендации по укреплению регионального экспортного потенциала, диверсификации географии торговли, сокращению устойчивого дефицита внешней торговли и снижению региональной концентрации выгод от внешнеторговой деятельности.

Ключевые слова: внешняя торговля, рыночная теория, сравнительное преимущество, устойчивое региональное развитие, открытость торговли, интегральный индекс, региональная концентрация, индекс Херфиндаля–Хиршмана, Узбекистан, диверсификация экспорта

INTRODUCTION

Foreign trade has occupied a central place in economic theory since Adam Smith first argued that specialisation according to absolute advantage, followed by exchange, raises the wealth of all trading nations [1]. David Ricardo subsequently generalised this insight into the principle of comparative advantage, showing that mutually beneficial trade is possible even when one country holds no absolute advantage in any good, provided that relative opportunity costs differ across countries [2]. The Heckscher–Ohlin model later grounded these comparative-cost differences in relative factor endowments—capital, labour, and land—predicting that countries export goods that intensively use their abundant factors [3]. These classical and neoclassical propositions collectively constitute what this paper refers to as the market theory of foreign trade: the proposition that voluntary exchange across borders, guided by relative price signals, allocates resources towards their most productive uses and thereby raises aggregate and, potentially, regional welfare.

Uzbekistan's post-2017 economic reforms provide an instructive setting for examining whether these market-theoretic mechanisms translate into sustainable regional development outcomes across the country's territory. The liberalisation of the currency regime in September 2017, the reduction of administrative trade barriers, and the subsequent adoption of successive export-promotion decrees fundamentally altered the country's foreign trade trajectory: national foreign trade turnover, which stood at approximately USD 33.8 billion in 2018, more than doubled within seven years, reaching a preliminary USD 81.2 billion in 2025, according to the National Statistics Committee [15]. Yet the distribution of the resulting gains across Uzbekistan's fourteen administrative regions—Tashkent City, the Republic of Karakalpakstan, and the twelve regions of Andijan, Bukhara, Fergana, Jizzakh, Kashkadarya, Khorezm, Namangan, Navoi, Samarkand, Surkhandarya, Syrdarya, and Tashkent—has remained uneven. Tashkent City consistently accounts for close to half of the foreign trade turnover distributed by region, while several regions located farther from major trade and logistics hubs record shares at or below one per cent of the regionally distributed total [16].

This asymmetry raises a question of direct relevance to regional sustainable development policy: does market-theory-consistent trade liberalisation, operating through national comparative advantage, automatically diffuse its benefits across Uzbekistan's regions, or does it require a complementary set of regional policies—including infrastructure development, export diversification support, and institutional capacity—to convert growth in national foreign trade activity into balanced territorial development? The specific objectives of this paper are: (i) to review the market-theoretic foundations linking foreign trade to regional development; (ii) to construct a transparent, objectively weighted composite index summarising Uzbekistan's national foreign trade

performance using verifiable long-term statistics; (iii) to trace the dynamics of national foreign trade turnover, exports, and imports over the 2015–2025 period; (iv) to construct and interpret a Herfindahl–Hirschman-type Regional Trade Concentration Index across all fourteen administrative regions of Uzbekistan, illustrating how unevenly national trade integration has been absorbed at the regional level; and (v) to develop evidence-based recommendations for aligning foreign trade policy with sustainable and balanced regional development objectives.

LITERATURE REVIEW

2.1 Classical and Neoclassical Foundations of Foreign Trade Market Theory

Smith's account of the gains from specialisation and Ricardo's principle of comparative advantage remain the analytical starting point for any market-theoretic treatment of foreign trade [1], [2]. The Heckscher–Ohlin framework extended this logic by linking comparative-cost differences to relative factor abundance, generating the testable prediction that capital-abundant economies export capital-intensive goods, while labour- and land-abundant economies export labour- and land-intensive goods [3]. Leontief's empirical challenge to this prediction—the so-called Leontief paradox, in which United States imports were found to be more capital-intensive than its exports—demonstrated that factor-proportions theory alone cannot fully explain observed trade patterns and opened the door to richer, multifactor and technology-based explanations of comparative advantage [4]. Applied at the subnational level, the same logic implies that regions within a single country, endowed differently with capital, labour, land, and infrastructure, may realise systematically different shares of the gains from national trade liberalisation—a proposition examined empirically in Section 4.5 of this paper.

2.2 New Trade Theory and Competitive Advantage

Krugman's new trade theory addressed a further empirical anomaly—the large volume of trade between similar, factor-abundance-comparable economies—by showing that increasing returns to scale and monopolistic competition generate mutually beneficial trade in differentiated varieties even in the absence of comparative-cost differences [5]. This diversification-based rationale for trade is particularly relevant to transition economies such as Uzbekistan, where a central policy objective is to move beyond exports with a substantial commodity component—cotton, natural gas, and gold—towards a more diversified export basket capable of generating broader-based regional employment and value addition [6]. Porter's competitive advantage framework complements this perspective by emphasising that national and regional competitiveness in international markets is shaped not only by factor endowments but also by the interaction of factor conditions, demand conditions, related and supporting industries, and firm rivalry—a framework increasingly applied to analyse the export capacity of individual regions across Central Asia [7].

2.3 Foreign Trade and Regional Sustainable Development

A distinct but related body of literature examines how foreign trade openness translates into regional, rather than purely national, development outcomes. The product-space methodology developed by Hausmann and Klinger models the diversification opportunities available to an economy as a function of the capabilities embedded in its existing export basket, arguing that countries and regions diversify most successfully into products that are technologically 'nearby' their current specialisation [8]. Applied to Uzbekistan, this framework has been used to argue that the geographic and product diversification of exports—rather than deepening reliance on a narrow set of commodities—is the more sustainable path to regional development across the country's diverse regional economies, particularly for regions distant from the capital and reliant on primary-sector production [10]. Trend-model applications to individual Uzbek regions' foreign trade turnover reinforce the value of a systematic, replicable regional methodology that can, in principle, be extended across all of the country's regions rather than confined to a single case [11].

2.4 Measurement Approaches to Trade–Development Linkages

Composite indicator methodologies provide a pragmatic tool for summarising multidimensional trade performance into a single, policy-relevant metric. The OECD Handbook on Constructing Composite Indicators sets out a rigorous sequence of indicator selection, normalisation, weighting, and aggregation and explicitly endorses objective, data-driven weighting methods—including variance- and entropy-based approaches—as an alternative to subjective, expert-elicited weights in settings where a transparent, fully reproducible index is required [9]. This paper adopts that objective-weighting tradition for its national-level composite index, using coefficient-of-variation weighting computed directly from the observed variability of each indicator across the reference period. To capture the spatial dimension of trade performance across all regions simultaneously, this paper additionally draws on the Herfindahl–Hirschman Index (HHI), a well-established concentration measure computed as the sum of the squared percentage shares of the units under study, conventionally classified into competitive (below 1,500), moderately concentrated (1,500–2,500), and highly concentrated (above 2,500) ranges [19]. Although originally developed to assess market concentration among competing firms, the same

additive, share-based logic applies directly to assessing the concentration of foreign trade turnover across a country's administrative regions and is used for that purpose in Sections 3.7 and 4.5 below.

2.5 Research Gap

Three gaps in the existing literature motivate this study. First, while Uzbekistan's aggregate foreign trade dynamics since the 2017 liberalisation are well documented in official statistical releases, a systematic academic synthesis of the full 2015–2025 trajectory within an explicit market-theory framework remains limited. Second, the regional distribution of the gains from national trade liberalisation—as distinct from the national aggregate and assessed across the full set of fourteen administrative regions rather than through a single illustrative case—has received comparatively little quantitative attention, despite its direct relevance to the objectives of balanced territorial development set out in the updated Uzbekistan–2030 Strategy, approved by Presidential Decree No. PF-21 of 16 February 2026 [17]. Third, existing composite-index applications to Uzbek trade performance have generally relied either on purely descriptive statistics or on subjectively weighted frameworks, while a nationwide HHI-based regional concentration measure applied consistently across all of Uzbekistan's regions has not, to the author's knowledge, previously been constructed. The present study addresses all three gaps.

RESEARCH METHODOLOGY

3.1 Data Sources and Study Period

The empirical analysis draws on official annual and quarterly foreign trade press releases of the State Statistics Committee (Statistics Agency) of the Republic of Uzbekistan for the years 2018–2025 [15], supplemented by the Committee's region-by-region foreign trade press releases for January–October 2023 and January–October 2024, which report foreign trade turnover, exports, and imports separately for all fourteen administrative regions of the country [16], and contextualised against international statistical compendia, including the World Trade Organization's World Trade Statistical Review [12], the World Bank's Uzbekistan Economic Update [13], and the UNCTAD Trade and Development Report [14]. Reported figures for national foreign trade turnover and exports and imports of goods and services are used throughout in current United States dollars, consistent with the reporting convention of the National Statistics Committee. Where an official year-end figure had not yet been finalised at the time of writing (2025), the most recent preliminary official release is used and explicitly flagged as such. The 2022 full-year turnover, export, and import figures were not available in a single confirmed official release at the time of writing and were therefore derived from the officially reported year-on-year growth rates for 2023 relative to 2022; these derived values are flagged in Table 6. Regional figures reported by the Statistics Committee explicitly exclude natural gas and electricity supplies, tourism (travel) services, and special exports, none of which are distributed among individual regions in the official release; this is reflected in a residual 'non-distributed' component in the regional tables in Section 4.5.

3.2 Indicator Selection and System Design

Three indicators were retained for the national-level weighted composite index on the basis of three criteria: theoretical relevance to market-theory mechanisms of trade-led development, availability of a consistent, officially verifiable annual time series for the full 2018–2025 reference period, and non-redundancy. Table 1 sets out the formal definitions.

Table 1.

Indicator System for the Foreign Trade Development Index¹

Code	Indicator	Unit	Direction	Theoretical Basis
x_1	Export volume	Bln USD	Positive	Realised comparative advantage; Ricardian/Heckscher–Ohlin core metric
x_2	Foreign trade turnover	Bln USD	Positive	Depth of market integration; new-trade-theory gains from exchange
x_3	Export/import coverage ratio	Ratio	Positive	External balance sustainability; long-run viability of trade-led growth

¹ Source: Compiled by the author based on foreign trade theory literature [1]–[5] and data availability from the State Statistics Committee [15].

3.3 Maximum-Value Normalisation Procedure

Raw indicator values are normalised to the interval [0, 1] using maximum-value normalisation relative to the 2018–2025 reference sample.

$$K_i = X_i / X_{\max}$$

where K_i is the normalised value of indicator i for the reference (assessment) year, X_i is the observed value for that year, and $X_{\max}$ is the maximum value of indicator i across the 2018–2025 sample. All three retained indicators are positively oriented, so no inversion is required.

3.4 Weight Coefficient Derivation

Weights were derived objectively using coefficient-of-variation (CV) weighting, a standard data-driven alternative to subjective expert elicitation recommended for settings that require full reproducibility from official statistics [9]. For each indicator, the coefficient of variation was computed as the ratio of its standard deviation to its mean across the eight years from 2018 to 2025, and weights were obtained by normalising these coefficients so that they summed to one:

$$w_i = CV_i / \sum_j CV_j$$

Indicators exhibiting greater relative variability over the reference period receive proportionately greater weight, on the reasoning that more volatile indicators carry more discriminating information about year-to-year performance. Table 2 reports the computed weights.

Table 2.

Coefficient-of-Variation Weights for the Foreign Trade Development Index, 2018–2025²

Code	Indicator	Mean	Std. Dev.	CV	Weight w_i
x_1	Export volume (bln USD)	21.09	6.34	0.301	0.459
x_2	Trade turnover (bln USD)	51.83	15.54	0.300	0.458
x_3	Export/import ratio	0.690	0.037	0.054	0.083

3.5 Integral Foreign Trade Development Index

The integral index is the weighted sum of normalised indicator values:

$$I = \sum_i w_i \cdot K_i$$

The index ranges from 0 to 1. A five-tier classification scale, analogous to those used in composite trade- and cluster-performance indices [9], is applied to support interpretation (Section 4.3).

3.6 Dynamic Analysis

The dynamic analysis of national foreign trade performance over 2015–2025 employs standard descriptive time-series statistics—absolute year-on-year growth, growth indices, and the export-to-import coverage ratio—computed for foreign trade turnover, exports, and imports to characterise the trajectory of Uzbekistan's trade integration under the post-2017 liberalisation programme and to identify structural turning points relevant to regional development policy.

3.7 Regional Trade Concentration Index (HHI)

To assess how evenly national foreign trade gains are distributed across Uzbekistan's fourteen administrative regions, this paper computes a Regional Trade Concentration Index using the Herfindahl–Hirschman formula:

$$HHI = \sum_i s_i^2$$

where s_i is region i 's percentage share of the portion of national foreign trade turnover that the Statistics Committee distributes among regions, excluding natural gas, electricity, tourism services, and special exports,

² Source: Computed by the author from official foreign trade statistics for 2018–2025 [15] (see Table 6).

which are not regionally attributed. The index was computed separately for January–October 2023 and January–October 2024—the two most recent comparable periods for which a consistent, officially published regional breakdown covering all fourteen regions is available—using the classification thresholds set out in Section 2.4: below 1,500 (competitive/dispersed), 1,500–2,500 (moderately concentrated), and above 2,500 (highly concentrated) [19].

ANALYSIS AND RESULTS

4.1 Long-Term Dynamics of Uzbekistan's Foreign Trade, 2015–2025

Uzbekistan's exports of goods and services stood at approximately USD 13.2 billion in 2015, prior to the 2017 currency and trade liberalisation [11]. Table 6 (Section 4.4) presents the fully verifiable official annual series from 2018—the earliest year for which a complete, internally consistent turnover/export/import breakdown is available from a single official release—through the preliminary 2025 outturn. Over this eight-year window, foreign trade turnover expanded from USD 33.82 billion to a preliminary USD 81.2 billion, exports grew from USD 14.26 billion to USD 33.8 billion, and the number of countries with which Uzbekistan maintains active trade relations rose from 178 in 2019 to 210 in late 2025 [15]. Table 3 summarises the structural composition of Uzbekistan's foreign trade for the most recently completed reference year, 2024.

Table 3.
Structural Characteristics of Uzbekistan's Foreign Trade, 2024³

Indicator	Value	Unit
Foreign trade turnover	65.9	bln USD
Exports	26.95	bln USD
Imports	38.98	bln USD
Trade balance	–12.03	bln USD
Trading partner countries	198	countries
CIS countries' share of turnover	35.1	%
Non-CIS (rest-of-world) share	64.9	%
Leading partner (China)	18.9	% of turnover

4.2 Normalised Indicator Scores and the Integral Index, 2024

Table 4 presents the normalised values, weights, and weighted scores for the reference year 2024, computed relative to the best-performing year in the 2018–2025 sample (2025 for x_1 and x_2 ; 2019 for x_3).

Table 4.
Integral Foreign Trade Development Index, Reference Year 2024⁴

Code	Indicator	Norm. Value K_i	Weight w_i	Weighted Score $w_i \cdot K_i$
x_1	Export volume	0.798	0.459	0.366
x_2	Trade turnover	0.812	0.458	0.372
x_3	Export/import ratio	0.938	0.083	0.078
			$\Sigma =$	0.816

Applying the formula in Section 3.5:

$$I_{2024} = 0.459 \cdot 0.798 + 0.458 \cdot 0.812 + 0.083 \cdot 0.938 = 0.816.$$

This value places 2024 in the high-integration tier of the eight-year reference sample (Table 5), driven predominantly by strong turnover and export growth momentum rather than by improvement in the export-to-import coverage ratio, which—while the strongest-performing of the three normalised indicators—carries the smallest weight owing to its comparatively low year-to-year variability.

³ Source: State Statistics Committee of the Republic of Uzbekistan, annual foreign trade press release, 2024 [15].

⁴ Source: Computed by the author from Table 6 data.

4.3 Classification Scale

Table 5.

Classification Scale for the Integral Foreign Trade Development Index⁵

Tier	Index Range	Level	Interpretation
1	0.00–0.19	Very Low	Marginal integration into world markets; structural trade weakness
2	0.20–0.39	Low	Limited trade dynamism; narrow export base
3	0.40–0.59	Medium	Moderate integration; uneven performance across sub-indicators
4	0.60–0.79	Advancing	Sustained turnover and export growth; balance concerns persist
5	0.80–1.00	High Integration	Strong, broad-based trade dynamism approaching sample-best performance

4.4 Growth Rate Analysis, 2018–2025

Table 6 reports the full underlying annual series, while Table 7 presents the corresponding year-on-year growth rates.

Table 6.

Foreign Trade Turnover, Exports, and Imports of the Republic of Uzbekistan, 2018–2025 (bln USD)⁶

Year	Turnover	Exports	Imports	Balance	Export/Import Ratio
2018	33.82	14.26	19.56	–5.30	0.729
2019	42.20*	17.90	24.30	–6.40	0.737
2020	36.29	15.12	21.17	–6.05	0.714
2021	42.10	16.60	25.50	–8.90	0.651
2022	50.50†	19.70†	30.70†	–11.00†	0.641
2023	62.60	24.40	38.10	–13.70	0.640
2024	65.90	26.95	38.98	–12.03	0.691
2025‡	81.20	33.80	47.40	–13.60	0.713

* Investment and Foreign Trade Ministry figure; the State Statistics Committee's own preliminary release for the same year reported turnover of USD 41.75 billion. † 2022 figures derived from officially reported 2023 year-on-year growth rates in the absence of a single confirmed full-year 2022 release. ‡ 2025 figures are preliminary (National Statistics Committee, provisional annual data).

The growth-rate series reveals three notable patterns. First, the only year of contraction across the entire 2018–2025 period was 2020, when turnover fell by 14.0 per cent, exports by 15.5 per cent, and imports by 12.9 per cent—a downturn attributable to global pandemic-related disruptions to trade logistics and demand rather than to a reversal of domestic liberalisation policy. Second, the recovery from 2021 onwards was rapid and sustained, with turnover growth exceeding 16 per cent in every year except 2024, when growth moderated to 5.3 per cent, even as export growth remained comparatively strong at 10.5 per cent—a divergence explained by the deceleration of import growth to 2.3 per cent that year. Third, the export-to-import coverage ratio, while consistently below unity throughout the period, indicating a persistent structural trade deficit, the financing structure of which requires separate analysis, followed a U-shaped pattern: it declined from 0.737 in 2019 to a low of 0.640 in 2023 before recovering to 0.713 by 2025, suggesting a gradual but still incomplete rebalancing of the external accounts.

⁵ Source: Developed by the author based on composite indicator literature [9].

⁶ Source: State Statistics Committee (Statistics Agency) of the Republic of Uzbekistan, annual foreign trade press releases, 2018–2025.

Table 7.
Year-on-Year Growth of Foreign Trade Turnover, 2019–2025⁷

Year	Turnover Growth (%)	Export Growth (%)	Import Growth (%)
2019	+24.8	+25.5	+24.2
2020	–14.0	–15.5	–12.9
2021	+16.0	+9.8	+20.5
2022	+20.0†	+18.7†	+20.4†
2023	+24.0	+23.9	+24.1
2024	+5.3	+10.5	+2.3
2025‡	+23.2	+25.4	+21.6

4.5 Regional Dimension: Disparities Across Uzbekistan's Fourteen Administrative Regions

National-level growth in foreign trade activity has not been matched by proportional diffusion across Uzbekistan's regions. Table 8 reports official foreign trade turnover for Uzbekistan's fourteen administrative regions—Tashkent City, the Republic of Karakalpakstan, and the twelve regions of Andijan, Bukhara, Fergana, Jizzakh, Kashkadarya, Khorezm, Namangan, Navoi, Samarkand, Surkhandarya, Syrdarya, and Tashkent—for January–October 2023 and January–October 2024, together with each region's percentage share of the regionally distributed total.

Table 8.
Foreign Trade Turnover by Region of Uzbekistan, January–October
2023 and January–October 2024 (mln USD and %)⁸

Region	Jan–Oct 2023 (mln USD)	Share 2023 (%)	Jan–Oct 2024 (mln USD)	Share 2024 (%)	Rank 2024
Tashkent city	19,313.4	49.31	20,910.2	49.66	1
Tashkent region	4,708.4	12.02	5,037.3	11.96	2
Andijan	4,057.7	10.36	3,392.8	8.06	3
Samarkand	2,285.7	5.84	2,505.0	5.95	4
Fergana	1,643.2	4.20	1,813.0	4.31	5
Jizzakh	1,201.0	3.07	1,672.5	3.97	6
Navoi	1,143.0	2.92	1,353.2	3.21	7
Bukhara	990.6	2.53	1,141.2	2.71	8
Kashkadarya	554.8	1.42	1,079.5	2.56	9
Namangan	1,120.2	2.86	1,068.9	2.54	10
Khorezm	752.2	1.92	728.5	1.73	11
Rep. of Karakalpakstan	421.8	1.08	549.2	1.30	12
Syrdarya	708.4	1.81	525.8	1.25	13
Surkhandarya	265.5	0.68	323.7	0.77	14
Distributed total	39,165.9	100.00	42,100.8	100.00	—

⁷ Source: Computed by the author from Table 6. † Based on derived 2022 figures. ‡ Preliminary.

⁸ Source: Computed by the author from State Statistics Committee (Statistics Agency) of the Republic of Uzbekistan, regional foreign trade press releases, January–October 2023 and January–October 2024 [16]. Figures exclude natural gas, electricity, tourism services, and special exports, which are not distributed among regions in the official release; the distributed total is accordingly smaller than the corresponding national aggregate reported in Table 6.

Applying the formula in Section 3.7 to the percentage shares in Table 8 yields $HHI_{2023} = 2,778$ and $HHI_{2024} = 2,781$. Both values fall within the highly concentrated range and remained essentially unchanged between the two periods, indicating that the modest 0.35-percentage-point increase in Tashkent City's share was not accompanied by broader convergence among the remaining thirteen regions. Full-year 2024 headline data corroborate this cross-sectional picture: Tashkent City accounted for 38.4 per cent of total national foreign trade turnover (USD 25.33 billion, including the non-distributed component) and 50.8 per cent of national imports (USD 19.81 billion), while Surkhandarya recorded the smallest regional share of imports, at 0.4 per cent (USD 146.6 million), and Jizzakh recorded the smallest regional share of exports, at 0.8 per cent (USD 208.1 million) [20]. Tashkent Region, Andijan, and Samarkand were the only other regions whose shares exceeded five per cent of the regionally distributed turnover in 2024.

This cross-regional evidence illustrates a central tension in the market-theory account of trade-led development: national comparative advantage, realised in aggregate statistics, does not necessarily result in proportionate regional participation. Regions endowed primarily with agricultural land and labour—Surkhandarya, Syrdarya, Jizzakh, and, to a lesser extent, Namangan and Khorezm—realise a correspondingly narrower share of the gains from national trade liberalisation than Tashkent City and Tashkent Region, which concentrate capital, logistics infrastructure, processing capacity, and administrative proximity to the wholesale and re-export functions that channel a disproportionate share of national trade flows. Andijan's comparatively strong performance, driven by automotive and machine-building exports, and Navoi's rising share, driven by gold, chemical, and mineral-processing exports, indicate that resource- and industry-specific comparative advantages can improve a region's relative position even without Tashkent-level infrastructure—a pattern consistent with Heckscher–Ohlin-type factor-endowment logic operating at the subnational as well as the national level [3].

5.1 Interpreting Market-Theory Mechanisms in the Uzbek Context

The 2018–2025 trajectory documented in Table 6 is broadly consistent with the market-theoretic prediction that removing administrative and currency-market distortions to trade releases latent comparative advantage: turnover growth accelerated sharply immediately after the 2017 liberalisation and remained in double digits in five of the subsequent seven years. At the same time, the persistently sub-unity export-to-import coverage ratio indicates that Uzbekistan's trade expansion has been import-led as much as export-led, consistent with an economy that continues to import the capital goods, machinery, and intermediate inputs—accounting for over a third of import value in most years [15]—required to build the productive capacity that comparative-advantage theory predicts will eventually be reflected in a more diversified, higher-value export base.

5.2 Regional Disparities and Sustainable Development Implications

The nationwide HHI results presented in Section 4.5 suggest that the benefits of foreign trade, although substantial at the national level, are distributed across Uzbekistan's fourteen regions through differences in infrastructure, processing capacity, and market access—factors that classical comparative-advantage theory, formulated primarily at the national level, does not directly address. From the perspective of sustainable regional development, trade liberalisation may therefore be insufficient without complementary measures. These measures should include transport and logistics links connecting regions located farther from major trade hubs to export markets, the development of processing and value-addition capacity closer to primary production centres, and targeted support for improving the export readiness of regional small and medium-sized enterprises. Such measures are particularly relevant to Surkhandarya, Syrdarya, Jizzakh, Khorezm, Namangan, the Republic of Karakalpakstan, and other regions with relatively smaller shares of foreign trade turnover. They would help translate national comparative advantage into more balanced regional outcomes, in line with the diversification principles of new trade theory [5], [8]. The near-identical HHI values recorded in 2023 and 2024 further indicate that additional targeted regional development measures may be required to reduce the concentration of foreign trade activity over time.

5.3 Comparison with International Experience

Uzbekistan's turnover-to-GDP trajectory and its persistent trade deficit are broadly typical of transition and developing economies in the early-to-middle phase of trade liberalisation, where import growth associated with capital formation and industrial modernisation temporarily outpaces export growth before a more diversified export base matures [12], [14]. The World Bank estimated Uzbekistan's trade deficit at approximately 17 per cent of GDP in 2023, a level broadly comparable to those of other resource-exporting Central Asian and Caucasus economies undergoing similar structural transitions [13]. The gradual narrowing of the deficit and improvement in the export-to-import coverage ratio observed between 2023 and 2025 are consistent with this expected trajectory, although the persistence of gold as a leading export category—accounting for over a quarter of goods exports in 2024 [15]—indicates that full diversification, in the sense intended by new trade

theory, remains a work in progress. The regional concentration levels identified here—an HHI in the high 2,700s across fourteen regions—are also broadly comparable to the capital-city-dominated trade geographies observed in other transition economies, where a single metropolitan hub concentrates logistics, customs, and re-export functions [12], [14].

5.4 Methodological Limitations

Several limitations warrant acknowledgement. First, the coefficient-of-variation weighting scheme used for the national composite index, while fully objective and reproducible, is sensitive to the choice of reference period; extending or shortening the 2018–2025 window would alter both the normalisation base and the computed weights. Second, the three retained national indicators, while theoretically grounded and fully verifiable, do not capture all dimensions of trade-led regional development—export product diversification, the employment intensity of traded sectors, and regional value addition are notable omissions attributable to the unavailability of a consistent annual regional time series for the full period. Third, the 2022 figures in Table 6 are derived rather than directly observed, and the 2025 figures remain preliminary pending final confirmation by the National Statistics Committee; both are clearly flagged, but future revisions to official statistics could marginally alter the computed index. Fourth, the Regional Trade Concentration Index in Section 4.5 is currently constructed from only two comparable ten-month periods (January–October 2023 and January–October 2024), since a single official release providing a consistent, full-year, all-region breakdown across the entire 2015–2025 period is not available. The regional analysis is therefore presented as a robust two-period cross-section rather than a full eleven-year regional time series, and extending it to a longer annual panel across all fourteen regions is identified as a priority for future research.

CONCLUSION AND SUGGESTIONS

This study examined the market theory of foreign trade as an explanatory and policy framework for the factors of sustainable regional development across the whole of Uzbekistan, using verifiable official statistics spanning 2015–2025. Uzbekistan's foreign trade turnover expanded from an estimated range of USD 24–34 billion in the late 2010s to a preliminary USD 81.2 billion in 2025, with exports growing correspondingly from roughly USD 13–14 billion to USD 33.8 billion. An objectively weighted composite Foreign Trade Development Index, computed without recourse to subjective expert judgement, placed 2024 in the high-integration tier of the 2018–2025 reference sample, driven by turnover and export momentum rather than by trade-balance improvement. To the author's knowledge, this study presents one of the first nationwide applications of a Regional Trade Concentration Index across all fourteen administrative regions of Uzbekistan for two comparable periods. The results show that national foreign trade growth has been distributed unevenly across regions, with HHI values remaining within the highly concentrated range—2,778 in 2023 and 2,781 in 2024. This concentration largely reflects the comparatively high share of Tashkent City and, to a lesser extent, Tashkent Region and Andijan, while predominantly agrarian regions and those located farther from major trade and logistics hubs, including Surkhandarya, Syrdarya, Jizzakh, and the Republic of Karakalpakstan, continue to account for relatively small shares of national trade activity.

Four evidence-based recommendations follow from these findings:

- Nationwide regional export infrastructure: Prioritise investment in logistics corridors and border-crossing capacity linking regions with relatively smaller shares of foreign trade turnover to priority export markets, thereby reducing additional transport and logistics costs that currently limit their participation in the growth of national foreign trade activity.

- Export diversification support: Extend product-space-informed diversification programmes [8] to small and medium-sized enterprises across the full range of Uzbekistan's regions, targeting adjacent, technologically reachable export categories rather than deepening reliance on primary commodities, while drawing on Andijan's machine-building and Navoi's mineral-processing experience as domestic models for other regions.

- Import substitution in capital goods: Given the persistent sub-unity export-to-import coverage ratio, continue targeted support for the domestic production of intermediate and capital goods that are currently imported in order to narrow the trade deficit without constraining the capital formation needed for further export growth in all regions.

- Regional trade statistics development: Strengthen the consistency and annual continuity of region-by-region foreign trade reporting for all fourteen regions, enabling the future construction of a fully continuous, multi-year Regional Trade Concentration Index comparable in rigour to the national Foreign Trade Development Index presented here.

The methodology developed in this study—combining a market-theory-grounded national indicator system, transparent maximum-value normalisation, objective coefficient-of-variation weighting, a five-tier classification scale, and a nationwide Herfindahl–Hirschman-based Regional Trade Concentration Index—provides a

replicable framework for assessing foreign-trade-led regional development across all regions of other transition economies. Its extension to a longer, fully continuous regional panel represents a natural and valuable direction for future research.

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