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INTEGRATING TERRITORIAL MARKETING AND SECTORAL SPECIALIZATION: A HUDMI–LQ MIXED MODEL FOR BUKHARA REGION

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Abstract

This article develops and applies a HUDMI–LQ Mixed Model to assess territorial marketing performance and sectoral specialization in Bukhara Region, Uzbekistan. The model integrates the Territorial Marketing Efficiency Index (HUDMI) with Location Quotient, delta LQ, and CAGR indicators. HUDMI Core measures the structural economic base, while HUDMI Extended adds digital marketing and branding dimensions. Median thresholds classify districts into four strategic quadrants. Results reveal strong interdistrict asymmetry: several territories combine high marketing performance with strong specialization, while others show mismatches between economic capacity and marketing visibility. The model provides an operational basis for differentiated regional marketing and development policy design.

Keywords

territorial marketing, HUDMI, location quotient, mixed model, regional competitiveness, Bukhara Region, Uzbekistan

In contemporary regional economics, territories compete not only through natural resources, industrial capacity, and infrastructure, but also through visibility, branding, strategic communication, and the ability to convert specialization into sustainable market outcomes. This makes territorial marketing an increasingly important analytical and policy category. However, many applied studies still assess territorial marketing separately from sectoral specialization, which reduces the practical value of regional diagnostics. A territory may appear attractive from a marketing perspective while lacking a solid economic base, or may possess strong production capacity but remain poorly represented in communication and branding terms.

This contradiction is especially visible in internally differentiated regions such as Bukhara Region, where districts vary significantly in industrial structure, services, entrepreneurship, digital visibility, and territorial identity. Under such

conditions, a uniform regional marketing strategy is methodologically weak. A differentiated approach is needed, linking territorial marketing potential with actual specialization patterns and their dynamics.

The purpose of this article is to develop and test a HUDMI–LQ Mixed Model for the territorial typology of Bukhara Region. The model combines the Territorial Marketing Efficiency Index (HUDMI), which measures economic and communication based territorial marketing capacity, with a specialization block including Location Quotient, delta LQ, and CAGR. This integration makes it possible to move from static rankings to strategy oriented diagnosis.

The article argues that territorial marketing should be evaluated not only through resources or visibility, but also through the extent to which these factors are translated into resilient specialization trajectories. In this sense, the HUDMI–LQ Mixed Model provides a stronger basis for differentiated regional policy than index benchmarking or specialization analysis used separately.

The theoretical foundation of this study draws from three interrelated streams of scholarship.

First, territorial and place marketing literature conceptualizes territories as complex products addressed to multiple stakeholder groups, including investors, residents, tourists, and business actors. Kotler, Haider, and Rein framed places as competitive entities whose value proposition depends on strategic positioning, infrastructure, communication, and institutional coordination. Ashworth and Voogd further emphasized that territorial marketing differs from product marketing because the "product" is a multidimensional socio spatial system rather than a discrete commodity. Kavaratzis later expanded this line of inquiry by linking city marketing to city branding and stressing the communicative construction of territorial identity.

Second, cluster and specialization theory highlights the importance of sectoral concentration and dynamic competitive advantage. Porter's work on clusters showed that territorial development depends not only on the presence of industries, but on dense specialization, upgrading capacity, and supportive institutional environments. This logic later informed smart specialization approaches, in which regions are encouraged to identify and strengthen their distinctive competitive domains rather than imitate generic development models.

Third, composite indicator methodology provides a way to integrate heterogeneous data into analytically useful frameworks. OECD guidelines on composite indicators stress transparency in normalization, weighting, and aggregation, while also warning against the misuse of synthetic indices detached

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from real structural processes. This caution is especially relevant in regional diagnostics, where a high composite score may conceal stagnation in key sectors.

The present study contributes to these debates by integrating territorial marketing measurement and specialization dynamics into a single model. Rather than treating branding and digital visibility as separate from economic structure, the HUDMI–LQ framework interprets them as interdependent dimensions of territorial competitiveness.

The empirical basis of the study is the district level dataset of Bukhara Region. The model is organized in two layers.

The first layer is HUDMI Core, which measures the structural economic base of territorial marketing. It is calculated as the arithmetic mean of normalized indicators for investment, employment, SME activity, and trade:

$$HUDMI\ Core = (Inv + Emp + SME + Trade) / 4$$

The second layer is HUDMI Extended, which broadens the model by incorporating digital marketing and territorial branding indicators for 2024:

$$HUDMI\ Extended = (Inv + Emp + SME + Trade + RM + BR) / 6$$

All variables are standardized through min–max normalization:

$$x' = (x - xmin) / (xmax - xmin)$$

This allows the comparison of indicators with different original scales. The use of min–max normalization follows common practice in composite indicator construction and preserves relative interterritorial differences.

The digital marketing subindex reflects website presence, updating frequency, and social media activity. The branding subindex captures the existence of a territorial brand, identity instruments such as logo or slogan, and the market recognizability of territorial products and services. In methodological terms, HUDMI Core captures the economic foundation of territorial competitiveness, while HUDMI Extended captures the communication and visibility layer.

For district typology, the model uses median based thresholds, which are methodologically preferable in a highly heterogeneous regional sample because they are less sensitive to outliers than arithmetic means. The empirical medians for 2024 are:

$$HUDMI\ Core\ median = 0.1634$$

$$HUDMI\ Extended\ median = 0.4863$$

On this basis, four quadrants are identified:

Quadrant I: high Core and high Extended

Quadrant II: low Core and high Extended

Quadrant III: low Core and low Extended

Quadrant IV: high Core and low Extended

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The second component of the model is the specialization block, which uses Location Quotient (LQ), delta LQ, and CAGR. LQ values above 1 indicate specialization relative to the broader regional structure. Delta LQ and CAGR reveal whether specialization is strengthening, emerging, or declining. The integration of these metrics with HUDMI enables triangulation: the model identifies not only where a territory stands in marketing terms, but whether its sectoral profile is actually moving in a sustainable direction.

The empirical results confirm that Bukhara Region is strongly differentiated in both economic base and territorial marketing visibility. The district positions derived from the HUDMI Core and HUDMI Extended matrix are presented in Table 1.

Table-1

District positions in the HUDMI Core–Extended matrix, 2024

District	HUDMI Core	HUDMI Extended	Quadrant	Strategic implication
Bukhara city	0.5024	0.8333	I	Scaling, export repositioning, service upgrading
Kogon city	0.2160	0.3220	IV	Institutional reform and marketing infrastructure strengthening
Olot	0.0796	0.1498	III	Basic digital transformation and market access building
Bukhara district	0.1416	0.2772	III	Basic digital transformation and economic activation
Vobkent	0.0791	0.4863	II	Diversification and economic base strengthening
Gijduvan	0.1634	0.6174	I	Scaling and competitive specialization support
Kogon district	0.2084	0.6328	I	Scaling and export oriented consolidation
Karakul	0.1707	0.5169	I	Scaling and cluster deepening
Qorovulbozor	0.9867	0.7856	I	Strategic scaling based on strong structural base
Peshku	0.1032	0.3910	III	Digital visibility and business support activation
Romitan	0.2055	0.5251	I	Scaling with service portfolio adjustment
Jondor	0.0885	0.4862	III	Communication and institutional base expansion

The table shows that the leading group is not limited to the regional capital. Along with Bukhara city, the first quadrant includes Gijduvan, Kogon district, Karakul, Qorovulbozor, and Romitan. This is an important empirical result because

it demonstrates that leadership in territorial marketing is not exclusively an urban center effect. Certain peripheral districts also perform strongly when structural and communication layers are considered together.

At the same time, the mixed model reveals an essential methodological point: a strong HUDMI position does not automatically imply positive specialization dynamics. Bukhara city is the clearest example. Its HUDMI Core and Extended values place it in Quadrant I, and its services sector has a high LQ of 1.868. However, the dynamic component is negative: delta LQ equals minus 0.734 and CAGR equals minus 0.1046, which indicates a declining specialization trajectory. In policy terms, this means that territorial marketing in Bukhara city cannot rely on prestige, visibility, or inherited leadership alone. It requires service modernization, repositioning, and renewal of market channels.

Kogon city represents a different diagnostic pattern. Its Core value is relatively high at 0.2160, but its Extended score is only 0.3220, placing it in Quadrant IV. This is a classic case of a territory with economic potential but underdeveloped marketing infrastructure. Yet the LQ block shows a selective strength: in small business related industry, Kogon city records an LQ of 3.068, delta LQ of 1.701, and CAGR of 0.3093, indicating a stable and strongly specialized activity. The policy implication is clear. The problem is not the absence of economic substance, but the weak communication and institutional layer needed to convert specialization into a broader territorial marketing effect. In such cases, the appropriate response is not generic support, but institutional and promotional upgrading.

Bukhara district illustrates a third configuration. With Core equal to 0.1416 and Extended equal to 0.2772, it falls into Quadrant III. Its agriculture LQ reaches 1.233, which indicates specialization, but both delta LQ and CAGR are negative, at minus 0.307 and minus 0.0714 respectively. Thus, the district is not unspecialized, but its specialization is weakening. This is precisely why the mixed model is analytically stronger than either HUDMI or LQ alone. A pure index approach would classify the district as weak; a pure LQ approach would still recognize agricultural specialization. The mixed model explains the contradiction: specialization exists, but both the marketing layer and the dynamic trajectory are fragile.

Vobkent, the only district in Quadrant II, deserves special attention. Its Core score is below the regional median, while its Extended score reaches the threshold of 0.4863. This indicates relatively stronger communication and visibility than structural economic capacity. In practical terms, such territories may already possess a recognizable image or digital presence, but lack the production, logistics, or entrepreneurial scale needed to transform visibility into sustainable growth. The

appropriate strategy is diversification and reinforcement of the economic base rather than further communication spending alone.

The lagging group, consisting of Olot, Bukhara district, Peshku, Jondor, and Shofirkon, reflects a dual deficit. These territories are weak both in structural capacity and in marketing visibility. Their problem is not simply low branding, nor merely insufficient specialization. Rather, they face what may be called a foundational territorial marketing gap. For these districts, the article supports a gradual policy package focused on minimum digital representation, territorial content creation, entrepreneurial support, and market access channels. The priority is to establish the preconditions for later specialization based growth.

From a broader methodological perspective, the value of the HUDMI–LQ Mixed Model lies in its ability to convert diagnostic information into differentiated policy packages. Quadrant I territories require scaling and export oriented refinement. Quadrant II territories need diversification and base strengthening. Quadrant III territories require foundational digital and institutional support. Quadrant IV territories demand targeted institutional reform and marketing infrastructure development. Because these packages are linked to actual specialization signals, they are more precise than standard regional rankings.

Thus, the model contributes not only to territorial marketing theory but also to regional governance practice. It offers a framework in which place marketing, smart specialization, and composite diagnostics are not parallel tools, but integrated elements of territorial strategy.

This article has presented a HUDMI–LQ Mixed Model for assessing and typologizing territories in Bukhara Region. The model addresses a major analytical gap in territorial marketing studies by linking composite territorial marketing measurement with dynamic sectoral specialization analysis.

The empirical results demonstrate three main conclusions. First, Bukhara Region is highly heterogeneous, and median based segmentation provides a stable way to classify districts under such conditions. Second, strong territorial marketing positions do not always coincide with positive specialization dynamics, as shown by the case of Bukhara city. Third, the combination of HUDMI with LQ, delta LQ, and CAGR allows territorial policy to move from descriptive benchmarking to differentiated strategic intervention.

The scientific contribution of the article lies in integrating economic, communication, digital, and branding indicators with specialization dynamics in one operational framework. The practical contribution lies in producing a quadrant based policy logic for regional authorities: scaling for leaders, diversification for communication strong but economically weaker territories, foundational support

for lagging territories, and institutional repair for economically stronger but communicatively weaker ones.

In this sense, the HUDMI–LQ Mixed Model should be viewed not simply as a ranking mechanism, but as a decision support instrument for territorial marketing governance. It is especially relevant for regions marked by internal asymmetry, where uniform development policy fails to reflect the real combination of structural capacity, visibility, and specialization dynamics.

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