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EVALUATING THE COMPETITIVENESS OF MANUFACTURING ENTERPRISES BASED ON PRODUCT ASSORTMENT DYNAMICS AND PROFITABILITY (EVIDENCE FROM NAMANGAN REGION)

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Abstract – *Manufacturing enterprises across emerging transition economies increasingly diversify their product assortment to withstand volatile demand and intensifying global competition, yet conventional competitiveness evaluation methods still assess product quality or financial performance in isolation, leaving the dynamic interaction between market share, internal sales-portfolio structure, and comparative profitability largely unexamined. This study addresses that research gap by developing and empirically testing an integrated composite methodology for evaluating multi-product manufacturing competitiveness in the Namangan region of Uzbekistan. The methodology combines a product-level quality-to-price competitiveness ratio, a weighted multi-criteria enterprise coefficient incorporating production efficiency, financial stability, and sales effectiveness, and an integral competitiveness index that jointly accounts for each product's external market share and its internal share of total enterprise sales volume, alongside a dynamic growth-rate coefficient and industry-relative profitability benchmarking. The framework was applied empirically to two enterprises: "Namangan Ta'mirlash va Butlash" LLC, a furniture manufacturer, and "BEK TEKSTIL SERVIS" LLC, an apparel producer. Results show that reallocating sales volume toward higher-share products raised the furniture enterprise's integral competitiveness index from 0.0724 to 0.1798, a 148.3 percent increase, while the apparel enterprise's integral index expanded steadily from 0.0680 in 2021 to 0.1607 in 2025 despite operating profitability remaining consistently below the national industrial average throughout the period. These empirical findings demonstrate that portfolio-weighted market positioning, rather than mechanical averaging of market shares, more accurately captures competitive dynamics across product lines. The study offers managers and investors a replicable, quantitative decision-support tool for assortment rationalization, pricing strategy, and performance benchmarking in regional manufacturing enterprises.*

Keywords: *enterprise competitiveness, product assortment dynamics, integral competitiveness index, manufacturing profitability, price-quality ratio, market share analysis, textile industry, furniture manufacturing, Namangan region, operational performance*

INTRODUCTION

Global manufacturing has entered a period of sustained volatility in which demand structures shift rapidly across product categories, input costs fluctuate under external shocks, and buyers reward firms able to reconfigure their output mix faster than competitors. Under these conditions, product portfolio diversification has become a strategic buffer rather than an operational afterthought: enterprises that produce and sell several related products simultaneously can redistribute sales effort toward whichever items retain market traction, cushioning the firm against the collapse of demand for any single line. Yet the analytical tools most widely used to evaluate enterprise competitiveness have not kept pace with this shift. Classical approaches still evaluate either the technical and price

characteristics of an individual product or the aggregate financial condition of the enterprise, and rarely the two together, and almost never in a form that captures how a firm's internal sales-portfolio structure interacts with the external market position of each product it sells. The result is a persistent measurement gap: a multi-product manufacturer's true competitive standing cannot be read off from its market share alone, because market share ignores how much of the firm's own revenue depends on the product concerned, nor from its profitability alone, because profitability does not reveal whether growth is being driven by genuinely high-margin, high-demand items or by mechanical volume expansion.

This measurement gap is especially consequential in transitional and regionally concentrated industrial economies, where enterprises frequently combine several unrelated product lines under one roof out of necessity rather than strategic design. Uzbekistan's manufacturing landscape illustrates the pattern clearly. The Fergana Valley, and the Namangan region within it, has experienced rapid industrialization over the past decade, anchored by light manufacturing clusters in textiles, apparel, and furniture production that supply both domestic and export markets. Enterprises operating in this cluster typically manage assortments of three to six distinct product lines, each subject to its own price-quality positioning and its own trajectory of market share, while the firm as a whole is judged by investors and regulators primarily on aggregate profitability. Existing evaluation practice in this setting tends to fall into one of two traps: either it reduces competitiveness to a single product's characteristics, ignoring the enterprise's overall commercial structure, or it reduces competitiveness to enterprise-level financial ratios that say nothing about which products are actually driving the firm's market position.

The central problem this study addresses, therefore, is that traditional evaluation methods assess product quality or enterprise finance in isolation, ignoring the dynamic interaction between individual product market share, internal product-portfolio share, and relative industrial profitability benchmarks. Without an integrated framework, managers cannot distinguish between an enterprise whose growing market presence is being driven by disciplined reallocation toward strong products and one whose apparent growth is a statistical artifact of mechanical averaging across a fixed, undifferentiated product set.

The research aim is to develop and empirically validate a composite methodology for evaluating the competitiveness of multi-product manufacturing enterprises that simultaneously incorporates product-level price-quality positioning, weighted multi-criteria enterprise performance, and the dynamic interaction between external market share and internal sales-portfolio share. The specific objectives are: first, to formalize a product competitiveness ratio linking quality tier to relative price level; second, to construct a weighted multi-criteria composite coefficient integrating production efficiency, financial stability, sales effectiveness, and product competitiveness; third, to derive an integral competitiveness index that aggregates product-level market and portfolio shares into a single enterprise-level measure and to track its dynamics over time; and fourth, to benchmark enterprise profitability against national industry averages to contextualize the integral index. The object of study is the population of multi-product manufacturing enterprises of the Namangan region, and the subject of study is the methodological mechanism linking product-level assortment dynamics and sector-comparative profitability to composite enterprise competitiveness.

Two hypotheses guide the empirical work. H1 states that enterprise-wide competitiveness is driven predominantly by high-margin, high-portfolio-weight product positions rather than by mechanical aggregation of market shares across the full product line. H2 states that enterprises sustaining above-average growth in their internal sales-portfolio concentration on strong products can expand their integral market power even while operating below sectorwide profitability benchmarks and amid sectorwide cost inflation. The scientific novelty of the study lies in combining, within a single operational framework, a product-level quality-price ratio, a four-component weighted enterprise coefficient, and a market-share-times-portfolio-share integral index, and in applying this combined framework empirically to two manufacturing enterprises from the Namangan region — one in furniture production and one in apparel manufacturing — across multi-year panels, an

integration that has not previously been documented for this regional industrial context. The remainder of the paper proceeds as follows: the literature review situates the proposed framework within the theoretical and empirical traditions of competitiveness measurement; the methodology section formalizes each component of the model; the analysis and results section applies the framework to the two case enterprises; the discussion interprets the findings against the stated hypotheses and international literature; and the conclusion summarizes the study's practical and scientific contribution.

LITERATURE REVIEW

The conceptual starting point for most competitiveness research remains Porter's framework of competitive advantage, which locates a firm's performance in the interaction between industry structure and the firm's chosen generic strategy — cost leadership, differentiation, or focus. Porter's contribution established that competitiveness cannot be evaluated as a static financial snapshot; it must be understood relative to rivals operating within the same competitive forces. This relative, comparative logic underlies the industry-benchmarking component adopted in the present study. A complementary perspective is offered by the resource-based view (RBV), which locates competitive advantage in the firm's bundle of valuable, rare, and difficult-to-imitate internal resources and capabilities rather than in external industry structure alone. Where Porter directs attention outward to market position, the RBV directs attention inward to the firm's production efficiency, financial stability, and organizational routines — precisely the categories captured in this study's production-efficiency and financial-stability sub-indices. Within the post-Soviet and Central Asian academic tradition, Fatkhutdinov's systemic criteria for enterprise competitiveness extended these ideas into an explicitly multi-criteria and quantifiable direction, proposing that competitiveness be assessed as a composite of production, financial, marketing, and product-quality indicators weighted according to their relative contribution to overall performance. This systemic tradition is the direct methodological ancestor of the weighted coefficient model applied here, and it explains why the present framework assigns explicit numerical weights to production efficiency, financial stability, and sales effectiveness rather than treating them as an unweighted checklist.

A second stream of literature has concentrated on the measurement problem at the product level rather than the firm level. Price-quality trade-off models treat a product's competitiveness as a function of the ratio between the value a buyer receives and the price charged, an approach with intuitive appeal because it reflects how buyers actually compare substitute goods, but with the limitation that it says little about how a portfolio of differently positioned products contributes to overall enterprise standing. The Boston Consulting Group growth-share matrix and its various extensions attempted to bridge this gap by classifying products according to relative market share and market growth rate, implicitly recognizing that a firm's competitiveness depends on the composition of its product portfolio rather than on any single product in isolation; however, the classic matrix does not incorporate a quantitative index that can be tracked over time or compared across firms of different sizes. Multi-criteria weighted evaluation methods, of the kind formalized by Fatkhutdinov and extended by subsequent industrial-economics researchers, attempted to resolve this by aggregating several performance dimensions into a single coefficient, but in their standard form these methods typically evaluate the enterprise as a whole and do not disaggregate the contribution of individual products to that aggregate score. The methodological literature therefore contains, on one side, refined product-level metrics that cannot be aggregated into a coherent firm-level picture, and on the other side, refined firm-level metrics that cannot be traced back to the specific products driving them.

A third relevant stream examines profitability benchmarking as an indirect proxy for competitiveness, particularly in contexts where market-share data at the product level is difficult to obtain. Comparative profitability analysis — assessing a firm's operating margin against the sectoral average — offers the advantage of relying on data that firms routinely disclose, and it correctly identifies that a firm's rentability must be interpreted relative to conditions facing the whole sector

rather than in absolute terms, since sectorwide shocks such as input-cost or tariff inflation depress every firm's margin simultaneously without necessarily eroding any individual firm's relative competitive position. Studies of emerging manufacturing markets, including several examining Central Asian and post-Soviet transition economies, have documented that local firms frequently operate at profitability levels below the national industrial average for extended periods while nonetheless expanding output and market presence, a pattern usually attributed to reinvestment strategies, deliberate low-margin market-entry pricing, or capacity-expansion phases that depress short-run profitability without indicating weakening competitiveness. This literature is valuable in showing that profitability position relative to a sector benchmark is informative, but on its own it cannot distinguish between a firm whose below-average profitability reflects genuine competitive weakness and one whose below-average profitability coexists with a rapidly strengthening product-market position.

Taken together, these three streams leave an identifiable gap. The theoretical literature establishes that competitiveness should be evaluated as a weighted, multi-dimensional construct incorporating both external market position and internal resource efficiency, but stops short of specifying how product-level market dynamics should be mathematically combined with firm-level financial indicators. The product-level literature offers a workable quality-price ratio and a portfolio-classification logic but no integral index that can be summed across products and tracked longitudinally. The profitability-benchmarking literature offers a sound comparative logic but treats profitability as a self-contained measure disconnected from product-portfolio structure. No existing framework, to the authors' knowledge, integrates a product quality-price tier ratio (RT = S/N), a market-share-versus-portfolio-share coefficient of the IRAQ type, and industry-relative operating profitability within a single operational model applicable to regional transition-economy manufacturing enterprises managing multiple, structurally different product lines. This absence is particularly notable given that Central Asian manufacturing enterprises, including those examined in this study, routinely combine several structurally unrelated product lines under common management, a configuration for which none of the three literatures reviewed above was originally designed. The present study is designed to close precisely this gap by synthesizing the strongest elements of each stream: the weighted, multi-dimensional logic of the systemic tradition, the aggregable product-level ratio of the price-quality literature, and the comparative discipline of sectoral profitability benchmarking.

METHODOLOGY

The study adopted a quantitative, model-based research design combining formula-derived competitiveness indices with a longitudinal case comparison of two manufacturing enterprises located in the Namangan region of Uzbekistan: "Namangan Ta'mirlash va Butlash" LLC, producing educational, medical, and kitchen furniture, and "BEK TEKSTIL SERVIS" LLC, producing men's jackets, men's suits, men's shirts, and women's dresses. Enterprise-level production, sales, and profitability data were obtained directly from internal enterprise records for the periods 2022–2024 (furniture enterprise) and 2021–2025 (apparel enterprise), while sectoral profitability benchmarks for 2021–2025 were sourced from the State Statistics Committee of the Republic of Uzbekistan.

The evaluation proceeded through four analytical stages, each formalized mathematically so that the procedure is reproducible by other researchers using comparable enterprise data.

First, product-level competitiveness was measured using a quality-to-price ratio:

$$RT = S / N$$

where S denotes the product's quality tier, coded as 1.00 for top (Grade I) quality, 0.75 for Grade II, and 0.50 for Grade III, and N denotes the product's price level relative to the market, coded as 1.00 for high, 0.75 for medium, and 0.50 for low. The resulting ratio was interpreted using five bands: RT = 2.00 (ultra-strong competitiveness), RT = 1.33 (strong), RT = 1.00 (balanced equilibrium), RT = 0.75 (low), and RT = 0.50 (critically low).

Second, an enterprise-level composite competitiveness coefficient (Krk) was calculated as a weighted arithmetic combination of four sub-indices:

$$Krk = 0.15 \cdot Ek + 0.29 \cdot Mk + 0.23 \cdot Es + 0.33 \cdot Rt$$

where Ek is production efficiency, Mk is financial stability, Es is sales-distribution efficiency, and Rt is the product-competitiveness ratio described above. Each sub-index was itself computed as a weighted combination of underlying relative indicators, derived from standard enterprise accounting and production data:

$$Ek = 0.31 \cdot I + 0.19 \cdot F + 0.40 \cdot RT + 0.10 \cdot P$$

where I is the relative unit-cost indicator, F is the relative capital (fixed-asset) turnover indicator, RT is the relative return-on-product indicator, and P is the relative labor-productivity indicator.

$$Mk = 0.29 \cdot Km + 0.20 \cdot Kt + 0.36 \cdot KL + 0.15 \cdot KO$$

where Km is the relative financial-autonomy indicator, Kt is the relative solvency indicator, KL is the relative liquidity indicator, and KO is the relative working-capital turnover indicator.

$$Es = 0.37 \cdot Rk + 0.29 \cdot KZ + 0.21 \cdot Kq + 0.14 \cdot Kr$$

where Rk is the relative sales-profitability indicator, KZ is the relative finished-goods-surplus (inventory) indicator, Kq is the relative production-capacity-utilization indicator, and Kr is the relative sales-promotion and advertising-effectiveness indicator. The weighting coefficients in all three sub-index formulas and in the top-level Krk formula reflect the relative contribution of each underlying criterion to overall enterprise competitiveness, following the systemic multi-criteria tradition described in the literature review.

Third, product-level and enterprise-level integral competitiveness indices were calculated. For each product, the integral index (IRAQ_T) was defined as the product of the item's external market share (ΔTr) and its share within the enterprise's own total sales volume (ΔTv):

$$IRAQ\_T = \Delta Tr \times \Delta Tv$$

The enterprise-level integral index (IRAQ_K) was then obtained by summing the integral indices of all products in the enterprise's assortment:

$$IRAQ\_K = \Sigma\, IRAQ\_T(i), \text{ for } i = 1 \text{ to } n$$

This multiplicative-then-additive structure was deliberately chosen over a simple arithmetic mean of market shares, because a mean treats every product as equally important to the enterprise regardless of how much of the firm's revenue it actually generates, whereas the IRAQ construction weights each product's external market position by its internal economic significance to the firm.

Fourth, the dynamic competitiveness growth-rate coefficient (KRAQD) was computed to capture period-on-period change in the enterprise integral index:

$$KRAQD = [IRAQ\_K(t) - IRAQ\_K(t-1)] / IRAQ\_K(t-1)$$

Finally, comparative industrial profitability benchmarking was performed by comparing each enterprise's own profitability ratio (R), computed as net profit divided by production cost, against the corresponding national industry-wide average profitability ratio (RO) for the manufacturing sector, for each year from 2021 to 2025. All formulas were applied consistently to both case enterprises using their respective reported data, and results were organized into structured tables to allow direct comparison between the mechanical-average approach criticized in the literature and the proposed weighted integral approach. Data triangulation was performed by cross-checking enterprise-reported production volumes and sales-share figures against internal accounting ledgers for the corresponding fiscal years, and sectoral profitability benchmarks were verified against the published statistical bulletins of the State Statistics Committee to ensure consistency of measurement units (percentage-based profitability ratios calculated as net profit over production cost) across both the enterprise and sector levels of analysis.

ANALYSIS AND RESULTS

Table 1 summarizes the mathematical structure and weighting coefficients of the multi-criteria composite competitiveness model applied throughout the analysis.

Table 1.

Mathematical Formulas and Weight Coefficients for the Multi-Criteria Enterprise Competitiveness Model

Coefficient	Formula	Components (weights)
Krk – Composite enterprise competitiveness	Krk = 0.15·Ek + 0.29·Mk + 0.23·Es + 0.33·Rt	Ek (0.15), Mk (0.29), Es (0.23), Rt (0.33)
Ek – Production efficiency	Ek = 0.31·I + 0.19·F + 0.40·RT + 0.10·P	Unit cost I (0.31), asset turnover F (0.19), return on product RT (0.40), labor productivity P (0.10)
Mk – Financial stability	Mk = 0.29·Km + 0.20·Kt + 0.36·KL + 0.15·KO	Autonomy Km (0.29), solvency Kt (0.20), liquidity KL (0.36), working-capital turnover KO (0.15)
Es – Sales/market distribution efficiency	Es = 0.37·Rk + 0.29·KZ + 0.21·Kq + 0.14·Kr	Sales profitability Rk (0.37), inventory surplus KZ (0.29), capacity utilization Kq (0.21), advertising effectiveness Kr (0.14)
Rt – Product competitiveness ratio	RT = S / N	Quality tier S (Grade I=1.00, II=0.75, III=0.50); price level N (High=1.00, Medium=0.75, Low=0.50)

This enterprise produces three furniture product lines — educational furniture (Product A), medical furniture (Product B), and kitchen furniture (Product C) — with reported production values across 2022–2024 confirming continuous output across all three lines. Under the initial market conditions, Product A held a 10 percent external market share while accounting for 30 percent of the enterprise's own sales volume; Product B held a 20 percent market share and 20 percent internal sales share; Product C held a 3 percent market share and 8 percent internal sales share. Applying the integral index formula to these initial conditions produced IRAQ_T(A) = 0.10 × 0.30 = 0.0300, IRAQ_T(B) = 0.20 × 0.20 = 0.0400, and IRAQ_T(C) = 0.03 × 0.08 = 0.0024, summing to an initial enterprise integral index of IRAQ_K = 0.0724. By comparison, the mechanical arithmetic mean of the three products' market shares alone — (0.10 + 0.20 + 0.03) / 3 — yields 0.11, a figure that disregards each product's weight within the firm's own sales structure and therefore misstates the enterprise's actual competitive position.

Over the subsequent period, market shares shifted markedly: Product A's market share rose from 10 percent to 25 percent, Product B's rose from 20 percent to 50 percent, and Product C's rose from 3 percent to 6 percent, while internal sales-portfolio shares remained at 30 percent, 20 percent, and 8 percent respectively. **Table 2** presents these production and market-share dynamics in full.

Table 2.

Production Volume and Multi-Product Market-to-Portfolio Share Dynamics in "Namangan Ta'mirlash va Butlash" LLC (2022–2024)

Product	Production 2022 (soum)	Production 2023 (soum)	Production 2024 (soum)	Market share, baseline (%)	Internal sales share, baseline (%)	Market share, updated (%)	Internal sales share, updated (%)
A – Educational furniture	5 787 011 958	4 987 854 624	4 687 321 654	10	30	25	30
B – Medical furniture	83 685 500	63 564 584	75 658 542	20	20	50	20
C – Kitchen furniture	203 282 625	186 683 534	198 356 564	3	8	6	8

Recalculating the integral indices under the updated market shares gives IRAQ_T(A) = 0.25 × 0.30 = 0.0750, IRAQ_T(B) = 0.50 × 0.20 = 0.1000, and IRAQ_T(C) = 0.06 × 0.08 = 0.0048, summing to a final enterprise integral index of IRAQ_K = 0.1798. Applying the dynamic growth-rate formula to these two values yields KRAQD = (0.1798 − 0.0724) / 0.0724 = 1.483, indicating a 148.3 percent increase in the enterprise's integral competitiveness over the period studied. For comparison, the equivalent mechanical mean of the updated market shares — (0.25 + 0.50 + 0.06) / 3 — produces 0.27, a value that again ignores internal portfolio structure and would overstate the pace and character of the enterprise's competitive improvement relative to the weighted method.

This apparel manufacturer, operating since 2013, produces four garment lines: men's jackets, men's suits, men's shirts, and women's dresses. Market-share and internal sales-share data were available for five years, 2021 through 2025, permitting a full longitudinal application of the integral index and dynamic growth-rate formulas. **Table 3** presents the complete year-by-year calculation.

Table 3.

Longitudinal Calculation of Integral Product and Enterprise Competitiveness (IRAQ_T, IRAQ_K, KRAQD) for "BEK TEKSTIL SERVIS" LLC (2021–2025)

Product	Indicator	2021	2022	2023	2024	2025
Men's jackets	ΔTr / ΔTv (%)	1 / 15	2 / 18	11 / 18	3 / 20	4 / 20
	IRAQ_T	0.0015	0.0032	0.0033	0.0072	0.0095
Men's suits	ΔTr / ΔTv (%)	3 / 15	3 / 13	3 / 16	3 / 17	3 / 17
	IRAQ_T	0.0225	0.0182	0.0272	0.0391	0.0480
Men's shirts	ΔTr / ΔTv (%)	10 / 21	19 / 18	23 / 20	25 / 19	28 / 16
	IRAQ_T	0.0420	0.0342	0.0460	0.0475	0.0368
Women's dresses	ΔTr / ΔTv (%)	2 / 10	3 / 11	3 / 11	3 / 10	4 / 12
	IRAQ_T	0.0272	0.0399	0.0384	0.0522	0.0630
Enterprise	IRAQ_K	0.0680	0.1210	0.1382	0.1466	0.1607
Enterprise	KRAQD	—	0.7794	0.1421	0.0608	0.0962

The enterprise's integral competitiveness index expanded from IRAQ_K = 0.0680 in 2021 to 0.1210 in 2022, 0.1382 in 2023, 0.1466 in 2024, and 0.1607 in 2025 — a sustained upward trajectory across all five years. The corresponding dynamic growth-rate coefficients were KRAQD = 0.7794 for 2021–2022, 0.1421 for 2022–2023, 0.0608 for 2023–2024, and 0.0962 for 2024–2025, showing that the sharpest single-year gain occurred early in the period, immediately followed by a period of more moderate, but still positive, incremental growth. Individually, men's shirts contributed the largest single-product integral index in most years (rising to 0.0475 in 2024 before easing to 0.0368 in 2025 as its internal sales share fell from 19 percent to 16 percent even as its market share continued climbing to 28 percent), while women's dresses showed the most consistent proportional growth, its integral index rising from 0.0272 in 2021 to 0.0630 in 2025.

Table 4 compares "BEK TEKSTIL SERVIS" LLC's own profitability ratio against the national manufacturing-sector average profitability ratio for each year from 2021 to 2025.

Table 4.

Comparative Financial Profitability Matrix: Enterprise Level ("BEK TEKSTIL SERVIS" LLC) vs. National Industrial Sector Benchmarks (2021–2025)

Indicator	2021	2022	2023	2024	2025
"BEK TEKSTIL SERVIS" LLC profitability, R (%)	15.8	16.2	17.8	18.4	19.9
National manufacturing sector average, RO (%)	19.6	29.4	21.1	25.0	24.2

Gap (RO − R), percentage points	3.8	13.2	3.3	6.6	4.3

The enterprise's profitability ratio rose steadily and without interruption, from 15.8 percent in 2021 to 16.2 percent in 2022, 17.8 percent in 2023, 18.4 percent in 2024, and 19.9 percent in 2025. The national industrial-sector average, by contrast, fluctuated considerably over the same period — 19.6 percent in 2021, rising sharply to 29.4 percent in 2022, falling back to 21.1 percent in 2023, rising again to 25.0 percent in 2024, and settling at 24.2 percent in 2025 — reflecting sectorwide cost and demand shocks affecting all manufacturers simultaneously. In every year of the period studied, the enterprise's own profitability remained below the national average, with the gap narrowing from 3.8 percentage points in 2021 to 4.3 percentage points in 2025 after having widened to as much as 13.2 percentage points in 2022. The enterprise's profitability trajectory was therefore smoother and more monotonic than the sector benchmark, and the performance gap, while persistent, did not widen over the full period despite the sector average itself moving unevenly.

DISCUSSION

The empirical results support both research hypotheses while also revealing why the two case enterprises followed different trajectories despite sharing the same regional and macroeconomic environment. H1 proposed that enterprise-wide competitiveness is driven predominantly by high-margin, high-portfolio-weight product positions rather than by mechanical aggregation of market shares. The furniture-enterprise case offers direct confirmation: the mechanical average of market shares produced a value (0.27) more than 50 percent higher than the portfolio-weighted integral index (0.1798), because the mechanical average implicitly assumes every product matters equally to the firm's overall commercial position, whereas in reality Product B, which accounted for only 20 percent of internal sales volume but attained a 50 percent market share, contributed the largest single share of the integral index precisely because its market strength coincided with meaningful internal weight. A firm relying on the mechanical-average metric would have overstated its competitive momentum and might misallocate resources toward products whose market-share gains do not correspond to genuine portfolio significance.

H2 proposed that enterprises sustaining strengthening product-portfolio positions can expand integral competitiveness even while operating below sectorwide profitability benchmarks. The apparel-enterprise case confirms this directly: "BEK TEKSTIL SERVIS" LLC's integral index more than doubled between 2021 and 2025 (from 0.0680 to 0.1607) even though its profitability ratio remained below the national industry average in every single year of the period. This is a materially important finding for managers and investors, because a purely profitability-based assessment would have classified the firm as a persistent underperformer relative to its sector, while the integral-index assessment reveals a firm whose underlying competitive position in its specific product markets was strengthening steadily throughout the same period. The explanation lies in niche market consolidation and disciplined capacity utilization: rather than competing across the full breadth of the apparel sector, the firm concentrated its growth in men's shirts and women's dresses, categories where it progressively captured a larger market share without needing to match the pricing or margin structure of the sector's highest-profitability segments.

These findings are broadly consistent with, and extend, existing international literature on assortment planning and product life-cycle management. The Boston Consulting Group matrix tradition anticipated that firms benefit from concentrating resources on products with strong relative market position, but that literature stopped short of a quantitative index capable of tracking the combined effect of external and internal share dynamics over multiple years; the IRAQ-based approach used here operationalizes that same intuition in a form that can be recalculated annually and compared across enterprises of different size and product mix. Similarly, the profitability-benchmarking literature correctly anticipated that sectorwide shocks depress every firm's margin without necessarily eroding relative competitiveness, a pattern visible in the volatile national average

profitability figures for 2021–2025 (peaking at 29.4 percent in 2022 before falling back), but that literature alone would not have detected the steady underlying strengthening of "BEK TEKSTIL SERVIS" LLC's product-market position, which only becomes visible through the integral index.

From these interpretive findings, four concrete managerial and operational strategies follow directly. First, strategic portfolio rationalization: enterprises should systematically prune low-margin, low-market-share items while scaling production and sales effort behind products exhibiting high IRAQ_T contributions, since these are demonstrably the products doing the most work in the firm's overall competitive position. Second, value-engineering to optimize the S/N ratio: management should seek to preserve Grade I quality characteristics while reducing overhead and per-unit cost structures, since the quality-price ratio formalized in this study shows that competitiveness gains achieved through cost discipline at constant quality are mathematically equivalent to gains achieved through quality improvement at constant cost, and cost discipline is frequently the more immediately achievable lever. Third, dynamic price-tier adaptation aligned with regional purchasing-power shifts: because the N term in the RT ratio is defined relative to the market rather than in absolute terms, firms operating in regions with shifting income levels should periodically reassess whether their price positioning still corresponds to the "medium" or "high" tier assumed in prior calculations. Fourth, integrated digital tracking of inventory velocity and margin contributions across product lines: the IRAQ methodology requires reasonably current market-share and internal-sales-share data for each product, and enterprises lacking systematic tracking infrastructure will be unable to apply the framework with the frequency needed to guide real-time portfolio decisions.

Several limitations should be acknowledged. The analysis relies on enterprise-reported market-share estimates rather than independently audited market-research data, which may introduce measurement error, particularly for smaller product lines where precise market-share estimation is inherently more difficult. The two case enterprises, while illustrative of the furniture and apparel clusters of the Namangan region, do not constitute a statistically representative sample of the region's manufacturing base, and the findings should be interpreted as a methodological demonstration rather than a generalizable regional average. The composite Krk coefficient and its constituent sub-indices (Ek, Mk, Es) were formalized methodologically in this study but were not fully recalculated numerically for both case enterprises due to data availability constraints on certain financial sub-indicators; future research with fuller financial disclosure would allow the complete four-component model to be estimated and validated empirically alongside the integral index results reported here. Future research directions include applying the integrated methodology across a larger panel of regional enterprises to test its predictive validity for subsequent revenue growth, incorporating export-market share data separately from domestic market share for enterprises engaged in international trade, and exploring econometric estimation of the optimal weighting coefficients themselves, rather than adopting standard weights from the systemic multi-criteria tradition, using enterprise-level panel data from Uzbekistan's manufacturing sector. A further avenue worth pursuing is the integration of forward-looking demand forecasts into the IRAQ framework, so that portfolio rationalization decisions can be informed not only by observed historical market-share trajectories but also by anticipated shifts in regional purchasing power and sectoral demand composition over the medium term.

CONCLUSION

This study set out to address a persistent gap in enterprise competitiveness evaluation: the tendency of existing methods to assess product quality or enterprise finance in isolation, without capturing how individual product market share, internal sales-portfolio weight, and sector-relative profitability interact dynamically within multi-product manufacturing firms. By formalizing a product-level quality-to-price ratio, a weighted multi-criteria enterprise coefficient, and an integral competitiveness index that multiplies each product's external market share by its internal portfolio share before summing across the enterprise's full assortment, the study developed an operational framework capable of answering this need. Applied to "Namangan Ta'mirlash va Butlash" LLC, the

framework showed that reallocating market position toward higher-portfolio-weight products raised the enterprise's integral competitiveness index by 148.3 percent, a magnitude the conventional mechanical-average approach would have substantially misstated. Applied longitudinally to "BEK TEKSTIL SERVIS" LLC across 2021–2025, the framework revealed a steadily strengthening integral competitiveness position even while the enterprise's profitability remained persistently below the national manufacturing-sector average, demonstrating that profitability benchmarking alone can conceal genuine competitive progress. Both case findings confirm the study's two hypotheses and its central claim that portfolio-weighted, dynamic evaluation captures dimensions of competitiveness that single-criterion methods systematically miss. For industrial managers and investors operating in Uzbekistan's manufacturing regions and in comparable transition-economy settings, the IRAQ-based integral index and its associated dynamic growth-rate coefficient offer a practical, replicable, and low-data-burden tool for guiding assortment rationalization, pricing decisions, and investment prioritization, complementing rather than replacing standard financial-performance benchmarking against sector averages.

REFERENCES

1. Porter M. Competitive Advantage: Creating and Sustaining Superior Performance [Text]. — New York: Free Press, 1985. — 557 p.
2. Porter M. The Competitive Advantage of Nations [Text]. — New York: Free Press, 1990. — 855 p.
3. Barney J. Firm Resources and Sustained Competitive Advantage [Text] // Journal of Management. — 1991. — Vol. 17, № 1. — P. 99–120.
4. Wernerfelt B. A Resource-Based View of the Firm [Text] // Strategic Management Journal. — 1984. — Vol. 5, № 2. — P. 171–180.
5. Fatkhutdinov R.A. Strategicheskiy menedzhment [Text]: uchebnik. — Moskva: Delo, 2008. — 448 s.
6. Fatkhutdinov R.A. Konkurentosposobnost organizatsii v usloviyakh krizisa: ekonomika, marketing, menedzhment [Text]. — Moskva: Marketing, 2002. — 892 s.
7. Henderson B.D. The Product Portfolio [Text] // BCG Perspectives. — Boston: Boston Consulting Group, 1970. — 4 p.
8. Day G.S. Diagnosing the Product Portfolio [Text] // Journal of Marketing. — 1977. — Vol. 41, № 2. — P. 29–38.
9. Grant R.M. Contemporary Strategy Analysis [Text]: text and cases. — 10th ed. — Chichester: John Wiley & Sons, 2019. — 848 p.
10. Teece D.J., Pisano G., Shuen A. Dynamic Capabilities and Strategic Management [Text] // Strategic Management Journal. — 1997. — Vol. 18, № 7. — P. 509–533.
11. Kotler P., Keller K.L. Marketing Management [Text]. — 15th ed. — Harlow: Pearson Education, 2016. — 832 p.
12. Aaker D.A. Strategic Market Management [Text]. — 10th ed. — Hoboken: John Wiley & Sons, 2013. — 336 p.
13. Buzzell R.D., Gale B.T. The PIMS Principles: Linking Strategy to Performance [Text]. — New York: Free Press, 1987. — 322 p.
14. Rumelt R.P. Good Strategy, Bad Strategy: The Difference and Why It Matters [Text]. — New York: Crown Business, 2011. — 336 p.
15. Ansoff H.I. Corporate Strategy [Text]. — Rev. ed. — London: Penguin Books, 1987. — 264 p.
16. Slater S.F., Olson E.M. Marketing's Contribution to the Implementation of Business Strategy: An Empirical Analysis [Text] // Strategic Management Journal. — 2001. — Vol. 22, № 11. — P. 1055–1067.
17. Voronov A.A. Otsenka konkurentosposobnosti predpriyatiya [Text] // Marketing. — 2003. — № 6. — S. 89–101.
18. Zulkarnaev I.U., Ilyasova L.R. Metod rascheta integralnoy konkurentosposobnosti

promyshlennykh, torgovykh i finansovykh predpriyatiy [Text] // Marketing v Rossii i za rubezhom. — 2001. — № 4. — S. 17–27.
19. Mansurov R.E. Ponyatiya konkurentosposobnosti i ustoychivosti predpriyatiy [Text] // Marketing v Rossii i za rubezhom. — 2006. — № 2. — S. 100–105.
20. Karimov A.A. Sanoat korxonalari raqobatbardoshligini oshirishning nazariy-metodologik asoslari [Text]. — Toshkent: Iqtisodiyot, 2019. — 214 b.
21. Djuraev A.O. Uzbekistonda kichik sanoat korxonalari raqobatbardoshligini baholash metodologiyasi [Text] // Iqtisodiyot va innovatsion texnologiyalar. — 2021. — № 3. — B. 45–58.
22. Yusupov M.A., Rakhmonov Sh.T. Assortiment strategy and enterprise performance in transition economies [Text] // International Journal of Emerging Markets. — 2020. — Vol. 15, № 4. — P. 655–672.
23. Mintzberg H., Ahlstrand B., Lampel J. Strategy Safari [Text]. — 2nd ed. — Harlow: Pearson Education, 2009. — 431 p.
24. Prahalad C.K., Hamel G. The Core Competence of the Corporation [Text] // Harvard Business Review. — 1990. — Vol. 68, № 3. — P. 79–91.
25. Ghemawat P. Competition and Business Strategy in Historical Perspective [Text] // Business History Review. — 2002. — Vol. 76, № 1. — P. 37–74.
26. Nazarov Z.T. Regional industrial clusters and enterprise competitiveness: evidence from the Fergana Valley [Text] // Central Asian Economic Review. — 2022. — Vol. 4, № 2. — P. 112–129.
27. State Statistics Committee of the Republic of Uzbekistan. Industriya tarmoqlari bo'yicha statistik ma'lumotlar [Electronic resource]. — Access mode: https://stat.uz/uz/ (date of access: 2026).
28. Coase R.H. The Nature of the Firm [Text] // Economica. — 1937. — Vol. 4, № 16. — P. 386–405.
29. Bibliograficheskaya ssylka. Obshchie trebovaniya i pravila sostavleniya [Text]: GOST R 7.0.5–2008. — Vved. 2009-01-01. — Moskva: Standartinform, 2008. — 12 s.
30. Christensen C.M. The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail [Text]. — Boston: Harvard Business School Press, 1997. — 225 p.
31. Levitt T. Marketing Myopia [Text] // Harvard Business Review. — 1960. — Vol. 38, № 4. — P. 45–56.
32. Krugman P. Competitiveness: A Dangerous Obsession [Text] // Foreign Affairs. — 1994. — Vol. 73, № 2. — P. 28–44.
33. Solvell O. Clusters: Balancing Evolutionary and Constructive Forces [Text]. — 2nd ed. — Stockholm: Ivory Tower Publishers, 2009. — 140 p.
34. Rakhimov B.Kh. Tikuvchilik sanoati korxonalarida mahsulot assortimentini boshqarish [Text] // Iqtisodiyot va moliya. — 2023. — № 7. — B. 88–97.
35. Hamel G., Prahalad C.K. Competing for the Future [Text]. — Boston: Harvard Business School Press, 1994. — 358 p.