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DIGITAL MARKETING INTEGRATION, KPI ARCHITECTURE AND CAUSAL EVALUATION OF ENTERPRISE COMPETITIVENESS IN EMERGING MARKETS: A CONCEPTUAL-METHODOLOGICAL FRAMEWORK FOR UZBEKISTAN

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Abstract. Purpose: This article develops a conceptual-methodological framework for evaluating how digital marketing integration contributes to enterprise competitiveness in emerging markets. The study responds to a persistent problem in digital transformation research: enterprises often adopt CRM systems, Big Data analytics, AI personalization, and omnichannel platforms without converting these tools into sustained competitive advantage.

Design/methodology/approach: The article synthesizes strategic marketing theory, market orientation, dynamic capabilities, marketing analytics, Balanced Scorecard logic, and causal inference methodology. It proposes a five-condition framework for digital competitive advantage, a nine-node customer-data-to-competitiveness causal chain, a five-perspective KPI architecture, and a data-contingent causal identification protocol for Uzbekistan and comparable emerging markets.

Findings: Digital marketing tools generate competitiveness only when embedded in five mutually reinforcing conditions: strategic integration, data quality, analytical competence, organizational agility, and algorithmic uniqueness. The proposed KPI architecture separates leading indicators from lagging outcomes and distinguishes latent constructs from managerial performance indicators. The causal protocol clarifies when PLS-SEM, panel fixed effects, instrumental variables, difference-in-differences, and propensity score matching are appropriate.

Originality/value: The article contributes an emerging-market-calibrated roadmap for moving from digital marketing adoption to measurable competitiveness evaluation under data scarcity. It provides a theoretically grounded and empirically testable framework for managers, researchers, and policymakers.

Keywords: digital marketing integration; enterprise competitiveness; KPI architecture; causal inference; Balanced Scorecard; PLS-SEM; emerging markets; Uzbekistan; marketing analytics; digital maturity.

INTRODUCTION

Digital marketing technologies have become central to enterprise modernization in emerging markets. CRM platforms, social media analytics, AI-assisted personalization, Big Data systems, and omnichannel tools promise improved customer insight, faster market response, and stronger competitive positioning. Yet the adoption of these tools does not automatically create competitive advantage. Many enterprises invest in digital tools but fail to obtain durable gains in market share, customer retention, customer lifetime value, or brand equity. This mismatch indicates that the key research problem is not technology adoption itself, but the organizational and methodological conditions under which digital marketing is converted into measurable competitiveness.

The problem is especially important for Uzbekistan and comparable transition economies. Enterprises

operate with short KPI histories, uneven CRM adoption, fragmented customer data, limited analytics talent, and incomplete sector-level market information. Under such conditions, conventional marketing-performance models imported from advanced economies can produce misleading conclusions. Cross-sectional correlations between digital marketing expenditure and competitiveness cannot answer whether digital marketing causes competitiveness or whether already competitive firms simply have more resources to invest in digital marketing.

This article therefore develops a conceptual-methodological framework for evaluating the digital marketing-competitiveness relationship under emerging-market constraints. It asks three research questions: RQ1: under what conditions do digital marketing tools become sources of digital competitive advantage? RQ2: what KPI architecture can measure the causal chain from customer data to enterprise competitiveness while separating leading drivers from lagging outcomes? RQ3: what causal identification strategy is feasible when enterprise data are incomplete, panels are short, and quasi-experimental opportunities are limited?

Literature Review

The literature suggests four relevant streams. The first stream distinguishes strategic marketing from marketing activity. Strategic marketing concerns market selection, value proposition design, positioning, and resource allocation, while marketing activities are the execution layer. This distinction is essential because digital tools are often adopted at the activity level without being integrated into strategic positioning.

The second stream concerns digital marketing capabilities. CRM, Big Data, and AI studies show that technology affects performance through organizational capabilities rather than through direct tool ownership. CRM improves performance when it enhances marketing capability. Big Data analytics improves performance when data infrastructure, analytical talent, and data-driven culture become dynamic capabilities. AI creates advantage mainly when it supports analysis and adaptive decision-making, not merely task automation.

The third stream concerns KPI and performance measurement. Balanced Scorecard logic shows that financial indicators are lagging outcomes of customer, process, and learning drivers. Marketing-finance research further shows that brand equity, customer lifetime value, and market share effects often emerge with long lags. Therefore, a valid digital marketing KPI system must include short-lag, medium-lag, and long-lag indicators.

The fourth stream concerns causal inference. Marketing-performance studies face reverse causality, omitted variable bias, selection bias, and mediation complexity. Panel fixed effects can address time-invariant unobserved heterogeneity; instrumental variables can address simultaneity if valid instruments exist; difference-in-differences can estimate programme effects under parallel trends; propensity score matching can reduce selection bias on observables; and PLS-SEM can test latent constructs, mediation, and moderation when measurement models are theoretically specified.

Five gaps remain. First, digital marketing tools and digital competitive advantage are often conflated. Second, existing studies examine separate links such as CRM-performance or Big Data-performance, but rarely specify the full chain from data collection to sustained competitiveness. Third, KPI systems often mix operational indicators and strategic outcomes without construct validity logic. Fourth, emerging-market studies rarely combine measurement-model logic with causal identification. Fifth, Uzbekistan-specific enterprise realities have not been sufficiently incorporated into digital marketing competitiveness frameworks.

The proposed framework is built on the proposition that digital marketing tools are necessary but not sufficient for digital competitive advantage. Tools become advantage-generating only when five conditions are jointly present.

Condition 1 is strategic integration. CRM, AI personalization, and omnichannel systems must be governed by market segmentation, targeting, positioning, and value proposition choices. Condition 2 is data quality. Data must be complete, timely, accurate, integrated, and sufficiently first-party to support defensible customer insight. Condition 3 is analytical competence. Enterprises need human or AI-assisted capability to transform data into predictive and prescriptive marketing intelligence. Condition 4 is organizational agility. Marketing, IT, sales, finance, and operations must be able to act quickly on insights. Condition 5 is algorithmic uniqueness. The combination of proprietary data, models, routines, and learning must be difficult for rivals to imitate.

These five conditions support a nine-node causal chain: customer data collection; data quality assurance; analytics and insight generation; market segmentation; personalization and value delivery; customer experience management; loyalty and CLV accumulation; brand value and competitive positioning; and enterprise competitiveness. The chain shows that weak data quality or weak analytical competence can block the conversion of digital tool adoption into competitive outcomes.

The KPI architecture extends the traditional Balanced Scorecard by adding a competition perspective. The financial perspective includes ROMI, CLV, CAC, and marketing-attributed revenue. The customer perspective includes NPS, churn, retention, CSAT, and customer effort score. The digital perspective includes CRM integration, conversion rate, ROAS, engagement rate, and digital maturity. The internal process perspective includes marketing cycle time, lead-to-close time, and campaign ROI accuracy. The competition perspective includes market share, brand equity, and share of voice.

The architecture distinguishes leading indicators from lagging indicators. Data completeness, analytics maturity, conversion rate, engagement rate, and cycle time are leading indicators that help managers steer current activity. CLV, market share, brand equity, and retention are lagging indicators that validate whether strategic value creation has occurred. Benchmarks should be calibrated by sector and firm size; they should not be applied mechanically across manufacturing, services, e-commerce, and export-oriented firms.

For research purposes, the KPI system must distinguish latent constructs from composite indices. Market orientation, digital maturity, and customer experience may be modeled as reflective constructs. Digital marketing integration, marketing strategy integration, and enterprise competitiveness may be modeled as formative composites because their indicators represent different dimensions rather than interchangeable manifestations.

RESEARCH METHODOLOGY

The framework proposes a data-contingent identification protocol rather than a single universal estimator. If only cross-sectional survey data are available, the appropriate first step is PLS-SEM to test construct validity, mediation, and moderation, with careful avoidance of causal overclaiming. If repeated enterprise-level observations are available, panel fixed effects should be used to control for time-invariant firm heterogeneity. If a credible instrument exists, IV/2SLS can be used as a robustness strategy for reverse causality, but only after reporting first-stage F-statistics and defending the exclusion restriction. If a digital support programme has staggered rollout, difference-in-differences can estimate treatment effects after testing parallel trends. If adoption is voluntary and observable pre-treatment covariates are available, propensity score matching can compare adopters with similar non-adopters.

The decision tree is as follows: use PLS-SEM for latent constructs and mediation; use fixed effects when panel data exist; use IV only when instrument validity can be defended; use DiD only when treatment timing varies across groups; use PSM when adoption selection is observable but not randomized. This sequence reduces the risk of method shopping and aligns the estimator with actual data conditions in Uzbekistan.

Hypotheses and Propositions

P1: Digital marketing tools generate digital competitive advantage only when strategic integration, data quality, analytical competence, organizational agility, and algorithmic uniqueness are jointly present.

H1: Digital marketing integration has a positive effect on enterprise competitiveness through market orientation and marketing analytics maturity.

H2: Digital maturity positively moderates the relationship between digital marketing integration and enterprise competitiveness.

H3: Industry type moderates the relative effect of digital marketing mechanisms on competitiveness, with services relying more strongly on customer experience and relational indicators, and manufacturing relying more strongly on distribution, product, and process indicators.

H4: The impact of digital marketing programme participation on competitiveness is positive only when treated and control enterprises satisfy comparable pre-treatment trends and minimum data quality conditions.

H5: The indirect effect of digital marketing integration on competitiveness through customer value and CLV accumulation is stronger in enterprises with higher organizational agility.

Uzbekistan-specific adaptation. Uzbekistani enterprises require methodological adaptation without lowering scientific standards. Short panels can be addressed through unbalanced panel designs and retrospective three-year growth indicators. Missing CLV can be proxied through average purchase value, purchase frequency, and estimated relationship duration. Market share can be triangulated through enterprise revenue, industry statistics, and expert assessment. Western scales should be translated, back-translated, and reviewed by local experts before use. Sector-specific sampling should include manufacturing, services, e-commerce, retail, platform-dependent SMEs, and export-oriented firms.

The framework is particularly relevant to the Digital Uzbekistan agenda because it shifts policy focus from technology provision to capability formation. Public programmes should not only subsidize tools; they should support data governance, analytics training, CRM integration, managerial KPI discipline, and agile cross-functional routines.

ANALYSIS AND RESULTS

The framework contributes to strategic marketing and digital transformation research in four ways. First, it clarifies that digital competitive advantage is not tool possession but capability-based strategic use. Second, it connects digital marketing mechanisms to competitiveness through a full causal chain rather than isolated indicators. Third, it provides a KPI architecture that can serve both managerial dashboards and academic measurement models. Fourth, it translates causal inference logic into a practical sequence suitable for data-

constrained emerging markets.

The framework also protects against three common analytical mistakes. The first mistake is treating correlation as causation. The second is measuring only short-term digital campaign performance while ignoring long-term brand and CLV effects. The third is adopting tools before building the organizational capacity to use them strategically.

Managers can use the five-condition framework as a diagnostic checklist. If CRM is installed but data are fragmented, the binding constraint is data quality. If data exist but no analysts can interpret them, the binding constraint is analytical competence. If insights exist but departments cannot act on them, the binding constraint is organizational agility. CFOs can use the KPI architecture to evaluate marketing investment across short-, medium-, and long-horizon returns. Policymakers can use the causal protocol to design digital support programmes with built-in impact evaluation.

The article is conceptual and methodological; it does not report primary empirical estimates. Future research should pilot the measurement instrument, test construct validity in Uzbekistani enterprises, build sector-specific KPI benchmarks, and estimate the proposed hypotheses using PLS-SEM and panel methods. Instrumental variables and DiD designs should be used only where assumptions are empirically defensible. Future work should also compare Uzbekistan with other Central Asian economies to test whether institutional and data constraints moderate the digital marketing-competitiveness relationship.

CONCLUSION AND RECOMMENDATIONS

Digital marketing creates enterprise competitiveness only when digital tools are embedded in strategic, data-driven, and agile organizational systems. The proposed framework offers a structured path from tool adoption to measurable competitive impact. It combines five conditions for digital competitive advantage, a nine-node causal chain, a five-perspective KPI architecture, and a data-contingent causal identification protocol (Table 1).

Table 1.

Core tables for the revised article

Condition	Meaning	Research role	Managerial diagnostic
Strategic integration	Digital tools serve positioning and value proposition logic	Necessary strategic condition	Is each tool linked to a segment, value proposition and KPI?
Data quality	Customer data are complete, timely, reliable and integrated	Input-quality condition	Are customer records unified and usable for analytics?
Analytical competence	Data are converted into predictive and prescriptive insight	Capability condition	Does the firm have analysts or AI-supported routines?
Organizational agility	Insights are acted upon rapidly across functions	Dynamic capability condition	Can marketing, IT, sales and finance respond together?
Algorithmic uniqueness	Data, models and routines are difficult to imitate	VRIN condition	Does the firm possess proprietary learning competitors cannot copy?

For Uzbekistan and comparable emerging markets, this approach provides a realistic route for transforming digital marketing investment into sustainable enterprise competitiveness (Table 2).

Table 2.

Recommended Causal Identification Methods under Different Data Conditions

Data condition	Recommended method	Main purpose	Key warning
Cross-sectional survey only	PLS-SEM	Measurement model, mediation, moderation	Do not overclaim causality.
Firm panel data available	Fixed effects	Control time-invariant unobserved heterogeneity	Needs sufficient time variation.

Credible instrument available	IV/2SLS	Address reverse causality	Exclusion restriction must be defended.
Staggered programme rollout	Difference-in-differences	Estimate programme treatment effect	Parallel trends must be tested.
Voluntary adoption with observables	Propensity score matching	Reduce selection bias on observables	Cannot remove unobserved selection.

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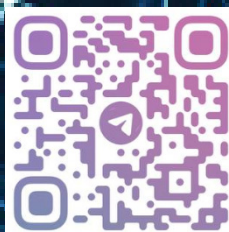
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