

Designing for Use, Reaching for Growth: Design-Market Differentiation and Performance in African Process Manufacturing

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ABSTRACT: How do manufacturers differentiate when the core product is standardized and technical conformity constrains visible variation? This article develops a design-market fit perspective: design differentiation creates value-in-use through functionality, usability, packaging and structural innovation, whereas market differentiation converts that value into segment relevance, availability and repeat demand. The analysis draws on a cross-sectional survey of 265 managers and professional staff from six Kenyan cement manufacturers. Design differentiation was positively correlated with perceived organizational performance ($r = .61$, $p < .001$) and retained an independent positive coefficient in the thesis-reported five-predictor model ($\beta = .33$, $p < .001$). Market differentiation was similarly correlated with performance ($r = .62$, $p < .001$) and remained significant in the same model ($\beta = .25$, $p = .002$). Firms emphasized ease of use ($M = 4.03$) more than innovation in form or structure ($M = 3.71$), and distribution efficiency ($M = 4.18$) more than customer-loyalty programmes ($M = 3.56$). The evidence supports an alignment argument: functional design and market-delivery capabilities make separate but complementary contributions to performance. The study contributes sector-specific evidence from an underrepresented African process-manufacturing context and identifies retention capability as the weak link in otherwise strong segmentation and distribution systems. Because the design is cross-sectional and respondents are nested within six firms, the findings are interpreted as associations rather than causal effects.

KEYWORDS: design differentiation; market differentiation; organizational performance; industrial marketing; distribution capability; African manufacturing

1. INTRODUCTION

Manufacturers of standardized industrial goods face a differentiation paradox. Their products must conform to technical specifications, yet they must still provide credible reasons for distributors, contractors and end users to prefer one supplier. Differentiation can reduce direct price rivalry when buyers perceive distinctive value (Porter, 1980, 1985), but positioning alone does not explain how that value is designed, delivered and renewed. In process industries, competitive advantage may depend less on conspicuous novelty than on application reliability, packaging, technical support, distribution reach and the ability to retain customers.

This problem is especially relevant in emerging markets, where infrastructure constraints, fragmented channels and uneven access to market information can separate the creation of customer value from its realization. Evidence from African firms indicates that competitive strategy is most effective when it is supported by organizational learning, strategic alignment and context-specific capabilities (Agyapong et al., 2021; Maclean et al., 2023; Mgwatyu et al., 2024). Research from Benin further shows that product-quality and marketing differentiation can improve performance, although competitive intensity may alter the strength of the marketing-strategy effect (Houessou et al., 2025).

The present study focuses on two dimensions of differentiation in Kenya's cement industry. Design differentiation concerns functionality, usability, packaging, appearance and innovation in product form or structure. Market differentiation concerns segmentation, tailored communication, distribution access, geographic coverage and customer-retention systems. Existing research often aggregates these mechanisms into a general differentiation construct (Islami et al., 2020; Arslan & Can, 2025), while positioning research shows that smaller firms also combine several market-facing positioning cues (Fluhrer & Brahm, 2023). Such aggregation can obscure whether firms are stronger at creating useful differences or at bringing those differences to selected customers.

Designing for Use, Reaching for Growth: Design-Market Differentiation and Performance in African Process Manufacturing

The article makes three contributions. First, it links design-based value-in-use to market-based value realization in a single design-market fit perspective. Second, it distinguishes acquisition-oriented capabilities, particularly segmentation and distribution, from retention capability. Third, it provides evidence from a capital-intensive African manufacturing industry that remains underrepresented in strategy and industrial-marketing scholarship. The analysis asks whether design and market differentiation are independently associated with organizational performance and where internal capability imbalances remain.

2. LITERATURE REVIEW AND HYPOTHESES

2.1 Theoretical foundation: positioning, resources and renewal

Porter's positioning logic treats differentiation as the creation of valued uniqueness that can insulate a firm from direct price competition (Porter, 1980, 1985). The resource-based view shifts attention from the market position to the internal resources that make the position credible and difficult to imitate (Barney, 1991). Design knowledge, technical expertise, customer insight, channel relationships and brand reputation can therefore support differentiation when they are valuable, coordinated and not readily replicable.

Dynamic-capabilities theory adds a temporal mechanism. In changing markets, firms must sense shifts in customer requirements, seize opportunities and reconfigure resources rather than relying on static advantages (Teece et al., 1997; Eisenhardt & Martin, 2000). Recent studies reinforce this capability argument: knowledge-management and organizational agility improve new-product-development outcomes (Idrees et al., 2022), organizational learning strengthens competitive strategy and performance in a lower-middle-income economy (Maclean et al., 2023), and resource combinations involving product uniqueness, communication tools and sophisticated distribution channels increase the likelihood of marketing innovation (Sipos et al., 2025). Design-market fit thus represents an alignment between what the firm makes distinctive and how it senses, communicates, distributes and renews that distinctiveness.

2.2 Design differentiation and value-in-use

Design makes strategy tangible. In industrial products, design is not limited to appearance: it encompasses functionality, usability, packaging, application efficiency and performance-enhancing specifications (Ulrich & Eppinger, 2016). These features create value-in-use by reducing customer effort, application error and uncertainty. They also embody cross-functional routines connecting product development, production and market knowledge. Contemporary innovation research similarly associates knowledge integration, agility and an innovative managerial mindset with stronger innovation outcomes and competitive advantage (Idrees et al., 2022; Jaaffar et al., 2024).

The process-manufacturing context qualifies this logic. Cement must meet regulated technical standards, so radical visible variation may be limited; useful differentiation is more likely to arise from packaging, handling, application support, specialized formulations and consistency. Evidence on strategic manufacturing capabilities suggests that operational resources affect performance when translated into production capabilities that serve competitive priorities (Csiki et al., 2023). Accordingly, design differentiation should be judged by whether it improves customer use and problem solving, not merely by visual novelty.

H1. Design differentiation is positively associated with organizational performance.

2.3 Market differentiation and value realization

Market differentiation translates an offering into segment-specific relevance through segmentation, targeting and the communication of customer value (Kotler et al., 2022). Market-driven organizations require capabilities for sensing needs, selecting attractive segments and coordinating responses (Day, 1994). Marketing capabilities then convert insight into customer and financial outcomes (Morgan et al., 2009). Recent evidence extends this view: marketing capability improves performance through resource orchestration (Duah et al., 2024), strategic marketing alignment enhances competitive advantage in African SMEs (Mgwatyu et al., 2024), and contemporary marketing innovation depends on customer responsiveness and distribution sophistication (Sipos et al., 2025).

Distribution is particularly consequential in cement markets because geographic availability and delivery timing affect project continuity. Kenyan evidence from dairy processing and metal manufacturing also connects differentiation and competitive strategy to organizational performance (Modi & Wambua, 2024; Musanya & Wainaina, 2024). Yet reach does not guarantee relationship continuity. Customer acquisition through targeting and coverage must be complemented by complaint recovery, distributor development, technical education and repeat-purchase systems. This distinction prevents a broad market-differentiation score from concealing weak retention capability.

H2. Market differentiation is positively associated with organizational performance.

Designing for Use, Reaching for Growth: Design-Market Differentiation and Performance in African Process Manufacturing

2.4 Design-market fit

Design and market differentiation are analytically distinct but strategically interdependent. Design determines what is useful and distinctive; market capability determines for whom that distinction matters, whether it is accessible and whether initial purchases become recurring demand. Differentiation research increasingly shows that performance depends on complementary policies and capabilities rather than a single isolated strategic choice (Aidara et al., 2021; Arslan & Can, 2025; Aftab et al., 2025). The available dataset does not estimate a design $\times$ market interaction, so fit is advanced here as a theoretically grounded interpretation, not as a statistically tested moderation claim.

3. METHOD

3.1 Setting, design and sample

The study used a cross-sectional survey of employees in six Kenyan cement manufacturers: Bamburi Cement, Mombasa Cement, East African Portland Cement Company, National Cement (Simba Cement), Savannah Cement and Rai Cement. The firms were purposively selected for sector relevance, followed by proportionate stratification and simple random selection within role strata. The internal sampling frame covered approximately 3,000 employees in marketing, product development, strategy, finance/accounting and operations. Of 353 questionnaires distributed, 265 usable responses were obtained, representing a 75% response rate.

3.2 Measures and analysis

Five-point Likert items were averaged into composite scores. Design differentiation measured appearance and packaging, functional features, ease of application, innovation in form or structure, and aesthetic or structural uniqueness. Market differentiation measured segment targeting, tailored marketing, distribution efficiency, geographic coverage and customer-loyalty practices. Organizational performance was a perceptual composite combining financial and non-financial outcomes. The thesis reports test-retest reliability of $r = .751$ and expert content validation; however, item-level data were unavailable for a fresh factor analysis in this article.

Pearson correlations assessed bivariate associations. The thesis-reported multiple regression simultaneously entered product, quality, design, price and market differentiation as predictors of performance. The full model reported $R^2 = .65$, adjusted $R^2 = .63$ and $F = 32.5$ ($p < .001$). The coefficients presented here are therefore partial coefficients from the five-predictor model, not estimates from a two-predictor reanalysis. Because the design is cross-sectional, performance is perceptual and respondents are nested within only six firms, causal language is avoided and conventional p-values are interpreted cautiously.

4. RESULTS

Table 1 summarizes the focal construct-level results. Both design and market differentiation were positively associated with performance at the bivariate level and retained significant independent coefficients after the other three differentiation dimensions were included.

Construct	Mean	SD	r with performance	Standardized β	p
Design differentiation	3.87	1.05	.61	.33	< .001
Market differentiation	3.94	.97	.62	.25	.002

Note. N = 265. Standardized coefficients are from the thesis-reported five-predictor model.

Design differentiation was moderately to strongly implemented. Ease of use or application received the highest rating ($M = 4.03$), whereas innovation in form or structure ($M = 3.71$) and aesthetic or structural uniqueness ($M = 3.77$) were weaker. Its correlation with performance was $r = .61$ ($p < .001$), and its partial coefficient was $\beta = .33$ ($p < .001$); H1 was supported.

Market differentiation was also strongly implemented. Efficient distribution channels ($M = 4.18$) and effective segment targeting ($M = 4.15$) were strongest, whereas customer-loyalty programmes were weaker ($M = 3.56$). Market differentiation correlated with performance at $r = .62$ ($p < .001$) and retained a partial coefficient of $\beta = .25$ ($p = .002$); H2 was supported.

Capability	Strongest practice	Mean	Weakest practice	Mean
Design	Ease of use/application	4.03	Innovation in form/structure	3.71

Capability	Strongest practice	Mean	Weakest practice	Mean
Market	Efficient distribution channels	4.18	Customer-loyalty programmes	3.56

5. DISCUSSION

The results indicate that differentiation in a process industry is not confined to product novelty. Functional design and market access each retained a positive association with perceived performance after accounting for product, quality and price differentiation. The design finding is consistent with the resource-based and dynamic-capabilities view that technical knowledge creates value when integrated with learning and renewal routines (Barney, 1991; Idrees et al., 2022; Melesse, 2025). It also accords with evidence that innovation-strategy selection and performance respond to changes in the business environment (Gošnik et al., 2023). In cement, ease of application may reduce handling difficulty and uncertainty more directly than visual distinctiveness; the comparatively low structural-innovation score therefore points to an opportunity for formulation, packaging and application innovation rather than cosmetic change alone.

Market differentiation provides a complementary value-realization mechanism. The high distribution score demonstrates that availability and geographic reach form part of the industrial value proposition. This aligns with recent evidence that sophisticated distribution and customer responsiveness are material components of marketing innovation (Sipos et al., 2025) and that marketing capabilities improve performance through coordinated resource deployment (Duah et al., 2024). The result also accords with African evidence linking differentiation and competitive strategy to performance, while recognizing that competitive intensity and context can condition returns (Houessou et al., 2025).

The weaker score for loyalty programmes exposes a strategic imbalance. Firms appear more developed in reaching selected segments than in converting transactions into durable relationships. For an industrial product purchased repeatedly through contractors and distributors, retention is not reducible to points-based loyalty schemes. It includes technical training, service recovery, account development, reliable fulfilment and the systematic use of customer information. The managerial implication is therefore to treat distribution and retention as separate capabilities rather than assuming that broad coverage automatically produces loyalty.

The design-market fit perspective integrates positioning and capability explanations. Porter's framework identifies the logic of valued uniqueness, whereas the resource-based and dynamic-capabilities perspectives explain how firms produce, deliver and renew it. Recent research supports this complementarity: differentiation performs better when embedded in aligned organizational, procurement, learning and marketing systems (Maclean et al., 2023; Mgwatyu et al., 2024; Arslan & Can, 2025). The present evidence cannot establish statistical complementarity, but the coexistence of significant design and market coefficients, and the contrasting capability profiles, provides a defensible basis for a future interaction test.

6. MANAGERIAL IMPLICATIONS

Cement manufacturers should organize cross-functional segment-application teams that link product development, technical support, marketing and distribution. Each priority segment should have a defined value-in-use proposition, application requirements, channel service level and retention pathway. Innovation portfolios should place greater emphasis on structural and formulation innovation, while customer systems should progress from acquisition toward contractor education, distributor development, complaint recovery and repeat-purchase analytics. These investments should be evaluated jointly: a technically useful design that is unavailable or poorly explained will underperform, just as extensive distribution cannot indefinitely compensate for an interchangeable offering.

7. LIMITATIONS AND FUTURE RESEARCH

Four limitations constrain inference. First, the cross-sectional design does not establish temporal ordering or causality. Second, common respondents assessed both strategy and performance, creating possible common-method inflation. Third, 265 respondents were nested within six firms, but the thesis reports conventional regression rather than cluster-robust or multilevel uncertainty. Fourth, item-level data were unavailable for confirmatory factor analysis and discriminant-validity tests. Future research should re-estimate the two-objective model from raw data, test design × market interaction effects with mean-centered or latent constructs, examine measurement invariance across managerial roles, and distinguish segmentation, distribution and retention as separate market-capability dimensions. Objective performance measures and longitudinal multi-industry African samples would improve causal and external validity.

8. CONCLUSION

Firms competing in standardized industrial categories can differentiate by aligning value-in-use with value realization. In Kenya's cement industry, design and market differentiation were each positively associated with perceived organizational performance. The observed practice profile suggests comparatively strong functional usability and distribution reach but weaker structural innovation and customer-retention systems. Closing these gaps may convert broad market presence into a more defensible advantage, although longitudinal and firm-clustered evidence is required before causal claims can be made.

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