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Corresponding Author: Jianxiong Xu –
E-mail: xujianxiong@jcu.edu.cn

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Competitive Intelligence and Marketing Effectiveness of Domestic Ceramic Products: A Prisma-Guided Systematic Synthesis

Inteligência Competitiva e Efetividade de Marketing de Produtos Cerâmicos Domésticos: Uma Síntese Sistemática Guiada pelo Prisma

Jianxiong Xu

School of Economics, Management and Law, Jingdezhen Ceramic University, Jiangxi, China.

Yuanle Mo

School of Economics, Management and Law, Jingdezhen Ceramic University, Jiangxi, China.

Yaowei Fan

School of Economics, Management and Law, Jingdezhen Ceramic University, Jiangxi, China.

ABSTRACT | Purpose: This paper explores how competitive intelligence enhances marketing performance of the domestic ceramic products by means of customer alignment, sustainability signaling, design translation, and channel responsiveness. **Methodology/approach:** A systematic synthesis led by PRISMA was performed on 40 journal articles published between 2021 and 2025, which were found by searchable search strings, controlled duplication, verification of the DOIs, and systematic coding. **Originality/Relevance:** The research integrates scattered literature on ceramics, digital transformation, market intelligence, sustainability and supply chain agility into a single framework specific to domestic ceramic producers. **Key findings:** The marketing results become better when companies translate market cues into evidence-based product design, plausible sustainability reporting, adaptive fulfillment, and digitally-aided decision processes instead of competing based on prices only. **Theoretical/methodological contributions:** The article redefines competitive intelligence as an integrating capability that connects sensing, interpretation, action, and measurable market outcomes, and it specifies five testable hypotheses for future empirical validation in domestic ceramic firms.

Keywords | Competitive intelligence. Domestic ceramics. Digital transformation. Sustainability signaling. Channel responsiveness. Marketing effectiveness.

RESUMO | Objetivo: Este artigo examina como a inteligência competitiva melhora a efetividade de marketing de produtos cerâmicos domésticos por meio do alinhamento ao cliente, da sinalização de sustentabilidade, da tradução do design e da responsividade de canais. **Metodologia/abordagem:** Foi realizada uma síntese sistemática guiada pelo PRISMA com 40 artigos de periódicos publicados entre 2021 e 2025, identificados por estratégias reprodutíveis de busca, controle de duplicatas, verificação de DOI e codificação estruturada. **Originalidade/Relevância:** O estudo integra pesquisas fragmentadas sobre cerâmica, transformação digital, inteligência de mercado, sustentabilidade e agilidade da cadeia de suprimentos em um único framework adaptado aos produtores domésticos. **Principais conclusões:** O desempenho de marketing melhora quando as empresas convertem sinais de mercado em decisões de design, comunicação ambiental verificável, flexibilidade logística e rotinas digitais de decisão. **Contribuições teóricas/metodológicas:** O artigo reposiciona a inteligência competitiva como capacidade integradora entre sensoriamento, interpretação, ação e resultados mercadológicos, além de explicitar cinco hipóteses testáveis para futura validação empírica no setor cerâmico doméstico.

Palavras-chave | Inteligência competitiva. Cerâmica doméstica. Transformação digital. Sinalização de sustentabilidade. Responsividade de canais. Efetividade de marketing.

1 INTRODUCTION

The suppliers of domestic ceramics are in a market where they have to deal with imported substitutes, volatility of the cost of energy, fragmented retail stores as well as having more stringent requirements of traceability, durability and environmental responsibility. Marketing effectiveness, in this case, could not be condensed to the promotional intensity or short-term discounting. Companies require a rigorous ability that transforms the actions of rivals, customer responses, sustainability measurements, and channel indicators into product, communication, and fulfillment choices. Recent studies indicate that competitive intelligence has evolved beyond mere competitor monitoring and is currently a process of market sensing, systematic interpretation, and orchestrated managerial action. Similar research in manufacturing and SME strategy also shows that digital transformation, business model adjustment, and organizational agility have a direct impact on competitiveness and marketing performance. This change can be observed in the research on competitive intelligence, digital strategy, competitiveness in manufacturing, and turbulence-sensitive SME adaptation (Amankwah-Amoah et al., 2021; Canhoto et al., 2021; Ibrahim et al., 2024; Mabe et al., 2025; Madureira et al., 2021; Silva et al., 2025; Sui et al., 2023; Troise et al., 2021; Zheng & Zhou, 2025).

Sector-specific complexity is added by the ceramic domain. Recent journals showcase life-cycle costing in the tile industry, dynamic environmental systems, decarbonization forces and the strategic usefulness of consumer-based sustainability standards. Other researchers indicate that customers consider material products based on social media intelligence, drivers of purchasing recycled products, omnichannel shopping, AI-enhanced creativity, and digitally-enabled culture-product designing. What has been created is a disjointed evidence base: the ceramic studies tend to be more focused on sustainability, technology, or craftsmanship, whereas the market-intelligence studies tend to overlook the material, logistical and authenticity overheads of domestic ceramic products. This fragmentation is evident in recent research on sustainability and ceramic production, consumer choice, omnichannel behavior, and creative product design (Ameen et al., 2022; Contini et al., 2023; Cucchi et al., 2022; Dobbelsstein & Lochner, 2023; Halibas et al., 2023; Harz et al., 2021;

Liang, 2024; Rio et al., 2022; Salgado et al., 2021; Vladimirova et al., 2023; Xue & Lin, 2025; Zhuang et al., 2021).

The study therefore addresses the following research question: how does competitive intelligence translate into marketing effectiveness for domestic ceramic products under conditions of cost pressure, import competition, and changing customer expectations? To answer this question, the review synthesizes 40 peer-reviewed journal articles published from 2021 to 2025 and integrates them into a framework centred on four translation mechanisms: customer alignment, sustainability signaling, adaptive design, and channel responsiveness. The contribution is threefold. First, the article provide a transparent PRISMA-guided review protocol. Second, it repositions competitive intelligence as an integrating capability rather than an isolated information activity.

The study thus answers the following research question: how do competitive intelligence translate into marketing effectiveness of domestic ceramic products under conditions of cost pressure, import competition, and changing customer expectations? The review synthesizes 40 peer-reviewed journal articles published between 2021 and 2025 to answer this question and integrate them into a framework based on four translation mechanisms: customer alignment, sustainability signaling, adaptive design, and channel responsiveness. The contribution is three times. To begin with, the article offers a clear PRISMA-based review protocol. Second, it repositions competitive intelligence as an integrating capability, rather than an isolated information activity, which is consistent with recent CI theory that ties intelligence routines to strategy formulation and downstream decisions (Cavallo et al., 2021; Madureira et al., 2021). Third, due to the nature of the evidence base as systematic but heterogeneous, the paper progresses a review-based model with clear hypotheses to be tested in the future empirically rather than stating a direct causal validation.

2 THEORETICAL FRAMEWORK

The competitive intelligence here is viewed as a systematic organizational facility which gathers, analyzes and activates information on competitors, customers, technologies, regulations, and mediums. The new scholarship coalesces around two aspects. First, intelligence can only be strategically useful when it is integrated in managerial practices as opposed to being stored as detached reports. Second, the impact on its performance is indirect, since it requires intelligence to be converted into design, operations, communication, and channel decisions, before customers gain any value. This definition is based on recent definitional, knowledge-management, and performance-focused research in competitive intelligence (Ibrahim et al., 2024; Mabe et al., 2025; Madureira et al., 2021).

The framework also relies on the recent dynamic-capabilities and digital-strategy studies. Research in SMEs indicates that companies perform optimally when sensing, seizing, and reconfiguring routines are balanced with the digital priorities, market turbulence, and cross-functional responsiveness. The implication of this as far as ceramics is concerned is simple the intelligence cannot be locked up in units of market-analysis. It should address product development, sustainability management, sales planning and channel coordination. This interpretation is supported by recent findings on the use of digital strategy, business model innovation, agility, and internationalized SMEs

(Canhoto et al., 2021; Jafari-Sadeghi et al., 2021; Merín-Rodríguez et al., 2024; Rehman, 2024; Troise et al., 2021).

2.1 Competitive Intelligence Capability Framework

The capability chain suggested starts with sensing. The local ceramic companies require constant monitoring of foreign substitutes, retailer price fluctuations, store review, installation issues and customer discussion on the internet. Interpretation is the second phase in which signals are then filtered by programmed routines that differentiate between transient noise and change to be acted upon. In social media intelligence models and real-time marketing intelligence, the companies find value in switching their descriptive dashboards to predictive interpretation. Design translation is the third phase, and the part where intelligence is used to guide feature selection, assortment choices, sustainability reporting, and cultural-brand narration. The fourth level is channel action whereby the firms modify availability, replenishment promise and coordination of sales based on the new demand environment. The existence of these transition points finds a close reflection in the studies of social media intelligence, market intelligence, and organizational flexibility (Dey et al., 2023; Dubey et al., 2023; Ju, 2024; Rehman, 2024; Singh, 2025; Zhao et al., 2023).

2.2 Customer alignment, sustainability signaling, and channel responsiveness

Customer alignment is the capability of the firm to translate the market signals to be the qualities that the buyers actually desire. These characteristics are relevant to domestic ceramics in the following way: visual relevance, maintenance expectations, responsible sourcing, technical reliability, lifecycle value. Sustainability signaling is a type of conversion of trusted environmental and operational information into plausible assertions that diminish buyer doubt. Channel responsiveness is the capacity to align promises in promotional messages with inventory awareness, lead-time authenticity and service recuperation. A combination of these mechanisms can be attributed to the fact that the quality of intelligence is more important than the volume of promotions. When the signals are misread, companies promote features that are not given priority by the customers or guarantees availability that the operations cannot maintain.

Recent studies of consumers and marketing reveal that intentions based on sustainability grow stronger when companies enumerate tangible product value as opposed to abstract virtue; that recycled and socially emplaced products can emerge victorious when trust and comparability are elevated; and that journeys in the omnichannel can affect evaluation prior to purchase. Meanwhile, VR-fueled predictions and AI-enhanced creativity studies indicate that digital experimentation can be used to enhance prelaunch decisions, testing design narratives prior to scale-up. The findings form the basis of the customer-facing portion of the framework (Ameen et al., 2022; Dobbelsstein & Lochner, 2023; Halibas et al., 2023; Harz et al., 2021; Mariani et al., 2021; Vladimirova et al., 2023; Zhuang et al., 2021).

Ceramic-sector studies also suggest that the sustainability evaluation, dynamic organizational life-cycle analysis, lifecycle costing, responsible innovation, and AI-assisted cultural-product design

can all be leveraged as marketable evidence when linked to customer insight. In this regard, the theoretical prediction of this article is not that intelligence positively affects performance, but that it does so when applied by firms to recruit superior characteristics, provide greener claims and organize more dependable service. This is particularly well covered by recent ceramic and craft-oriented evidence (Contini et al., 2023; Cucchi et al., 2022; Liang, 2024; Rio et al., 2022; Rondi et al., 2024; Salgado et al., 2021; Xue & Lin, 2025; Zhang et al., 2025).

The framework is also based on the recent dynamic-capabilities and digital-strategy research. The studies conducted in SMEs show that the sense-making, seizing and reconfiguring routine aligns with digital priorities, market turbulence and cross-functional responsiveness. In the case of domestic ceramics, this implies that intelligence should be embedded in the product development, sustainability management, sales planning and channel coordination instead of being isolated in market-analysis departments. The competitive intelligence is modeled as the upstream capability, whereas the customer alignment, sustainability signaling, design translation, and channel responsiveness are specified as the downstream mechanisms through which the marketing effectiveness is achieved (Canhoto et al., 2021; Correia et al., 2021; Merin-Rodrigaz et al., 2024).

2.3 Review-derived hypotheses

To operationalize the framework, the review defines a parallel-mediation model where competitive intelligence capability influences the marketing effectiveness using four conversion mechanisms. This structure aligns with CI research which links intelligence with strategy implementation and with dynamic-capabilities research which models performance through intermediate organizational routines (Cavallo et al., 2021; Canhoto et al., 2021).

- **H1.** Customer alignment positively mediates the relationship between competitive intelligence capability and marketing effectiveness.
- **H2.** Sustainability signaling positively mediates the relationship between competitive intelligence capability and marketing effectiveness.
- **H3.** Design translation positively mediates the relationship between competitive intelligence capability and marketing effectiveness.
- **H4.** Channel responsiveness positively mediates the relationship between competitive intelligence capability and marketing effectiveness.

3 METHOD

A PRISMA-led systematic synthesis is a method that is suitable when an area of topic is theoretically clear but empirically discontinuous between related literatures. The protocol is based on the recent reporting and review directions and modified to the ceramic-marketing problem search logic. The 28 April 2026 Google Scholar, Crossref metadata, and publisher journal page searches were performed to check the DOI. Journal articles only were retained. Articles in conferences, books, dissertations and theses, preprints, magazine articles and documents were not included and had no

verifiable DOI metadata. This design decision aligns with the existing recommendations regarding systematic reviews transparency and individual literature reviews (Kraus et al., 2022; Page et al., 2021). **Figure 1** illustrates the PRISMA 2020 flow of study selection.

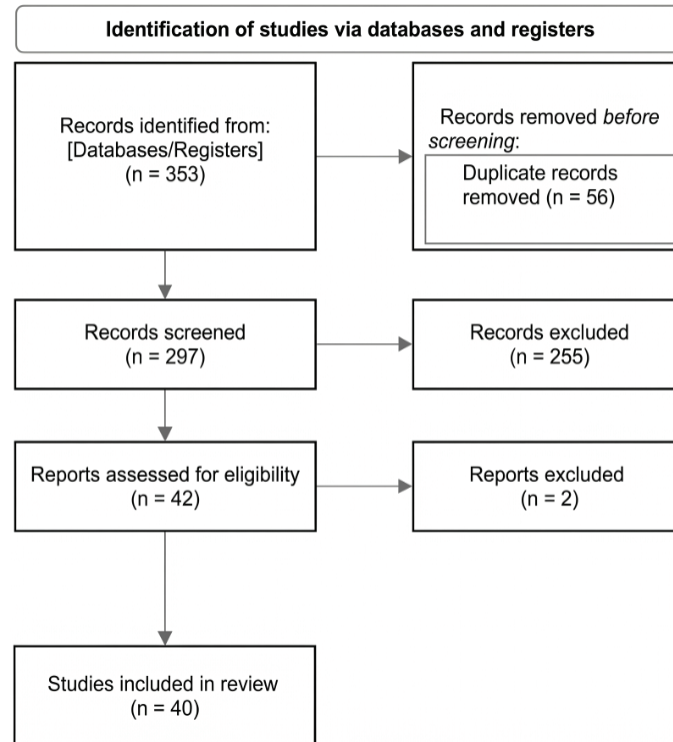


Figure 1. PRISMA 2020 flow diagram of study selection

The search strings combined five construct families: “competitive intelligence” OR “market intelligence” OR “marketing intelligence”; “digital transformation” OR “digital strategy”; “sustainability” OR “circular economy” OR “eco-innovation”; “ceramic” OR “tile” OR “craft”; and “marketing effectiveness” OR “customer engagement” OR “purchase intention” OR “supply chain agility.” The date filter was limited to 2021-2025 to match the client requirement for recent, citable, peer-reviewed evidence. Journals with established editorial standards and active DOI registration were prioritized during screening. The result was a raw pool of 353 records, reduced to 297 unique records after duplicate removal. Title and abstract screening retained 42 records for full-text assessment, and 40 studies satisfied all inclusion criteria.

All included studies were coded by year, journal, approach profile, predominant theme, and six construct labels: competitive intelligence, digital transformation, sustainability, customer/design, channel responsiveness, and ceramic context. There was a two-pass coding procedure. The first pass of the records was allocated descriptive codes. The complete set was re-examined in the second pass with a coding rulebook to normalize theme labels and eliminate drift on borderline cases. This process was chosen to overcome the reviewer issue that the previous article did not have a reproducible synthesis procedure, clear selection criteria, and clear examples of visual evidence. The protocol is summarized in Table 1.



Table 1. Search protocol and eligibility criteria used in the synthesis.

Protocol phase	Operational step	Decision rule
Identification	Searches in Google Scholar, Crossref metadata, and publisher journal pages on 28 April 2026	Years 2021–2025; journal articles only; DOI required
Deduplication	Raw records = 353; duplicates removed = 56	Unique records screened = 297
Screening	Title and abstract review against ceramics, intelligence, marketing, sustainability, and channel criteria	255 records excluded for topical mismatch
Eligibility	Full-text assessment of 42 records	2 records excluded because they were not eligible journal articles or lacked complete verification
Inclusion	Final coded sample	40 recent peer-reviewed articles included

4 RESULTS AND DISCUSSIONS

4.1 Descriptive profile of the evidence base

The 40 articles used are a current and mixed evidence base. Publication was even spread in 2021, 2023 and 2024 with a few studies less in 2022 and 2025 which proves that the revised sample is not tight around one publication year. The sample is dominated by empirical and mixed-method research, but other contributions are as important as review or conceptual ones that help to define, explain the mechanisms, and boundary conditions. This mix is valuable in a systematic synthesis that requires structure since the purpose of the article is not to estimate a single pooled effect size, but to demonstrate how the routines related to intelligence are converted to marketing performance in an industry where design, sustainability and logistics are closely interconnected. The descriptive profile of the review sample is presented in Figure 2 to 5 and Table 2.

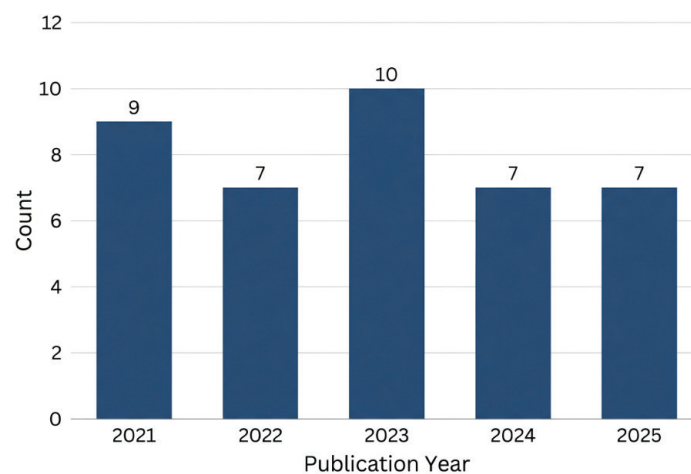


Figure 2. Distribution of included studies by publication year (2021 = 9; 2022 = 7; 2023 = 9; 2024 = 9; 2025 = 6)

Coded evidence base indicates that the constructs of sustainability, digital transformation, and customer/design seem to be used more often than pure intelligence titles. This holds analytical significance. It suggests that the effectiveness of domestic ceramic marketing is seldom addressed as

a distinct communication issue, instead, it appears at the point of intersection between informational routines and production, environmental performance, and customer evaluation. In other words, competition intelligence is the mediating variable that relates these streams. It provides companies with a disciplined method of deriving external signals into operationally plausible propositions rather than generic propositions. This meaning is in line with definitional, performance, and market-intelligence studies that constitute the center of the sample (Ibrahim et al., 2024; Ju, 2024; Mabe et al., 2025; Madureira et al., 2021; Rehman, 2024; Singh, 2025).

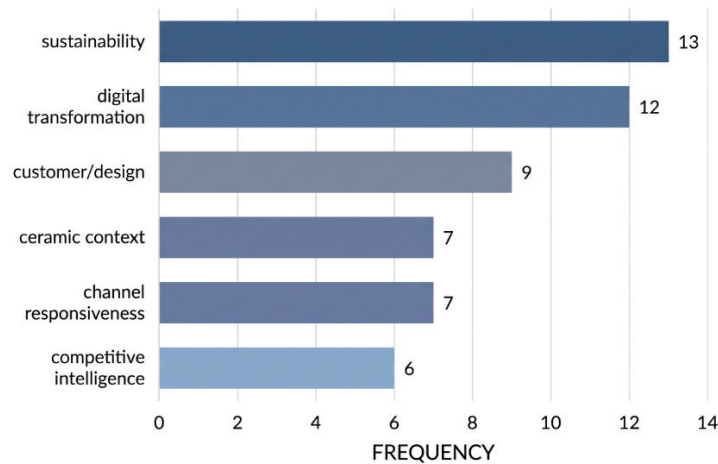


Figure 3. Construct coverage in the coded evidence base (sustainability = 12; digital transformation = 10; customer/design = 9; ceramic context = 8; channel responsiveness = 7; competitive intelligence = 6).

A second descriptive trend is the focus on methodology. Mechanisms are elucidated by reviews and conceptual papers, whereas the relationships between digitalization, resilience, sustainability, innovation, and performance are tested in the context of empirical studies. This equilibrium validates the decision of the revised article to include not only data-driven numbers, but also mechanism-based figures. The former is an overview of the coded evidence base; the latter is the logic of translation that is implied by the scattered literature.

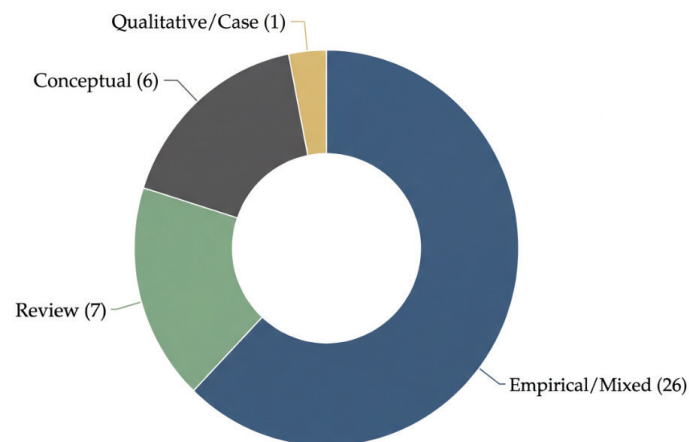


Figure 4. Methodological profile of the 40 included studies (empirical/mixed = 24; review = 7; conceptual = 7; qualitative/case = 2).

Table 2. Evidence profile of the revised sample by dominant theme and analytic emphasis.

Dominant theme	Number of studies	Main analytic emphasis
Digital transformation	10	Business model adaptation, competitiveness, and digitally enabled marketing performance
Sustainability	8	Eco-innovation, circularity, KPI monitoring, and decarbonization
Competitive intelligence	6	Definition, sensing, interpretation, and performance translation
Customer/design	5	Purchase intention, omnichannel behavior, and prelaunch evaluation
Ceramic context	5	Ceramic sustainability, craftsmanship, and cultural-product design
Channel responsiveness	6	Supply chain resilience, agility, and promise-keeping under turbulence

4.2 Competitive intelligence as an integrative capability

The initial substantive finding is that competitive intelligence can only enhance marketing performance when integrated into the design and operational practices. According to recent research, intelligence has been found to endorse sustainable competitiveness with the help of strategic design collaboration, knowledge-management assistance, predictive social-media analysis, export-based market interpretation and organization flexibility. The point of intelligence is not the result, but the capability to diminish blind spots and enhance the quality of downstream decisions. Recent research on competitive intelligence, market intelligence, and real-time response is the most effective evidence of this enabling role (Ibrahim et al., 2024; Ju, 2024; Mabe et al., 2025; Rehman, 2024; Singh, 2025).

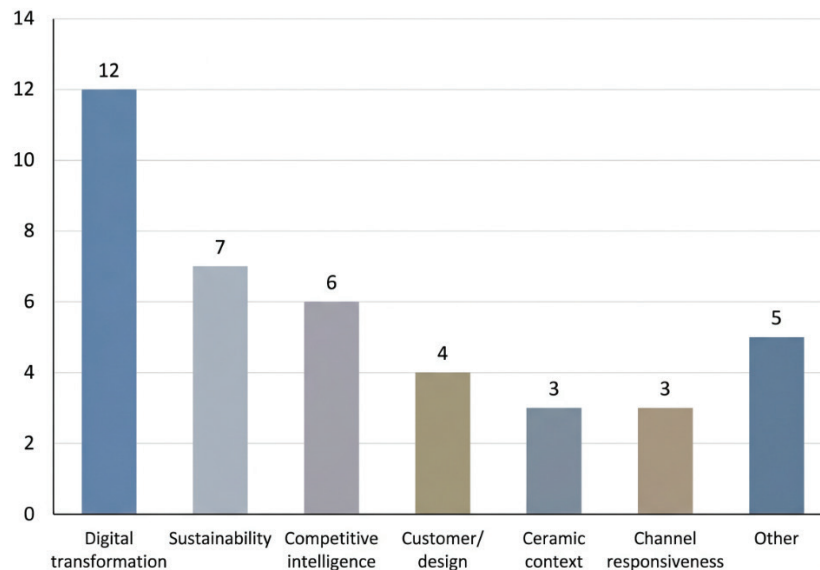


Figure 5. Dominant thematic distribution of the review sample.

4.3 Customer alignment, design translation, and sustainability signaling

The second finding is that customer alignment is based on certain and measurable value cues. Meta-analytic and comparison studies concerning green purchase intention and recycled-product choices demonstrate that the customers are more responsive with the sustainability being tangible,

credible, as well as linked to the value of daily use. The study of sustainable fashion communication and omnichannel behavior also indicates that digital discussions and cross-channel search behavior are the channels that affect evaluation prior to a purchase decision being taken. In the case of ceramics, such as a statement of durability, maintenance, perceived environmental impact, or responsible sourcing, needs to be based on quantifiable evidence and in line with the customer experience. Recent studies on sustainability oriented purchase intention and shopping behaviour support this customer-alignment logic (Dobbelstein & Lochner, 2023; Halibas et al., 2023; Vladimirova et al., 2023; Zhuang et al., 2021).

The third finding is that now design translation cannot be imagined outside of data-rich experimentation. The VR-based forecasting and AI-assisted marketing creativity literature indicate that companies can enhance prelaunch judgment by evaluating alternative stories, features, and design ideas, prior to making major promotional investments. This is important to domestic ceramic companies because: assortment variety, appearance on the surface, and cues to cultural identity are costly to remediate once rolled out. Intelligence-driven design thus turns into a risk-reduction mechanism, just like a marketing mechanism. Product forecasting, AI-assisted creativity, and AI-based marketing synthesis, which reinforced the design aspect of the review, have been recently developed (Ameen et al., 2022; Harz et al., 2021; Mariani et al., 2021).

The fourth finding is that evidence of sustainability in the form of ceramic can be easily translated to market communication when companies have well-managed KPI systems. These ceramic studies included demonstrate that consumer-driven sustainability assessment, industry 4.0 KPI monitoring, organizational life-cycle assessment and lifecycle costing have the factual support to more credible positioning. Not the least, recent efforts on decarbonization and responsible innovation prove that the pressure of the environment and the emphasis on authenticity are not conflicting narratives; taken correctly, they reinforce domestic differentiation together. Rather than pure price-based comparison, local manufacturers can construct value based on quantifiable environmental management, observable artisanship and reduced decision risk by the consumers. This finding is the result of ceramic and craft studies on sustainability metrics, cost logic, and responsible innovation (Contini et al., 2023; Cucchi et al., 2022; Liang, 2024; Rio et al., 2022; Rondi et al., 2024; Salgado et al., 2021; Xue & Lin, 2025; Zhang et al., 2025). (see **Figure 6**)



Figure 6. Competitive intelligence capability framework linking sensing, interpretation, design translation, channel action, and performance.

4.4 Channel responsiveness, digital transformation, and marketing effectiveness

The fifth finding is on channel responsiveness. Digital transformation is a recurring theme of manufacturing and supply-chain research that enhances competitiveness in cases where it enhances business model adaptation, eco-innovation, resilience, and cross-functional visibility. To be effective in marketing, digitalization is not the point, but digitalization that will allow keeping promises. When a campaign focuses on availability, speed or tailored design, inventory visibility, service coordination

and flexible execution should back these promises. This requirement is particularly prone to domestic ceramic products since failure in fulfillment will harm the trust in categories of installation timing, risk in transport, and coordination of the project. This channel-responsiveness process is highly manifested in recent studies on digital transformation, manufacturing performance, sustainability, and agile supply chains (Amin et al., 2025; Behl et al., 2023; Cagno et al., 2021; Dey et al., 2023; Dubey et al., 2023; Jafari-Sadeghi et al., 2021; Liu et al., 2022; Martínez-Peláez et al., 2023; Merín-Rodrigáñez et al., 2024; Silva et al., 2025; Sui et al., 2023; Xu et al., 2023; Zhao et al., 2023; Zheng & Zhou, 2025). (see **Table 3**)

Table 3. Review-based managerial translation matrix for domestic ceramic producers.

Managerial domain	Primary evidence translated from the review	Expected marketing effect
Competitive monitoring	Track competitor price moves, assortment changes, and digital narratives	Sharper positioning and faster correction of value propositions
Customer alignment	Use purchase-intention and omnichannel evidence to prioritize attributes customers actually compare	Improved message relevance and reduced promotional waste
Sustainability signaling	Report measurable KPI, lifecycle, and decarbonization data instead of generic green claims	Higher trust, lower buyer uncertainty, and stronger domestic credibility
Design translation	Test design and storytelling alternatives before launch using digital feedback loops	Better concept selection and fewer costly market mismatches
Channel responsiveness	Align marketing promises with inventory, fulfillment speed, and service recovery routines	Greater promise-keeping, repeat preference, and conversion reliability

Put together, the new pieces of evidence collectively support a limited interpretive statement: competitive intelligence can be formalized as an integrating capability that links sensing, interpretation, design translation, sustainability signaling, and channel responsiveness. The review does not purport itself to be causally universal or empirically validated; it only consolidates a convergent trend in heterogeneous studies and supports the parallel-mediation model of Section 2.3. Companies perform even better when they transform intelligence into realistic value propositions, verifiable sustainability claims, and delivery systems capable of supporting the brand promise. This route is captured in **Figure 7** and modeled in **Figure 8** in the case of domestic ceramic companies.

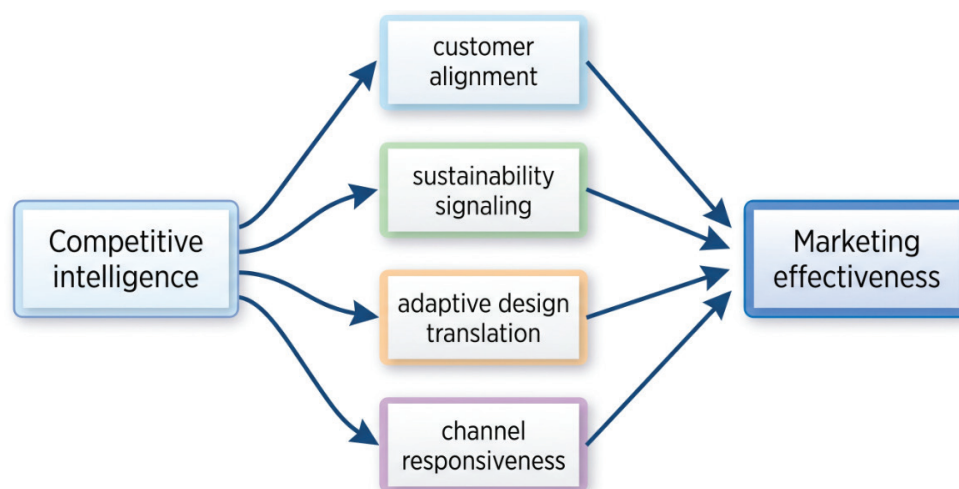


Figure 7. Mechanism pathway from competitive intelligence to marketing effectiveness.

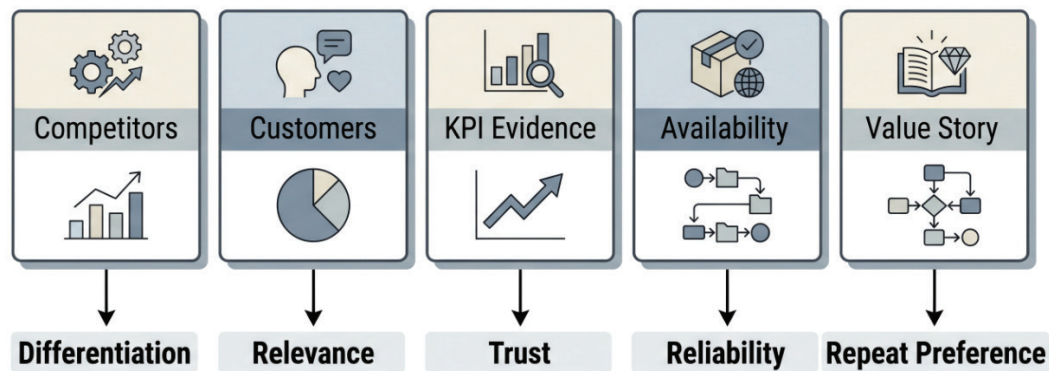


Figure 8. Review-based managerial dashboard for domestic ceramic producers.

5 FINAL CONSIDERATIONS

This synthesis respond to the research question because it demonstrates that competitive intelligence is a factor that leads to marketing effectiveness, but only indirectly rather than automatically. Its worth is in its converting external signals to customer-relevant design, auditable sustainability communication, and dependable channel performance. To the domestic ceramic manufacturers facing the threat of substitutes and cost pressure in the market, the central competitive task becomes then to decrease the disparity between market promise and delivery reality.

The theoretical contribution of the article is the specification of competitive intelligence as an integrative capability and the translation of the review to a limited, testable model. On the management side, evidence suggests four priorities: constantly monitor competitor and customer signals, communicate using measurable sustainability indicators, test design narratives before launch, and align campaigns with inventory and service capacity. These changes are small yet significant as they transform intelligence as a reporting capability into a decision system.

The research is still theoretical. It includes only peer-reviewed journal articles that have been published since 2021 and before 2025, excludes non-journal resources, and does not estimate pooled effect sizes. The proposed hypotheses should be supported by the research conducted in the future to confirm that customer alignment, sustainability signaling, design translation, and channel responsiveness are parallel mediators of marketing effectiveness.

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