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Determinants of E-Commerce Aspiration and Technology Prioritization Among Independent Brick-and-Mortar Retailers in North America

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Abstract

Independent brick-and-mortar retailers face increasing pressure to expand into digital channels, yet limited empirical evidence exists on how small and medium-sized retailers prioritize digital transformation compared to larger enterprises. This study examines online strategy, technology adoption, and artificial intelligence (AI) sentiment among independent retailers in North America.

A cross-sectional online survey of 71 items was conducted across thirteen retail verticals, yielding 3,317 responses, of which 1,985 were complete (59.8% completion rate). A focused sub-sample of established independent retailers (EIR) was analyzed separately. EIRs were defined as retailers generating more than USD 500,000 in annual gross transaction volume (GTV), a threshold chosen to identify businesses with sufficient scale to pursue strategic digital investments.

The findings indicate a substantial aspiration gap: 37.5% of EIR respondents currently operate a dedicated e-commerce store while 52.6% identify one as their ideal state, a 15-percentage-point shortfall. Retailers prioritize online channels as an extension of their physical stores, with driving local foot traffic (50.9%) ranking as the most important non-transactional objective. Profitability and margin optimization (35.4%) surpassed new customer acquisition (21.1%) as the principal online focus, reflecting heightened sensitivity to rising supplier costs and regulatory changes.

In terms of technology priorities, social commerce (28.9%) and Buy-Online-Pick-up-In-Store (27.6%) were favored over AI-based tools. Only 12% of respondents reported strong satisfaction with how well their website reflects their in-store brand. AI sentiment remains divided, with concerns centered on data accuracy (58.0%) and privacy (52.6%).

Overall, established independent retailers perceive online presence primarily as a tool for profitability and local traffic generation rather than as a standalone growth channel, favoring revenue-generating technologies over operational AI.

Keywords: digital retail transformation; e-commerce adoption; phygital retail; small and medium-sized enterprises; artificial intelligence sentiment; omnichannel strategy

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1. Introduction

Independent brick-and-mortar retailers operate at the intersection of two structural shifts in modern commerce. On one hand, consumers increasingly expect their favorite neighborhood stores to maintain a credible, consistent online presence that mirrors the in-store experience, supports product discovery, and enables flexible fulfillment. On the other hand, rising supplier costs, tariff volatility, labor constraints, and intensifying competition from hyperscale marketplaces have compressed margins, forcing smaller operators to be strategic about where they deploy limited time, capital, and attention (Reinartz et al., 2019; Verhoef et al., 2021). Digital transformation for independent retailers is therefore not an optional growth bet but a survival-relevant reallocation problem.

Prior academic and industry research on retail digital transformation has tended to focus either on large, multi-location chains with dedicated e-commerce teams or on pure-play direct-to-consumer brands, both of which enjoy resources and technical maturity that are materially different from those available to single-store and small-chain independents (Grewal et al., 2020; Hagberg et al., 2016). As a result, generalizable empirical evidence about how small and medium-sized retailers actually prioritize online channels, which emerging technologies they consider most urgent, and how they perceive the risks and benefits of artificial intelligence remains limited. This gap is consequential: retail technology platforms, payment providers, merchant banks, and policymakers increasingly design products and programs for "the independent retailer" without robust empirical profiles of the segment.

This study addresses that gap by analyzing a large, primary-collected dataset of North American retailers across thirteen retail verticals. The analysis pursues three objectives. First, it documents the gap between retailers' current and aspirational online states, thereby quantifying latent demand for upgraded e-commerce capability. Second, it identifies which online objectives, challenges, and emerging technologies independent retailers are actively prioritizing and contextualizes these preferences against the broader macroeconomic environment facing the sector. Third, it characterizes retailers' sentiment toward adopting artificial intelligence for specific operational decisions, distinguishing between domains of AI acceptance and domains of AI resistance. In combination, these three objectives support a coherent descriptive model of how established independent retailers currently conceptualize digital transformation.

The remainder of the paper is organized as follows. Section 2 reviews relevant literature on retail digital transformation, the phygital paradigm, social commerce, and AI adoption. Section 3 describes the research design and sample, including the rationale for the established-independent-retailer segment definition. Section 4 reports empirical findings. Section 5 discusses the results in light of the existing literature, and Sections 6 and 7 consider limitations and conclusions.

2. Literature Review

2.1 Digital Transformation in Retail

Digital transformation in retail refers to the integration of digital technologies into all aspects of the retail business, fundamentally changing how retailers operate, interact with customers, and deliver value (Verhoef et al., 2021). Research has consistently shown that digital transformation encompasses more than the adoption of e-commerce: it includes the integration of customer data, the reconfiguration of supply chains, and the redesign of store operations around omnichannel fulfillment (Reinartz et al., 2019). Grewal et al. (2020) argue that small independent retailers face a particularly acute "digital maturity gap," in which the cost and complexity of enterprise-grade digital tooling outstrip the resources available to single-store operators, producing a structural disadvantage relative to national chains.

2.2 The Phygital Paradigm

A growing body of work conceptualizes retail as a "phygital" activity in which physical and digital channels are mutually reinforcing rather than substitutive (Hagberg et al., 2016; Mele & Russo-Spena, 2022). In this view, a retailer's website and social channels do not necessarily compete with the physical store; they can act as discovery and qualification layers that drive higher-intent visits to the store. Empirical evidence from the small-retailer segment suggests that local-brand awareness, credibility signaling, and community building are at least as important as pure transactional volume in motivating independent retailers' online investments (Pantano & Dennis, 2019).

2.3 Social Commerce and Flexible Fulfillment

Social commerce — the sale of products through social media platforms — has become a structurally important channel, particularly for apparel, accessories, and lifestyle categories. Consumer studies show that younger cohorts, especially Generation Z and younger Millennials, increasingly discover and purchase products directly within social platforms such as Instagram, Facebook, and TikTok Shop (Lin et al., 2023). In parallel, flexible fulfillment mechanisms such as Buy-Online-Pick-up-In-Store (BOPIS) and local same-day delivery have matured from pilot status into mainstream expectations, with mass-consumer reach in the United States and double-digit year-over-year growth rates (Digital Commerce 360, 2025). For brick-and-mortar independents, BOPIS is particularly attractive because it monetizes online traffic while preserving the in-store touchpoint.

2.4 Artificial Intelligence in Retail

Applications of artificial intelligence in retail span demand forecasting, dynamic pricing, personalization, customer segmentation, marketing automation, and workforce scheduling (Davenport et al., 2020; Shankar, 2018). While large retailers have begun deploying AI at scale, adoption among independent retailers has lagged, in part because of concerns about model reliability, data privacy, loss of control, and perceived misalignment with the unique nuances of small-store operations (Grewal et al., 2020). Research on AI acceptance more generally suggests that users differentiate sharply between domains in which AI augments routine analytical tasks (often accepted) and domains in which AI is perceived to usurp judgment over people, pricing, or customers (often resisted) (Longoni et al., 2019).

2.5 Resource Constraints and Strategic Prioritization

Finally, a persistent theme in the small-retailer literature is the role of resource constraints — time, talent, and capital — in shaping technology adoption choices (Pantano & Dennis, 2019). Unlike enterprise retailers, independents typically combine ownership and operational roles, meaning that the business owner often personally handles buying, merchandising, marketing, and staff scheduling. Under such constraints, technology that directly protects margin or generates revenue tends to dominate technology that merely promises long-run operational efficiency. This framing is useful for interpreting the present survey's findings on technology prioritization and AI sentiment, and it also motivates the segment definition used in the present study, which deliberately excludes retailers operating below the revenue scale at which such investments become feasible.

3. Materials and Methods

3.1 Research Design

This study employed a quantitative, cross-sectional online survey design. The survey instrument was designed to characterize independent retailers' current business goals, operational challenges, online presence, technology priorities, and AI sentiment. A cross-sectional design is appropriate because the objective is descriptive and comparative characterization of the segment rather than inference of longitudinal causal effects (Creswell & Creswell, 2018).

3.2 Population, Sample, and Segment Definition

The target population comprised independent retailers operating brick-and-mortar stores across multiple verticals in North America (primarily the United States and Canada) and, for comparison, other geographies. Invitations to participate were distributed via email and in-product notifications to retailers who operated at least one physical store and used modern point-of-sale infrastructure.

A total of 3,317 retailers initiated the survey and 1,985 yielded complete, analyzable responses, corresponding to a completion rate of 59.8%. Approximately 2,540 of the respondents were located in North America. Approximately 64% of respondents were business owners, with the remainder comprising managers, store leaders, executives, and general staff. Within the completed-response pool, approximately 46% represented businesses generating more than USD 500,000 in annual gross transaction volume (GTV). Respondents represented thirteen retail verticals, with apparel and footwear the largest single vertical (see Section 4.9 and Table 6 for the full vertical distribution).

Segment definition. Because the research is primarily concerned with retailers that have crossed the operational threshold at which digital transformation investments become strategically meaningful, a sub-sample was constructed comprising completed responses from North American retailers generating more than USD 500,000 in annual GTV, irrespective of vertical.

This sub-sample is designated throughout this paper as the *established independent retailer (EIR)* segment and serves as the primary analytical unit for online-presence-specific findings. Parallel figures for the broader North American (NoAm) sample — which includes North American retailers below the USD 500,000 threshold — are reported throughout the results to provide a check against segment-specific artifacts.

Rationale for the USD 500,000 revenue threshold. The selection of a USD 500,000 annual GTV cutoff was motivated by four considerations. First, on theoretical grounds, prior work on SMB digital transformation argues that retailers operating below this revenue scale typically lack both the financial surplus and the staff capacity to invest in advanced digital tooling beyond free consumer-facing platforms; at sub-scale revenue levels, the owner personally executes essentially all functions, and strategic technology adoption is structurally precluded (Grewal et al., 2020; Pantano & Dennis, 2019). Second, on practical grounds, the threshold corresponds to an inflection point at which retailers typically employ at least two to three full-time staff members beyond the owner, maintain active supplier relationships that generate purchase-order volumes sufficient to justify inventory-management software investments, and possess the cash-flow stability required to amortize multi-year technology commitments. Third, U.S. Census Bureau retail-subsector summary statistics indicate that the USD 500,000 mark separates the lower quintile of single-establishment specialty retailers from the middle three quintiles, lending external validity to its use as a lower analytical bound. Fourth, substantive considerations related to measurement quality argue for the restriction: retailers below the threshold are structurally unlikely to be making active choices about e-commerce platforms, AI tooling, or emerging-technology priorities in the sense the survey items ask about, meaning their responses on these dimensions reflect aspirations unconstrained by operational reality and are therefore more vulnerable to both upward-bias (social desirability) and downward-bias (resource despair) measurement error. Restricting the primary analysis to retailers with credible investment capacity thus improves interpretive clarity.

Importantly, the EIR segment is not restricted to any particular retail vertical. All thirteen verticals represented in the survey are represented in the EIR segment in proportion to their share of the completed-response pool. Table 1 summarizes the overall sample and the EIR segment definition.

Table 1. Sample characteristics and segment definition.

Characteristic	Value
Total survey respondents	3,317
Completed responses	1,985
Completion rate	~59.8%
North American respondents	~2,540
Business owners among respondents	64%
Completed responses with >USD 500K annual GTV	~46%
Number of survey items	71
Number of retail verticals covered	13
EIR segment definition	North American retailers with >USD 500,000 annual GTV (all verticals)

Note: EIR = established independent retailer segment. NoAm = North American sample, comprising all completed responses from North American respondents regardless of revenue.

3.3 Instrument

The 71-item survey instrument was organized around six thematic blocks: (i) general business profile and confidence; (ii) strategic goals and operational challenges; (iii) current and desired online-presence states; (iv) non-transactional online objectives; (v) emerging technology priorities and adoption barriers; and (vi) AI sentiment by operational domain. Most items were answered on five- or seven-point ordinal scales; several items permitted multi-selection ("select all that apply") or forced ranking ("select up to four"). Where applicable, items were adapted from established instruments in the retail digital-transformation and technology-acceptance literature.

3.4 Data Analysis

Because the research objective is descriptive and comparative characterization rather than hypothesis-testing, the principal analytical procedures are frequency distributions, cross-tabulations, and comparative percentages between the EIR segment and the broader NoAm sample. Results are presented as the proportion of respondents selecting a given option, weighted equally across completed responses within the segment of interest. For multi-select items, reported proportions reflect the share of respondents selecting the option and therefore do not sum to 100%. For ordinal items, "top-two-box" aggregates (e.g., "extremely significant" plus "very significant") are reported where appropriate and are clearly identified.

4. Results

4.1 Business Confidence and Strategic Goals

Respondents expressed broadly positive but modulated expectations about their business over the next twelve months. Approximately 49.5% reported some degree of confidence that their business would grow (combining "extremely confident" at 6.0%, "very confident" at 11.6%, and "confident" at 31.9%, excluding the additional 27.1% who were only "slightly confident"). A further 16.4% were "unsure," and 5.8% expected to downsize. Taken together, fewer than one in five retailers expressed high confidence in growth, suggesting a cautiously optimistic rather than exuberant operating posture.

When asked to identify up to four strategic business goals, respondents reaffirmed a top-line orientation: sales growth (23.2% of all goal mentions), attracting new customers (13.0%), increasing e-commerce sales (11.7%), and increasing online presence (9.1%) together accounted for more than half of all goal selections. Cost-side objectives such as reducing operational costs (6.5%) and reducing product or inventory costs (5.5%) ranked lower than revenue-side objectives, though their presence in the top tier indicates that margin pressure is an active concern. Table 2 reports the ranked goal distribution.

Table 2. Ranked business goals for the next twelve months (percentage of total goal mentions).

Goal	Share of mentions (%)
Sales growth	23.2
Attract new customers	13.0
Increase e-commerce sales	11.7
Increase online presence	9.1
Reduce operational costs	6.5
Retain existing customers	6.0
Improve customer loyalty	5.9
Expand product or service offerings	5.6

Reduce product or inventory costs	5.5
Improve customer service	4.0
Build your brand	3.8
Scale in locations or offering	3.4

Note: Respondents could select up to four goals; percentages reflect the share of total goal mentions across all respondents.

Operationally, rising supplier costs (16.4% of challenge mentions) and regulatory changes such as tariffs and taxes (13.8%) were the two most frequently cited pressures. Staffing and labor costs (10.0%), cash flow pressure (8.8%), competitive pressure from large retailers such as Amazon and Walmart (8.4%), lower customer spend (8.1%), and lower foot traffic (7.9%) formed a secondary cluster. Technology complexity was cited by only 3.1% of respondents, suggesting that for this segment the binding constraint on operations is macroeconomic and competitive rather than narrowly technical.

4.2 The Online Presence Aspiration Gap

Retailers were asked to describe both their current and ideal online situations from a common list of options (multi-select permitted). In the EIR segment, 60.6% reported maintaining an active social media presence, 52.6% reported using a website primarily as a digital storefront to drive foot traffic, and 37.5% reported operating a dedicated e-commerce store. Smaller shares reported selling directly on social media (11.1%) or on online marketplaces (9.7%), and 15.6% reported having no online presence of any kind. Corresponding figures for the broader NoAm sample were 61.4%, 46.0%, 30.7%, 10.9%, 8.4%, and 20.3%, respectively, confirming that the EIR segment is digitally more mature than the broader retailer population.

When the same options were presented as ideal rather than current states, the distribution shifted materially. In the EIR segment, 52.6% identified a dedicated e-commerce store as an ideal end state, compared with 37.5% who currently operate one — a 15.1-percentage-point aspiration gap. In the NoAm sample, the gap was even larger, at approximately 20.2 percentage points (50.9% ideal versus 30.7% current). A website primarily serving foot traffic held steady as both a current and ideal state, indicating that retailers do not view store-driving websites as transitional but rather as a durable component of their online portfolio. Table 3 summarizes current versus ideal online states for the EIR segment.

Table 3. Current versus ideal online situation: EIR segment (multi-select; percentages).

Online state	Current (%)	Ideal (%)	Gap (pp)
Dedicated e-commerce store with consistent online sales	37.5	52.6	**+15.1**
Website primarily serving as a digital storefront to drive foot traffic	52.6	52.6	0.0
Social media presence for marketing and customer engagement	60.6	48.5	-12.1
Sell directly on social media platforms	11.1	11.1	0.0
Sell products on online marketplaces	9.7	—	—
No online presence or sales	15.6	10.0	-5.6

Note: pp = percentage points. Positive gap values indicate aspirational upgrade; negative values indicate that the option is more commonly a present reality than an idealized end state.

The pattern is consistent with a retail segment whose members have experimented broadly with online channels and now wish to consolidate their online activity around a transactional e-commerce backbone rather than a dispersed social-media-only presence.

4.3 Non-Transactional Objectives for Online Presence

Beyond direct product sales, retailers were asked how important each of several non-transactional objectives was to their online presence. Within the EIR segment, the three highest-scoring extremely-important objectives were driving in-store traffic from local customers (50.9%), increasing engagement from local customers (47.5%), and building brand awareness in the local community (46.9%). Providing customer service and support (44.6%), creating a community around the brand (42.8%), establishing business legitimacy and credibility (42.2%), and showcasing product expertise and education (41.4%) followed in the same tier. Collecting customer data and insights ranked substantially lower at 21.4%.

The ordering is striking: local-market objectives (traffic, engagement, awareness) systematically outrank data-collection objectives, and all but the last objective cluster at or above the 40% "extremely important" threshold. For established independent retailers, the online presence is thus primarily instrumentalized as a local-commerce amplifier rather than as a data-acquisition engine.

4.4 Primary Online Focus Areas for Improvement

To identify where retailers are currently directing their online-improvement efforts, respondents indicated whether each of several focus areas was a primary area of improvement for their online business. Within the EIR segment, the leading primary focus was profitability and margin optimization, selected by 35.4% of respondents, followed by customer retention and loyalty (26.3%), data analytics and reporting (22.7%), acquiring in-store customers from online channels (22.4%), acquiring new online customers (21.1%), streamlining operations (19.6%), understanding the audience (19.3%), and personalization (17.7%). The broader NoAm sample produced directionally similar rankings, with customer retention and loyalty rising to 30.8% and in-store customer acquisition from online channels rising to 26.1%.

Two patterns merit attention. First, profitability and margin optimization is the single most frequently cited focus area — exceeding both new-online-customer acquisition and in-store-customer acquisition from online channels by a wide margin — which dovetails with the challenge data showing rising supplier costs and regulatory changes as the most frequently cited macro pressures. Second, customer retention and loyalty outrank customer acquisition of either type, reinforcing the literature finding that under margin pressure retailers prefer to protect existing relationships rather than pay to win new ones (Grewal et al., 2020).

4.5 Challenges to Online Presence

When asked how significant each of several challenges was to their online presence, EIR respondents rated time and resources available to focus on the online business as the most significant challenge, with 53.1% reporting it as either extremely or very significant. Intense competition from larger retailers and marketplaces followed at 51.3%, and content creation including imagery, product photography, blogs, and social media at 49.4%. Designing and managing the website (47.1%), measuring the effectiveness of online efforts (43.2%), and finding time to manage online activities (38.6%) formed a secondary cluster. Rising last-mile delivery costs (32.1%), attracting and retaining e-commerce talent (32.0%), managing returns and reverse logistics (28.6%), cyber fraud (23.8%), and navigating complex data-privacy regulations (19.4%) completed the list.

The top three challenges — time, competition, and content — describe a capacity bottleneck more than a capability bottleneck. That is, retailers do not report that the relevant technologies are unavailable or unintelligible; they report that the human effort required to operate them competitively is beyond their reach. This finding is consistent with the resource-constraint framing in the SMB digital-transformation literature (Pantano & Dennis, 2019).

4.6 Technology Adoption Priorities

Table 4 reports the proportion of EIR and NoAm respondents who identified each of several emerging technologies as a top or high priority to adopt or integrate in the next twelve to eighteen months. Social commerce — selling directly on social media platforms — was the single highest-ranked priority for both segments, at 28.9% in the EIR segment and 29.0% in NoAm. Enhanced BOPIS and local delivery options ranked

second in both segments (27.6% EIR, 28.3% NoAm). Notably, three AI-oriented technologies occupied the middle and lower tiers: AI for operational efficiency (26.5% EIR, 24.4% NoAm) ranked third, AI for personalization ranked fifth in EIR (18.0%) and sixth in NoAm (19.5%), and other revenue-adjacent technologies such as subscription models and dropshipping also fell between the social-commerce leader and the AI tier.

Table 4. Emerging technologies ranked as a top or high priority to adopt within twelve to eighteen months.

Technology / trend	EIR (%)	NoAm (%)
Social commerce (selling on social platforms)	28.9	29.0
Enhanced BOPIS and local delivery	27.6	28.3
AI for operational efficiency (forecasting, dynamic pricing)	26.5	24.4
Dropshipping products	20.3	17.1
AI for personalization and recommendations	18.0	19.5
Sustainable e-commerce practices	17.3	19.5
Subscription models / recurring revenue	16.0	18.8
Cross-border e-commerce expansion	12.9	14.3

Note: Respondents rated each technology on a priority scale; reported values are the combined share of "top priority" and "high priority" responses.

This pattern suggests that, for the established-independent-retailer segment, revenue-generating channel technologies (social commerce, BOPIS) are currently prioritized above operational automation technologies (AI for forecasting, dynamic pricing, personalization). This runs counter to the broader industry narrative, which often foregrounds AI as the defining short-term technology agenda for retail.

4.7 Brand Representation Satisfaction

Retailers were asked how satisfied they were that their website and online presence accurately reflected their brand's in-store look and feel. Within the EIR segment, only 12.2% reported being "extremely satisfied," while 34.5% were "somewhat satisfied," 31.5% were "neutral," 11.0% were "slightly dissatisfied," and 10.8% were "not very satisfied." The NoAm sample produced broadly similar distributions. The concentration of respondents in the "somewhat satisfied" and "neutral" middle suggests that while acute dissatisfaction with brand fidelity is rare, enthusiasm is also rare, consistent with the high proportion of respondents reporting that content creation is a significant challenge.

4.8 Artificial Intelligence Sentiment

AI sentiment was measured by asking retailers how comfortable they would be using AI for decisions or automation across seven operational domains. Responses ranged from "I don't want to use AI here" to "I want to use AI here," with intermediate levels of comfort. Table 5 reports the distributions for the EIR segment.

Table 5. AI comfort by operational domain: EIR segment (percentages).

Operational domain	Don't want	Not at all	Slightly	Moderately	Very	Want to use
Inventory: forecasting or purchase orders	19.9	15.4	18.5	13.7	6.5	26.0
Marketing: campaigns / recommendations	17.0	18.4	18.7	16.1	4.9	24.4
Customer management: segmentation / loyalty	21.1	19.9	16.7	16.1	3.8	22.7
Insights: interpreting business data	20.5	19.4	21.7	15.4	4.4	18.1
Fulfilment: shipping or stock allocation	24.5	17.6	19.9	17.2	3.7	16.6
Staffing: scheduling or task assignment	31.8	19.7	14.0	13.9	3.7	16.6
Pricing: suggesting prices or discounts	28.6	19.1	17.6	15.1	3.5	16.4

Note: "Don't want" = "I don't want to use AI here." "Want to use" = "I want to use AI here." Rows may not sum to 100% because of rounding.

Three patterns emerge from Table 5. First, no single operational domain drew a majority of respondents into the "want to use AI" or "very comfortable" categories; the aggregate pro-AI share ranged from 19.9% for pricing to 32.5% for inventory forecasting. Second, the two domains with the highest combined "don't want" plus "not at all comfortable" rejection rates were staffing (51.5%) and pricing (47.7%), both of which involve decisions traditionally made by the owner with discretionary judgment over people and margin. Third, AI is most accepted in inventory forecasting (where it is a quantitative aid to purchasing decisions) and in marketing (where it automates content production). This ordering is consistent with the Longoni et al. (2019) finding that consumers and practitioners alike prefer AI in domains perceived as technical or routine, and resist AI in domains perceived as judgment-intensive.

When asked to identify their primary concerns about using AI in the business, the leading responses in the EIR segment were the accuracy and reliability of AI insights (58.0%), data privacy and security (52.6%), the potential cost of the features (33.1%), lack of control or understanding of how AI works (34.4%), and the belief that AI cannot understand unique business needs (34.8%). Only 19.4% reported no significant concerns at the time of the survey.

4.9 Vertical Composition and Cross-Vertical Observations

The sample spans thirteen retail verticals, representing the principal categories of specialty independent retail in North America. Table 6 reports the distribution of completed responses across verticals. Apparel and footwear was the single largest vertical at 28.7% of respondents, followed by gift shops (13.0%) and books, toys, and hobby (8.5%). Five mid-sized verticals each accounted for between roughly 4.2% and 7.2% of respondents: sporting and outdoors, bicycle, health and beauty supplies, home and garden, and pet. Four smaller verticals — vape and smoke, personal care, jewelry and accessories, and food and beverage — each accounted for between 3.3% and 4.5% of respondents, and electronics accounted for 2.0%. This distribution is broadly representative of the mix of specialty independent retail observed in publicly available U.S. industry classifications, though apparel and footwear is somewhat over-represented and grocery-adjacent categories are under-represented relative to total U.S. retail establishment counts.

Table 6. Distribution of completed responses across retail verticals.

Vertical	Share of responses (%)
Apparel and footwear	28.7
Gift shop	13.0
Books, toys, and hobby	8.5
Sporting and outdoors	7.2
Bicycle	6.9
Home and garden	6.6
Health and beauty supplies	6.5
Vape and smoke	4.5
Pet	4.2
Personal care	3.7
Food and beverage	3.4
Jewelry and accessories	3.3
Electronics	2.0

Note: Shares sum to approximately 98.5% of completed responses; the residual represents respondents who selected "other" vertical categories not reported separately.

Although a detailed vertical-by-vertical analysis is beyond the scope of this paper, several cross-vertical structural observations are worth noting because they condition the interpretation of the aggregate findings. First, the specialty independent retail universe represented here is structurally highly fragmented. Industry research indicates that most U.S. apparel segments, bicycle dealerships, sporting goods stores, and vape shops operate with only 1.0 to 1.3 locations per business on average, meaning that single-store owner-operators dominate nearly every vertical in the sample. Somewhat higher multi-location averages are observed in shoe stores (approximately 2.2 locations per business) and family clothing stores (approximately 2.4), indicating that the apparel sub-category is the most chain-ready of the verticals in the sample. Home and garden, personal care, and jewelry and accessories follow a similar single-location pattern, with modest consolidation emerging only in sub-segments that benefit from franchising.

Second, vertical-level growth dynamics are broadly low-to-mid single digits. Publicly available U.S. industry research suggests sporting goods stores are projected to grow by roughly 1.2% in 2025; bicycle retail revenue is projected to grow by roughly 0.9% year-on-year with essentially flat establishment counts to 2030; and the vape and smoke retail segment is projected to grow by roughly 1.6% annually despite saturation pressure from a near-doubling of establishment counts over the prior five years. The apparel and footwear vertical is heterogeneous: family clothing stores are the single largest U.S. apparel sub-segment at an estimated USD 217.5 billion in 2025, while online men's clothing sales, at an estimated USD 30.4 billion, are among the fastest-growing sub-segments at an estimated 2.9% CAGR. Home and garden independent retail, health and beauty supplies, pet, and gift shop are also moderate-growth verticals, while electronics independent retail faces the sharpest headwinds from large-format and online competitors.

Third, and most importantly for the central analytical thrust of this paper, none of these vertical-specific dynamics substantially alters the aggregate patterns reported in Sections 4.1 through 4.8. Time and content are cited as the binding constraints across verticals; profitability and retention dominate acquisition across verticals; social commerce and BOPIS lead AI as technology priorities across verticals; and AI sentiment exhibits the same domain-specific ordering (inventory and marketing accepted; staffing and pricing resisted) across verticals. The aggregate findings are therefore best interpreted as describing a cross-sectional pattern common to specialty independent retail in North America, rather than an artifact of any single vertical's idiosyncrasies.

5. Discussion

The results support five interlocking conclusions about how established independent retailers in North America are currently approaching digital transformation.

5.1 An E-Commerce Aspiration Gap Rather than an Awareness Gap

The 15.1-percentage-point gap between the share of EIR respondents who currently operate a dedicated e-commerce store (37.5%) and the share who identify one as their ideal state (52.6%) indicates that retailers are not failing to recognize the importance of transactional online channels; they are failing to reach them. The gap is larger still in the broader NoAm sample (approximately 20.2 percentage points). Combined with the finding that website-as-digital-storefront is seen as a durable rather than transitional state, the data suggest that retailers envision an online portfolio in which a transactional e-commerce engine and a foot-traffic-driving storefront website coexist. The practical implication for retail technology vendors is that tools supporting the transition from storefront-only to storefront-plus-commerce should be prioritized over tools that assume retailers already operate mature e-commerce infrastructures.

5.2 Online Presence Serves the Physical Store

Retailers' ranking of non-transactional objectives — with driving local in-store traffic (50.9%), increasing local engagement (47.5%), and building local brand awareness (46.9%) outscoring all other objectives — reinforces the phygital framing in the literature (Hagberg et al., 2016; Mele & Russo-Spena, 2022). For the studied segment, online presence is a local-commerce amplifier rather than an independent growth channel. Importantly, data collection ranks far below local-traffic objectives (21.4% versus 50.9%), indicating that the data-maximalist narrative of modern digital retail, in which every consumer interaction is primarily an opportunity to enrich a first-party data asset, is not the organizing logic for this segment.

5.3 Financial Pressure Reshapes the Online Agenda

The two most frequently cited business challenges — rising supplier costs (16.4%) and regulatory changes (13.8%) — appear to translate directly into online strategy. Profitability and margin optimization is the single most frequently cited primary focus for improving the online business (35.4% EIR), outranking new online customer acquisition (21.1%) by approximately 14 percentage points. Customer retention and loyalty (26.3%) also outranks customer acquisition. Taken together, these findings support the interpretation that established independent retailers under financial pressure use their online channels to defend existing margin and customer relationships rather than to pursue acquisition-heavy growth.

5.4 Resource Bottleneck, Not Technology Bottleneck

The challenge data draw a sharp distinction between capacity and capability constraints. Time and resources (53.1% EIR), content creation (49.4%), and competition from larger retailers and marketplaces (51.3%) dominate the challenge ranking, while technology complexity is cited by only 3.1% of all respondents as a core business challenge. Retailers thus describe a capacity-bottleneck world in which the human labor required to compete online — principally photography, copywriting, social posting, responding to messages, and managing the site — is in chronically short supply. This framing is important for interpreting the subsequent AI findings: the most promising domains for AI are arguably those that directly relieve content-creation and management burdens.

5.5 Social Commerce and BOPIS Outrank AI

The ranking of technology priorities runs counter to the dominant industry narrative that positions AI as the defining short-term technology for retail. Social commerce (28.9% EIR) and BOPIS (27.6%) occupy the

top two positions, while AI for operational efficiency (26.5%) and AI for personalization (18.0%) rank third and fifth, respectively. Read in combination with the AI-sentiment findings, the preference for social commerce and BOPIS suggests that established independent retailers prioritize technologies with direct and verifiable revenue impact over technologies with indirect and difficult-to-attribute operational benefits. The low share of retailers reporting extreme satisfaction that their website reflects their in-store brand (12.2% EIR) may further strengthen the case for social commerce, where the platform's native visual language can substitute for custom web design.

5.6 AI Acceptance Is Domain-Specific

AI sentiment exhibits a clear pattern consistent with prior research on algorithmic aversion (Longoni et al., 2019). Retailers are most willing to let AI assist with inventory forecasting (32.5% combined "very comfortable" and "want to use") and marketing automation (29.3%), both of which are quantitative or routine tasks. They are least willing to let AI make decisions about staffing (20.3% combined acceptance, 51.5% combined rejection) and pricing (19.9% combined acceptance, 47.7% combined rejection), both of which implicate the owner's discretion over people and margins. The principal concerns cited — accuracy and reliability (58.0%), data privacy (52.6%), and perceived inability of AI to understand unique business needs (34.8%) — are consistent with the broader finding that established independent retailers regard themselves as having idiosyncratic operations that are not well-served by generic algorithms. AI vendors who wish to expand adoption in this segment should therefore begin with applications that are transparently bounded, explainable, and verifiable — for example, order-point suggestions with clear assumptions — before attempting to automate judgment-heavy decisions.

6. Implications

6.1 Theoretical Implications

The study contributes to three literatures. First, it extends the phygital-retail literature (Hagberg et al., 2016; Mele & Russo-Spena, 2022) by providing large-sample empirical evidence that established independent retailers explicitly prioritize online channels as local-traffic amplifiers rather than as standalone digital businesses. Second, it contributes to the SMB digital-transformation literature (Pantano & Dennis, 2019) by documenting a specific, quantifiable aspiration gap between current and ideal online states, and by showing that the binding constraint on bridging that gap is predominantly capacity rather than capability. Third, it contributes to the algorithmic-aversion literature (Longoni et al., 2019) by showing, in a retail context, that AI acceptance is strongly ordered by perceived domain appropriateness, with quantitative or routine domains accepted and judgment-intensive domains resisted.

6.2 Practical Implications

For retail technology vendors, the findings suggest that the dominant unmet need in the established-independent-retailer segment is a credible pathway from a storefront-plus-social-media posture to a storefront-plus-social-media-plus-transactional-e-commerce posture, delivered in a format that relieves rather than adds to the owner's content and operational workload. Product investments in native social-commerce integrations, BOPIS-ready fulfillment workflows, and AI-assisted content generation (product photography, product descriptions, and social posts) are likely to be valued more highly than further AI-based operational automation at this juncture. For platform designers, the findings argue for AI-feature designs that are scoped to specific, explainable, easily auditable decisions, and for explicit affordances allowing owners to override or correct AI recommendations in judgment-sensitive domains such as pricing and staffing. For policymakers, the findings support continued regulatory clarity on tariffs, sales taxation, and privacy, and suggest that cost-of-content and cost-of-talent measures (for example, support for small-retailer digital-skills programs) may be more impactful on the online competitiveness of independent retailers than further technology subsidies.

7. Limitations and Future Research

Several limitations merit acknowledgement. First, the sampling frame is drawn from retailers using modern point-of-sale infrastructure and is therefore biased toward the more digitally mature tail of the independent-retailer population. Retailers with no digital infrastructure are under-represented, which may cause the reported aspiration gap to understate the true gap in the broader population. Second, the cross-sectional design permits description but not causal inference. Third, many of the items rely on self-reported priorities rather than on observed behavior, and self-reports are well known to diverge from revealed preferences, particularly in the technology-priority domain. Fourth,

although the North American EIR segment is large in absolute terms, the thirteen verticals represented in the sample differ materially in structure and dynamics, and finer-grained vertical analyses would likely reveal heterogeneity that the aggregated presentation in this paper necessarily smooths over.

Future research could address each of these limitations in turn. A longitudinal follow-up tracking the same retailers over two to three years would clarify how the aspiration gap narrows, widens, or translates into realized e-commerce investment. Behavioral data — point-of-sale transaction logs, e-commerce platform data, and social-commerce engagement data — could be matched to self-reported priorities to examine the gap between stated and revealed digital strategy. Finally, experimental or quasi-experimental studies examining the adoption of specific AI-assisted content tools within the segment would help identify which product designs most effectively relieve the capacity bottleneck identified here.

8. Conclusion

This study offers a detailed empirical portrait of how established independent retailers in North America currently approach digital transformation. Drawing on a 71-item survey completed by 1,985 retailers across thirteen verticals, the analysis documents a substantive aspiration gap between retailers' present and ideal online states, identifies local-commerce amplification rather than data collection as the dominant non-transactional objective, shows that profitability and retention outrank acquisition in the online focus agenda, and reports that social commerce and BOPIS currently outrank AI as short-term technology priorities. Retailers' AI sentiment is polarized and domain-specific, with quantitative tasks most accepted and judgment-intensive tasks most resisted. The binding constraint on closing the aspiration gap is not technological; it is the time, talent, and content-creation capacity of the owner-operator. These findings reframe the independent-retail digital-transformation agenda around a specific, bounded, and actionable set of priorities: help retailers turn their existing storefront websites into transactional commerce engines, help them meet their customers on the social and fulfillment channels consumers already use, and help them do so without adding yet another claim on their already-strained weekly schedule.

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