

Boundaryless Retail: In-store Technologies Shaping Fashion Customer Experience Journeys

Abstract

Purpose: This study explores how young consumers use in-store technologies (ISTs) in fashion retail and their role in shaping the customer experience journey (CXJ), with particular attention to the underexplored integration of ISTs with personal devices across fluid physical and digital channels.

Design/methodology/approach: The study adopts a qualitative, multi-method approach, combining in-store observations and in-depth interviews with young fashion consumers, with data analysed thematically to identify behavioural patterns, motivations, and technology interactions across the CXJ.

Findings: Findings identify two dominant store-visit motivations: planned purchasing following online research and inspiration-led browsing without purchase intent. Smartphones emerged as central across all CXJ stages, revealing the interplay of convenience, interactivity, and integration. The study also uncovers persistent misalignments between retailers' intended use of ISTs and customers' actual behaviours, with several technologies perceived as underutilised or poorly aligned with consumer needs.

Originality/value: This study makes three key theoretical contributions: it redefines the role of ISTs in fashion retail, demonstrates how technology interactions shape the CXJ, and highlights the increasing blurring of digital and physical store boundaries.

Practical implications: Retailers are advised to invest strategically in ISTs that are accessible, intuitive, and aligned with customers' varied intentions, whether purchasing, seeking inspiration, or exploring products, rather than deploying technology as an end in itself.

Social implications: The study highlights the importance of maintaining human warmth amid automation, emphasising the importance of inclusive phygital retail environments that reduce customer anxiety, support diverse needs, and enhance the social experience of in-store visits.

Keywords: Customer Experience Journey, Fashion, In-store Technologies, Retail.

1. Introduction

Physical retail faces mounting pressure to evolve as customer expectations outpace conventional in-store services (IBM, 2024). To remain competitive in a digital-first economy, retailers must address three interrelated drivers: escalating demand for seamless experiences, e-commerce's expanding dominance, and rapid technological advancements (Vadruccio *et al.*, 2024a). These issues are particularly acute in fashion retail, where customers engage in complex omnichannel relationships with brands (Alexander and Kent, 2022). This shift has created phygital environments (Bonfanti *et al.*, 2023), where shoppers transition fluidly between physical and digital touchpoints. Consequently, fashion retailers increasingly deploy in-store technologies (ISTs), such as interactive Augmented Reality (AR) mirrors and digital fitting rooms, to enhance customer experiences (Sheppard, 2025). This has generated academic interest in the value of ISTs for firms, employees and customers (Grewal *et al.*, 2023; Vadruccio *et al.*, 2024a). Yet questions remain about ISTs' impact on the customer experience journey (CXJ) (Hoyer *et al.*, 2020). Building on Breugelmans *et al.*'s (2023) definition of the physical store as "a physical space that [...] facilitates, directly or indirectly, customers' progression along the shopping journey" (p. 532), this study explores how ISTs shape the in-store CXJ. While prior research categorises ISTs by mobility (Riegger *et al.*, 2022), this study defines them by ownership: retailer-owned (e.g. self-checkouts, AR mirrors) and customer-owned (e.g. smartphones).

Although research highlights ISTs' potential to augment CXs (Bonfanti *et al.*, 2023), most studies examine individual technologies rather than their cumulative effects across the CXJ (Qiu *et al.*, 2024). Prior work has examined specific retailer-owned technologies, including virtual fitting rooms (Lee *et al.*, 2022), AR (Pfeifer *et al.*, 2023), digital signage (van Giesen and Leenheer, 2019), self-checkouts (Sharman *et al.*, 2021; Qiu *et al.*, 2024) and beacons (Riegger *et al.*, 2022; Van de Sanden *et al.*, 2022). However, retailers also leverage customer-owned technologies, particularly smartphones, to stimulate in-store engagement such as discount code retrieval (Riegger *et al.*, 2022). While individual ISTs provide specific benefits (see Breugelmans *et al.*, 2023), their simultaneous use across the customer journey (CJ) may generate synergistic value missed in single-technology studies.

Most existing studies rely on the Technology Acceptance Model (Perry *et al.*, 2019; Pizzi and Scarpi, 2020) or focus on the motivational and functional benefits of specific ISTs (Riegger *et al.*, 2021; Breugelmans *et al.*, 2023). While insightful, these approaches overlook a journey-

based perspective necessary to understand ISTs' integrated influence across touchpoints. Responding to calls for more holistic analyses of technology use along the CJ (Roggeveen and Sethuraman, 2020), this study aligns with Grewal *et al.*'s (2025) call to conceptualise ISTs as integrated consumer-facing tools for delivering meaningful CXs.

Building on Grewal *et al.*'s (2023) recommendation for field-based research into the effects of ISTs on the CXJ, specifically focusing on the fashion sector (Vadruccio *et al.*, 2024a), and prior work by Alexander and Kent (2021; 2022) concerning retail technology evolution in-store, this study adopts a qualitative approach combining 243 fashion store observations with 25 interviews with young shoppers. It addresses the following research questions:

RQ1: How do ISTs (both retailer-owned and customer-owned) contribute to impacting the fashion customer shopping journey (CJ)?

RQ2: How do customers perceive and interact with ISTs, and how do these technologies influence the in-store customer experience (CX)?

By taking a holistic approach, this study advances understanding of how ISTs collectively shape CXs across the CJ, while offering actionable insights for fashion retail practice. The findings contribute three key outcomes: advancing conceptualisations of convenience in relation to ISTs and omnichannel accessibility for Gen Z and Millennial customers; clarifying how interactive experiences emerge through the combined use of retailer ISTs and personal smartphones across the CJ; and highlighting uneven levels of IST integration, including the limited adoption of advanced immersive technologies in fashion in-store environments. Collectively, these insights contribute to the literature on experiential touchpoints in the CJ (Lemon and Verhoef, 2016), IST deployment (Grewal *et al.*, 2020), and how ISTs influence not only the purchase stage, but also non-linear CJs proposed by Grewal and Roggeveen (2020), further developing Alexander and Varley's (2025) "boundaryless retail" paradigm.

2. Literature Review

2.1 Customer Journey (CJ)

Retail scholars concur that the CJ is a multidimensional process comprising three stages: pre-purchase, purchase, and post-purchase (Tueanrat *et al.*, 2021; Gleim *et al.*, 2025). Although often portrayed as linear (Lemon and Verhoef, 2016), CJs are increasingly recognised as circular and iterative (Grewal and Roggeveen, 2020). Lemon and Verhoef's (2016, p.71)

definition of the CJ as “the process a customer goes through, across all stages and touchpoints, that makes up the CX,” captures this complexity, positioning CX as the cumulative outcome of multiple interactions shaping perceptions, satisfaction, and behaviour (De Keyser *et al.*, 2020). These touchpoints, or *decisive moments* (Homburg *et al.*, 2017), can leave memorable impressions throughout the journey (Abid *et al.*, 2025). Digitalisation further blurs boundaries between physical and virtual touchpoints, reinforcing the need to examine each touchpoint as a discrete opportunity for retailers to enhance CX (Lemon and Verhoef, 2016). Delivering superior CXs across the CJ is widely recognised as a critical differentiator for retailers (Verhoef *et al.*, 2009) and remains central to customer-centric retail research (Gleim *et al.*, 2025), particularly when assessing how ISTs influence the CXJ.

2.2 Customer Experience (CX)

CX is a holistic phenomenon encompassing cognitive, affective, social, sensory and behavioural responses (Lemon and Verhoef, 2016). Cognitive responses involve information processing, while affective responses reflect emotions such as enjoyment and satisfaction. Social dimensions relate to interactions with others, influenced by peers, family, and media. Sensory experiences stimulate smell, sound, sight, taste, and touch to create immersion (Krishna *et al.*, 2010), while behavioural responses concern actions such as purchasing, resulting from interactions with products, services, and environments (Verhoef *et al.*, 2009; Lemon and Verhoef, 2016; Alexander and Varley, 2025). These dimensions often co-occur, producing a holistic experience, rather than discrete outcomes.

2.3 Customer Experience Journey (CXJ) and ISTs

ISTs are essential touchpoints that influence CX across all CJ stages (Grewal *et al.*, 2020; Roggeveen and Sethuraman, 2020; Alexander and Kent, 2022). Grewal *et al.* (2020) emphasise that retailers should prioritise ISTs that boost convenience by reducing the time and effort needed to complete transactions and social presence, defined as the extent to which technology makes consumers feel the presence of others in-store. Table I summarises existing research on ISTs and the CXJ by technology type, ownership, outcomes and CJ stage.

<<Insert Table I here>>

2.3.1. IST & Pre-Purchase

Table I demonstrates that ISTs strongly influence pre-purchase CXs by stimulating both cognitive and affective responses. ISTs, such as VR, AR and quick response (QR) codes, enhance product discovery, customisation and convenience (Grewal *et al.*, 2020; Breugelmans *et al.*, 2023). Grewal *et al.* (2020) reveal that QR codes enhance convenience by providing detailed product information, thereby improving the overall CX. AR tools, including virtual try-on mirrors, help consumers visualise products, improving functional value and access convenience (Grewal *et al.*, 2020; Lee *et al.*, 2022; Breugelmans *et al.*, 2023; Wang *et al.*, 2023), though concerns surrounding simulation accuracy and sensory realism can limit adoption (Lee *et al.*, 2022). Other studies demonstrate that immersive technologies can reduce mental intangibility, enhance hedonic value and increase purchase intentions. Indeed, Pfeifer *et al.* (2023) find that AR smart glasses outperform AR touchscreens by reducing cognitive intangibility and increasing sensory immersion. Similarly, Högberg *et al.* (2019) demonstrate that gamified in-store applications enhance hedonic value, affective experiences, and reward satisfaction, thereby increasing brand engagement. AI-enabled in-store touchpoints further heighten affective states, such as curiosity, while simultaneously deepening cognitive absorption through flow, producing positive behavioural outcomes (El Abed and Castro-Lopez, 2024), although evidence remains largely confined to scenario-based experiments. Van Giesen and Leenheer (2019) also find that interactive in-store displays enrich cognitive engagement by providing detailed product information, encouraging deeper catalogue exploration. Similarly, beacon-enabled communications can enhance convenience by saving time through delivering contextually relevant prompts (Van de Sanden *et al.*, 2022), while personalised mobile notifications can evoke social connections (Riegger *et al.*, 2022). These benefits, however, are tempered by privacy concerns. Inman and Nikolova (2017) show that proximity-based communications can trigger anxiety over data usage, underscoring the *privacy calculus* consumers undertake when evaluating personalised ISTs.

2.3.2. *IST & Purchase*

Table I further indicates that during purchase, ISTs primarily reduce friction and engage transactional convenience. Retailer mobile apps enable faster checkouts and reduced waiting times (Grewal *et al.*, 2023), while self-checkout technologies improve emotional experiences, encouraging repeat patronage (Kim and Yang, 2018). Extending this, Qiu *et al.* (2024) show that smart carts and self-checkouts not only enhance convenience but also shape consumers' perceptions of store image, suggesting that efficiency gains contribute to broader retail environment experience. BOPIS (buy-online-pick-up-in-store) services further strengthen

possession convenience, positively influencing the CJ (Breugelmans *et al.*, 2023). However, not all efficiency-oriented technologies yield positive CXs. For example, humanoid service robots may elicit discomfort and compensatory behaviours (Mende *et al.* 2019), underscoring the importance of emotional responses alongside functional gains.

2.3.3. IST & Post-Purchase

Table I shows that research on post-purchase ISTs remains limited, though a few existing studies suggest that technologies extend CXs beyond the store, fostering loyalty and social engagement. Interactive mirrors and VTOs encourage social sharing via social media, creating communal experiences that extend in-store engagement into digital spaces (Grewal *et al.*, 2020; Wang *et al.*, 2023). Grewal *et al.* (2020) show that smart displays, enabling VTOs and QR-enabled image sharing, can evoke a felt human presence. Similarly, Breugelmans *et al.* (2023) finds that retailers' social media accounts generate social presence through shoppertainment, as customers share try-on content within brand communities. Conversely, negative in-store experiences can carry over into post-purchase behaviours (Li and Kang, 2025), highlighting the sensitivity of this stage of IST performance. Accordingly, retailers must understand how consumers perceive different ISTs and their impact on the CXJ.

Despite extensive stage-specific research, the cumulative impact of ISTs across the CXJ remains underexplored. As touchpoints blur, omnichannel retailing moves beyond traditional definitions (Alexander and Varley, 2025). Physical stores increasingly act as experience-driven hubs, leveraging technology for connectivity, seamless integration and phygital CXs. This underscores the need to explore customers' perceptions of ISTs' holistic contribution to CX. Moreover, most IST research is conducted outside fashion contexts or often relies on conceptual reviews, reinforcing the need for fashion-specific, field-based studies to identify which ISTs matter most across in-store shopping journeys (Grewal *et al.*, 2023; El Abed and Castro-Lopez, 2024).

3. Methodology

Responding to calls for field research on ISTs' combined effects on CXs (Grewal *et al.*, 2023) and emerging themes in CX, retail technologies, and omnichannel retailing (Grewal *et al.*, 2025), this research analyses how ISTs shape customer behaviour and CXs in fashion stores. Back-end technologies (e.g. inventory systems) were excluded, focusing only on ISTs experienced by shoppers. A multi-method qualitative design generated rich, in-depth data,

enabling a nuanced understanding of this underexplored phenomenon (Maxwell, 2013) and addressing knowledge gaps (Edmondson and McManus, 2007). Recognised in retail scholarship (Riegger *et al.*, 2021), the study triangulates observations and semi-structured interviews for a novel perspective (Homburg *et al.*, 2017). Research followed four stages: sample selection, data collection, analysis, and quality assurance (Jonsen and Jehn, 2009).

3.1 Sample Selection

Fashion retail served as the unit of analysis, spanning categories and market levels from value to luxury (Business of Fashion, 2019). Oxford, Bond, and Regent Streets in London were chosen for their high concentration of flagship and technologically advanced fashion stores (Alexander and Kent, 2021, 2022; Vadrucchio *et al.*, 2024b). A total of 243 single observations of ISTs were conducted over seven days: 95 on Bond Street, 87 on Oxford Street, and 61 on Regent Street. Variations reflect access limitations, including temporary closures.

A purposive sample of 25 Millennial and Gen Z participants (aged 19-31, balanced by gender) was selected based on: 1) generational cohort, 2) IST familiarity, and 3) fashion shopping frequency, requiring a visit to the streets in the prior three months. Participants were recruited through social media and researchers' professional networks; of the approximate 100 individuals approached, 25 agreed to take part. Research confirms younger customers' familiarity with retail technologies (Riegger *et al.*, 2021). Theoretical saturation was reached after 18 interviews; a stopping criterion at 25 ensured no new themes emerged (Saunders *et al.*, 2018; Hennink and Kaiser, 2022). Two researchers independently verified content validity.

3.2 Data Collection

Two methods were employed: observations and interviews.

3.2.1 Observation

Unobtrusive observation systematically recorded IST prevalence, types, and interactions involving customers and frontline staff (FLS). Observations provide real-time behavioural insights (Wells and Sciuto, 1966; Jonsen and Jehn, 2009) and are established in retail research (Alexander and Kent, 2021; 2022). Following Seiler and Pinna's (2017) observation protocol, researchers explored each store, photographing ISTs with smartphones. Fieldwork took place between 14-20 December 2024, producing 243 observations and 56 hours of data. Field notes

documented location, market level, IST type and usage. Real-time text/audio notes minimised recall bias. Data comprised 560 photographs and 243 notes tabulated in Excel for frequency and typology analysis. Visualisation charts illustrated patterns (Guest and McLellan, 2003). Triangulation with interviews enhanced reliability (Jonsen and Jehn, 2009).

3.2.2 Interviews

Semi-structured interviews generated in-depth customer insights (Riegger *et al.*, 2021). Participants received information and consent forms detailing purpose, criteria, and expectations. Consent covered audio recording, analysis, and anonymised quotes; pseudonyms (A-Y) preserved confidentiality. An interview protocol, informed by the literature, guided consistency (McCracken, 1988). Themes included: 1) the fashion CJ and physical store role; 2) IST perceptions and impact on CJ and in-store CX; 3) views on desired ISTs. Open-ended questions encouraged detailed responses and minimised bias (Patton, 2002). Probing enhanced depth and contextualisation. The protocol was piloted before use. Interviews (45-60 minutes) were conducted face-to-face or online, recorded and transcribed.

3.3 Data Analysis

Thematic analysis was applied to interview transcripts, combining manual coding with NVivo software. Two researchers independently conducted a three-phase process. Phase 1: line-by-line coding identified initial codes (Homburg *et al.*, 2017; Saldana, 2021). Phase 2: descriptive, axial, and in vivo coding linked patterns to literature themes, retaining participants' voices. Codes with $\leq 15\%$ support were merged or excluded. Phase 3: related codes were aggregated into themes and finalised collaboratively (Aguinis and Solarino, 2019). Appendix A illustrates the data structure from codes to themes (Gioia *et al.*, 2013).

3.4 Quality Criteria

Credibility was ensured through data and researcher triangulation (Fischer and Guzel, 2023) and alignment with relevant literature. Procedural transparency included consistent protocols, accurate transcription, and member checking. Independent coding by two researchers supported reliability and replicability (Pratt *et al.*, 2020). Participants' voices were prioritised to reduce interpretation bias. Anchored in CX and CJ theory, the study advances conceptual depth. The multi-method approach strengthens theoretical and practical relevance (Riegger *et al.*, 2021).

4. Findings

This section is organised first, to summarise the observations of ICTs in the sample stores; second, to expound the overarching themes that emerged from the interviews. The third section analyses IST use in pre-purchase, purchase and post-purchase stages.

4.1 *Phygital CX*

The findings demonstrate that physical stores and ISTs significantly influence the phygital fashion CX (Batat, 2022). Observational data revealed Wi-Fi, non-interactive screens (NIS), and store-provided tablets as the most prevalent ISTs (Figure 1). Self-checkouts, QR codes, and branded apps were more common among mass-market retailers, while BOPIS was observed across all market levels, supporting channel integration. Conversely, AR and VR technologies were rarely seen, with VR typically confined to short-term promotional activations. No robots or humanoid assistants were observed in any fashion store. Overall, ISTs enabled customers to move fluidly between physical and digital touchpoints, supporting an oscillating CXJ:

“It’s easy for me to cross reference my Pinterest mood board with ecommerce store, but collect more from store”. (P)

<<Insert Figure 1 here>>

4.2 *ISTs in the CXJ*

Three themes defined ISTs in the CXJ: convenience, integration and interactivity. *Convenience* dominated interview data, aligning with prior IST research (Grewal *et al.*, 2020; Alexander and Kent, 2022; Breugelmans *et al.*, 2023), but extended to encompass *easiness* and *immediacy* as experiential states. An experiential state refers to a subjective, felt condition in which perceptions of convenience are shaped by sensory experience. In this context, *easiness* describes freedom from difficulty, facilitated by predictable, customer-controlled ISTs. Participants reported difficulties with shopping in-store, particularly in locating items in the correct size and navigating larger store environments. However, convenience is not purely experiential, it is partly evaluative and relational involving judgements of effort, time and resource expenditure. Thus, convenience emerged not only as an internal sensory state, but also as a cognitive appraisal arising from task- and situation-based evaluations along the journey. *Immediacy* referred to customers’ expectation of instant access to products and information. Many described needing to locate products within “five seconds”, reflecting short attention

spans and task-focused behaviour. This often-followed online pre-purchase research, which narrowed options, mitigating choice overload and boosting purchase confidence.

Integration, the second theme, was evident across journey stages, although CX varied according to journey purpose. The smartphone emerged as the most integrative technology within the in-store fashion CJ, supporting cognitive, affective and social experiential responses. It was central to information acquisition through QR code scanning, branded apps and social media, enhancing the integration of online and offline experiences via membership discounts, virtual closets, and up-to-date product information. Social and affective experiences were generated through social media that allowed customers to personalise their journeys, with retailer ISTs and FLS serving complementary experiential roles. Participants found VTO and digital wardrobing appealing for their potential to enhance “shopping efficiency” (D) and “community engagement” (S) and expressed interest in AI technologies to enable tailored recommendations across all stages of the CJ.

While smartphones were widely accepted by both retailers and customers as key customer-owned IST, the findings reveal a misalignment between retailer and customer prioritisation of ISTs. As shown in Figure 2, retailers (positioned above the lo–hi line) prioritised BOPIS, Wi-Fi, and NIS, reflecting their observed prevalence (Figure 1). In contrast, customers (below the lo–hi line) placed greater value on self-checkout, VTO, and tablets, based on interview frequency. This divergence highlights the need for retailers to better align ISTs that enhance convenience and interactivity with customer expectations to more effectively integrate the CJX. Further, ISTs could trigger negative affective responses when they were perceived not to have an integrative function; excessive memory use or overwhelming notifications could lead to customers deleting branded apps.

<<Insert Figure 2 here>>

Interactivity with ISTs emerged as a third theme, although its impact varied. Participants reported affective experiences with interactive screens (IS) and devices, but positive experiences were mainly associated with beauty brands, where VTO technologies, such as virtual lipstick matching encouraged experimentation as a “fun” experience. Large ISs, such as selfie customisation at Hollister, generated affective CX:

“People try on clothes and customise screen backgrounds for selfies”. (Q).

However, AR and VR were largely associated with “temporary spaces rather than permanent retail spaces” (V) where they were far less evident. Although immersive ISTs occasionally transported customers into the “brand world” (N), they remained infrequent and peripheral to the CJX.

Across the purchase journey, two dominant motivations for visiting fashion stores emerged. One group of consumers engaged in inspiration-led browsing with little or no immediate purchase intention (IBWP). The second group undertook purposeful and planned store visits, typically following earlier online research, consistent with a research-online, purchase-offline (ROPO) motivation. These motivations are illustrated across the CJ stages below.

4.3 Pre-Purchase in the CJ

For the browsers in particular, smartphones played a central role in pre-purchase research by integrating social media with the instore experience that allowed participants to stay connected, search for products, and consult reviews, primarily on TikTok. These participants sought immediate cognitive insight into ‘what’s new’ from the product assortment and often used smartphones to photograph items for later consideration:

“I go straight to the point. So, I see what’s new, I take pictures and then I go home. I don’t really allow myself to interact much with other things that are happening”. (G)

These social and cognitive dimensions were supported by in-store Wi-Fi, valued when mobile signals were weak or data allowances limited, but disliked for their unreliable connectivity and security concerns. Other retailer-provided ISTs generated affective and cognitive experiences. RFID-enabled scanning was described as “futuristic” (Q) and afforded customers greater independence and control over time. QR codes enhanced cognitive experiences by providing information on item care, disposal, supply chains, and sustainability credentials, while also offering discounts valued by price-conscious customers.

For ROPO customers, the retail staff’s tablets contributed to their shopping convenience by enabling inventory and product location searches, which could convert browsing into

purchasing. While many participants found verbal interaction with sales staff uncomfortable, tablets provided affective experiences through perceived efficiency and security:

“Instead of being there for an hour trying to find this one sweater I want... the assistant can locate it and just give it to me. It makes life extremely easy”. (F)

Across both categories, the most frequently observed IST - NIS displaying fashion collections - contributed little to the pre-purchase experience or to perceptions of IST integration. Participants did not view them as essential to the CJX and considered their contribution to store atmosphere and brand identity as limited. More negatively, some participants criticised ISTs for creating impersonal or cluttered environments. In some cases, they were associated with excessive sensory stimulation and anxiety:

“I feel very overstimulated in-store. I like to go to the fitting room because it’s more peaceful, calm”. (G)

The experience of feeling overwhelmed by an impersonal store environment led to participants avoidance behaviours and reduced perceptions of easiness in the shopping journey.

4.4 Purchase in the CJ

At the purchase stage, ROPO motivations were evident in consumers’ purposeful and planned store visits, which were typically preceded by online research. For this group, in-store pre-purchase activity was largely unimportant. For purchasers, the convenience of self-checkout ISTs significantly contributed to their affective experience, especially among mass-market retailers. Customers valued the reduction in queuing, enabling store visits to be completed “in 5 to 10 minutes” rather than “up to an hour”. Similarly, tablets enhanced convenience during the purchase stage by facilitating quick checkouts and reducing wait times. IS at fitting rooms further enhanced affective experience by detecting carried items, checking room availability and enabling requests for alternative items. These functions reduced issues relating to size, material and fit, allowing customers to achieve their purchasing goals more easily.

As an integrative and convenient IST, BOPIS is well established across online and offline channels and enhances the CJX by enabling fast and efficient purchases with in-store pick-up. However, participants typically preferred brand websites or apps for stock look up and store

availability and travelled to store to complete purchases (ROPO). While observed across market levels, BOPIS was most commonly associated with mass-market brands such as Zara, M&S, and H&M.

In purchasing, smartphones demonstrated their integrative function by enabling real-time interactions with friends and family:

“Nearly every time I try something on, I’ll phone my mum and ask her what she thinks and send photos to her”. (I)

Smartphones further supported cognitive and affective experiences by allowing customers to curate fashion looks in mood boards and digital wardrobes, enhancing autonomy and control over the journey:

“I really liked the outfit, and I wanted to recreate it. Then maybe I would screenshot that and when I’m shopping, I would use it as a reference point”. (D)

4.5 Post-Purchase in the CJ

In the post-purchase stage, retailer tablets contributed to IST integration when used to collect customer feedback on the purchase experience. However, smartphones more commonly demonstrated both their integrative and interactive appeal by supporting customers’ post-purchase communication with friends and family. This was evident in the sharing of images and comments on purchased items and storing wish lists on retailer apps, consistent with Breugelmans *et al.* (2023).

Table II presents a 2×3 matrix summarising the positive and negative impacts of ISTs across the two dominant store-visit motivations and the CJ stages.

<<Insert Table II here>>

5. Discussion and Conclusion

5.1 Theoretical Implications

This paper makes three theoretical contributions. First, it redefines *convenience* as an experiential state and examines ISTs’ role in facilitating the fashion CXJ. This finding advances Grewal *et al.* (2020)’s theoretical framework that ISTs should increase customer

convenience and extends Breugelmans *et al.* (2023) concepts of access and search convenience by focusing on convenience as *ease*, freedom from difficulty and effort, and *immediacy*, distinct from timesaving. Second, it reveals the interplay between retailer- and customer-owned technologies throughout the in-store CXJ and how ISTs are integrated into the CJ. This study shows that ISTs contribute across all journey stages, particularly during the purchase stage, a finding that challenges prior research emphasising that ISTs are primarily used during the pre-purchase stage (Pfeifer *et al.*, 2023; Wang *et al.*, 2023). Nevertheless, ISTs are significant for browsing, primarily for cognitive and affective experiences, to see what's new and for product availability. While Wang *et al.* (2023) found that experts supported the experiential and communicative opportunities of in-store VTO, this study found they were also highly desired by customers. However, VTOs are scarcely evident in-store and customers' VTO experiences are more usually situated in brands' online software accessed through personal devices.

At the *purchase stage*, self-checkouts and technologically enhanced fitting rooms fostered positive affective experiences by reducing waiting times (Grewal *et al.*, 2023; Qiu *et al.*, 2024), with self-checkouts being particularly valued for transaction convenience (Bonfanti *et al.*, 2023; Qiu *et al.*, 2024). While reinforcing earlier work linking technologies to affective and social experiences (Hoyer *et al.*, 2020; Grewal *et al.*, 2023), this study shows that such experiences arise through the integration of retailer- and customer-owned ISTs rather than retailer-owned ISTs alone. *Post-purchase*, smartphones supported social sharing, while this study provides additional evidence of the use of tablet-based customer feedback, addressing a gap identified by Cavalinhos *et al.* (2021).

In exploring customer perceptions and interactions with ISTs, this study demonstrates how emotional, social and cognitive experiences in the in-store CJ are achieved through the nexus of retailer ISTs and personal smartphones, which mediate digital-physical experiences, streamline journeys, and offer multitasking capabilities under customer control (Lemon and Verhoef, 2016). This was evident in each stage of the CJ, where smartphones supported social sharing. Nevertheless, there were frictions in the CX. Customer concerns about branded apps could lead to their deletion. Look-up facilities on the store staff's tablets were found to be helpful, but some customers expressed unease with unfamiliar devices, highlighting the need for intuitive and customer-centred ISTs. This demonstrates the importance of aligning retailer-owned ISTs with customers' personal technologies (Figure 2).

A third contribution highlights the erosion of physical store boundaries, extending Alexander and Varley's (2025) "boundaryless retail" paradigm and providing a richer understanding of ISTs in experiential retailing and seamless shopping across channels (Grewal *et al.*, 2025). Within increasingly fluid retail spaces, physical stores enable customers to experience the materiality of fashion items while supporting hybrid shopping behaviours during the CXJ (Alexander and Varley, 2025). Figure 3 depicts the fluidity of the CJ, in which customers orchestrate retailer- and customer-owned ISTs to optimise experiences. It highlights the smartphone's centrality and customers' motivations for control, convenience, personalisation, and autonomy within dissolving online-offline boundaries, and IST's prime role in each stage of the CXJ.

<<Insert Figure 3 here>>

5.2 Managerial Implications

Retailers should adopt a cautious, customer-centred approach when investing in ISTs. The misalignment (Figure 2) between retailer and customer IST priorities shows that customers seek convenience-enhancing technologies in the CJ, such as self-checkouts, while retailers tend to prioritise lower cost and well-proven technologies that integrate easily with existing systems. Despite heightened industry interest, AR/VR adoption remains very limited, and immersive technologies were largely confined to short-term activations, with only 10 ISs observed in-store. Instead, retailers should focus on seamless integration with customer-owned devices. Smartphones should be leveraged as central to the CXJ, with branded apps and QR codes designed to complement, rather than compete with personal technologies, and investments should prioritise ISTs that enhance convenience and autonomy. Moreover, a holistic approach to the location and design of ISTs can reduce sensory overstimulation and negative affective responses, recognising that customers disengage from ISTs perceived as impersonal or disruptive. Designing boundaryless, customer-controlled journeys is thus essential for fostering positive emotional connections and affective experiences.

5.3 Societal Implications

Fashion retail stores continue to serve as leisure spaces, particularly during pre-purchase journeys focused on information gathering and inspiration, which are often social activities. This has implications for store design as an inclusive social environment that incorporates "phygital" elements balancing automation with human interaction. While participants

frequently expressed anxiety around engaging with shop staff, thoughtfully designed phygital environments can reduce stress and enhance enjoyment. Such environments should accommodate customer disabilities and neurodivergence. Integrating ISTs into store layouts, fixtures, and fittings, alongside human-centred communication, can foster social connection, inclusivity, and a sense of human warmth.

5.4. Limitations and Future Research

This study was limited to fashion retail stores in London. Future research could expand its scope through cross-cultural comparisons with international fashion retailers to examine how ISTs use and CXJ dynamics vary across contexts and different age groups. A second research theme is to understand the role of non-interactive ISTs in the store environment. Although ubiquitous, NIS were often unremarked within the CXJ, raising questions about whether their effectiveness lies in seamless atmospheric integration rather than active engagement. A third focus for research concerns AI-enabled ISTs. While this study found limited in-store AI use, participants expressed interest in AI-driven personalisation, including curated recommendations, virtual fitting, and garment try-on, reflecting needs for autonomy, control, convenience and personalisation. Future studies should also explore agentic AI, including personal shopping assistants and the balance between AI-mediated and human interactions in-store. Finally, this research highlights opportunities to examine how customers use ISTs to access information about ethical production, supply chains, and product care. Technologies such as digital product passports warrant further investigation, alongside the potential for ISTs to generate overstimulation and anxiety, particularly in relation to sensory sensitivity and regulation.

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