

Ethical Challenges in Smart Consumer Perceptions and Behaviour

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Abstract:

Recent technological advances have led to the emergence of smart retail technologies, including AI-enabled shopping assistance, automated checkouts, chatbots, and smart mirrors, blending digital and traditional shopping experiences. Despite the convenience these technologies offer, their adoption and use remain limited, largely due to ethical concerns such as privacy and data security. This study integrates affordance theory, which examines how technological features enable certain user actions, to develop and test a model of consumer ethical perceptions and adoption behaviours towards smart retail technologies. By “smart” consumer, we refer to consumers who are engaged and interact with these technologies, not to their intrinsic intelligence level. An online survey with 510 responses was used to study the relationship between consumer experiences, digital ethical perceptions, and online shopping habits. The survey was designed to capture a comprehensive range of consumer interactions with smart technologies and ethical concerns. Data were analysed using factor analysis and structural equation modelling (SEM), with reliability and validity assessed using Cronbach’s alpha and confirmatory factor analysis (CFA). Findings indicate that positive smart experiences significantly enhance consumer intentions and loyalty. This research contributes to our understanding of the ethical implications and adoption dynamics of smart technologies in retail, offering actionable insights for retailers to improve consumer engagement and satisfaction while effectively addressing ethical concerns.

Keywords: Smart retailing, consumer experience, privacy, trust, transparency, loyalty, digital wellbeing

1. Introduction

The current retail ecosystem is increasingly implementing emerging technologies and AI, including IoT, AI, VR, AR, MR, and ML, to augment online shopping experiences (Shankar, 2018; Meißner et al., 2020; Shankar et al., 2021). It is crucial to fully understand the influence of these technologies on consumer purchasing behaviour, loyalty and wellbeing. The current literature extensively explores diverse facets of smart technology in the context of retail, online retailing and smart retailing. However, there remain certain lacunae in comprehending the ramifications of smart technologies on consumer conduct, decision-making and the holistic shopping experience. Thus, this study seeks to explore the effects of the utilisation of emerging technologies, particularly smart technologies, in the context of retail and online shopping, and its influence on consumer behaviour and experiences. This research aims to address the gaps in existing literature pertaining to this area. There exists a dearth of scholarly inquiry regarding the effects of smart technology on the decision-making processes of consumers in the context of online shopping and smart retailing in general (Inman and Nikolova, 2017; Duan, Edwards and Dwivedi, 2019; Dellaert et al., 2020; Pazzanese, 2020). Although certain studies have investigated the effects of smart technology-generated recommendations and customised experiences on consumer conduct (Hansen, 1969; Pantano and Priporas, 2016; Agrawal, Gans and Goldfarb, 2018a; Chaney, Lunardo and Mencarelli, 2018; Becker and Jaakkola, 2020; Baabdullah et al., 2022), there exists a scarcity of research on the influence of smart technology on consumer decision-making and repurchasing intentions within the context of online shopping. The efficacy of smart technology-powered recommendations in facilitating informed decision-making is uncertain, as it remains unclear whether they contribute to choice overload and decision fatigue (Song and Y.-K. Kim, 2022; D. Kim et al., 2023).

There appears to be a lack of adequate consideration regarding the influence of smart technology on consumer confidence within the context of smart retailing. The significance of consumer trust in online shopping environments is widely acknowledged; however, there exists a paucity of research pertaining to the perceptions and trust levels of consumers regarding smart technology-driven online shopping experiences. The aforementioned concerns pertain to information transparency, fairness, perceived risk, explainability and accountability of smart technology-embedded retail systems, in addition to the significance of trust in the acceptance of smart technology-driven online experiences by consumers. Insufficient attention has been paid to the influence of smart technology on consumer

experiences in the context of online shopping and smart retailing spheres. The utilisation of emerging technology in smart retailing contexts has the potential to augment the overall shopping experience. However, there exists a lack of scholarly inquiry regarding the effects of smart technology on consumer experiences, including but not limited to satisfaction, engagement, digital well-being and repurchasing intentions. Comprehending the influence of smart technology on consumer experiences can provide valuable insights to retailers in devising effective technology-driven strategies aimed at augmenting the holistic online and virtual shopping experience.

In summary, a handful of studies have covered the impact of the use of emerging technologies such as IoT, AI, VR, AR, MR, and ML in smart retailing settings. Whilst others have focused on smart retail technology itself, the literature on the true impact of consumers' engagement, experience, digital well-being and experience is sparse in terms of study types and theoretical insights. This study examines the influence of innovative technologies, particularly smart technology, on the conduct and perceptions of consumers in the context of retail and online shopping. The extant body of literature has revealed certain lacunae in comprehending the enduring repercussions of smart technology on consumer conduct, ethical and societal ramifications of smart technologies, and consumer reliance on technology-driven retail encounters. Additional investigation is required to comprehend the effects of smart technology-driven functionalities on consumer conduct and encounters, the ethical and societal consequences of smart technology, and the optimal methodologies for incorporating smart technology into retail operations while upholding consumer confidence, confidentiality, and ethical considerations.

Given the current wave of technological advancements and persistent digital disruptions, acting as a poignant forewarning for businesses, societies, and global economies (Gupta, Gaurav and Panigrahi, 2023), this study adopts a comprehensive stance to probe the repercussions of digital transformations and smart technology-embedded shopping experiences. This study scrutinises the perceptions of privacy concerns, fairness, risk, trust, shopping experience, purchasing behaviour, and overall well-being and loyalty within the UK retail sector. In navigating this dynamic landscape, smart retailers and stakeholders are fervently encouraged to adapt and implement tailor-made measures, policies, and practices (Hall et al., 2021; Gupta, Gaurav and Panigrahi, 2023). In the ever-evolving digital retail environment, retailers must decipher current digital trends as cautionary signals. Smart retailers must demonstrate preparedness and proactivity in addressing the potential impacts

and consequences stemming from the use of smart technologies in retailing (Lopes and Reis, 2021; Shankar et al., 2021; Del Vecchio, Secundo and Garzoni, 2023; Gupta, Gaurav and Panigrahi, 2023). The smart retail sector has already undergone significant shifts due to the increased demand for online shopping, consequently altering consumer behaviour and placing considerable strain on the supply chain (Grewal, Kroschke, et al., 2020; McKinsey & Company, 2020; Barney et al., 2022; Gupta, Gaurav and Panigrahi, 2023).

Given the persistent challenges posed by smart technologies, digital trends, and potential disruptions, here we investigate the following research questions:

- i) How does the integration of smart technology in retail influence consumers' perceptions of privacy, fairness, risk, and trust?
- ii) How does trust shape the smart shopping experience and satisfaction for consumers using smart retail technologies and platforms?
- iii) How does digital customer satisfaction impact consumer purchasing behaviour and contribute to e-loyalty and digital well-being in smart retailing?

By addressing these questions, this study aims to provide valuable insights into the ethical and societal implications of smart technologies in retail and offer actionable strategies for retailers to enhance consumer engagement and satisfaction while addressing ethical concerns effectively.

2. Literature Review

Barriers to Delivering positive consumer experience in Smart Retail Ecosystem

Over the past few decades, Inman and Nikolova (2017) have conducted research that underscores the transformative impact of emerging technological breakthroughs on the retail industry. These ongoing innovations and the integration of smart technologies have played a pivotal role in empowering retailers to cultivate stronger consumer relationships and maintain

a sustainable competitive advantage (Inman and Nikolova, 2017; Vrontis, Thrassou and Amirkhanpour, 2017).

Inman and Nikolova (2017) assert that "new technologies create value by either augmenting revenue through (a) attracting new shoppers, (b) increasing the share of volume from existing shoppers, or (c) extracting greater consumer surplus while simultaneously reducing costs by delegating tasks to consumers." Nevertheless, it is essential to acknowledge that consumers' perceptions of fairness, trustworthiness, attitudinal loyalty, and the potential encroachment upon their personal privacy by these technologies may serve as formidable barriers (Scarpi, Pizzi and Visentin, 2014; Inman and Nikolova, 2017; Roy *et al.*, 2017).

Advancements in the Internet and smart technology have empowered consumers to remotely connect with retailers and products. Research has also demonstrated that consumers are reshaping their information-seeking and purchase decision-making processes in profoundly novel ways. After their consumption experiences, they actively share their opinions, frequently with the help of third-party service providers such as Yelp, TripAdvisor, and various social media platforms (Priporas, Stylos and Fotiadis, 2017; Grewal, Gauri, Roggeveen, *et al.*, 2021). However, it is crucial to recognise that consumer ethical concerns represent a substantial hurdle to delivering a positive smart retailing experience (Du and Xie, 2021). Smart retailing hinges on the use of sensitive consumer data, which encompasses purchase history, preferences, and personal information. Mishandling these data can culminate in breaches and consequent erosion of consumer trust (Wu *et al.*, 2023). For instance, in the event of a security lapse leading to the leakage of a consumer's personal information, the resultant loss of trust in the retailer may dissuade them from future patronage, thereby engendering a negative overall experience. Prior research underscores the intriguing phenomenon that, notwithstanding ethical concerns surrounding privacy, consumers occasionally exhibit a willingness to disclose their personal information or simply overlook perceived risks (Higueras-Castillo, Liébana-Cabanillas and Villarejo-Ramos, 2023). This phenomenon, in which consumers behave in a manner contrary to their own ethical apprehensions, is commonly referred to as the "privacy paradox" (Norberg, Horne and Horne, 2007; Dienlin and Trepte, 2015; Du and Xie, 2021; Ying *et al.*, 2023). Consequently, ethical concerns such as privacy remain a formidable obstacle to the widespread adoption of smart retailing practices.

To gain a thorough understanding of ethical concerns in smart retailing, a countless approach of consumer, retailer and regulatory differences including compromises must be considered. Academic research on consumer ethics in retailing continues to be a fertile area of inquiry, precisely because these crucial challenges (“ethical concerns”) are fraught with persistent conflicts and paradoxes (Lwin, Stanaland and Miyazaki, 2008; Esmark and Noble, 2018; Martin and Palmatier, 2020). Scholarly studies have indicated that for the past decade, smart technologies, including IoT, AI, VR, AR, MR, and ML, have been the driving force behind research, in the field of retail and practice, enabling retailers to streamline their operations, better understand consumer behaviour, and ultimately provide more personalised experiences. With the continued advancement of these technologies, it is evident that they will play an even greater role in shaping the future of the smart retail industry (Shankar, 2018; Martins *et al.*, 2019; Shankar *et al.*, 2021). From predictive analytics to automated inventory management and consumer service, the possibilities for smart technologies in retail are endless, and their impact will undoubtedly be felt for years to come. As such, it is critical for businesses to embrace these technologies and use them to their advantage, in order to stay competitive and meet the ever-evolving needs of their consumers (Dacko, 2017; Nikhashemi *et al.*, 2021; Ho *et al.*, 2022; Hu, Pantano and Stylos, 2023). Most consumers became aware of the power and promise of smart technologies through online platforms, for example, Google and Facebook, as well as retailers such as Amazon (Pazzanese, 2020; Vimalkumar *et al.*, 2021). Smart technologies are now crucial in various of industries, including retail. Their growing use in retail, coupled with the prominence of ethical shopping motives, offers retailers who value their significance a major advantage. However, its game-changing potential to enhance efficiency, reduce costs and expedite research and development has recently been dampened by concerns that these sophisticated systems may cause more harm than benefit (Dacko, 2017).

Researchers argue that smart technologies growing appeal and utility are undeniable. However, according to Karen Gordon Mills (a Senior Fellow at Harvard Business School and a leading authority on U.S. competitiveness, entrepreneurship and innovation), these technologies present major areas of ethical concern for consumers, such as digital well-being, privacy, artificial intelligence-bias and discrimination, and perhaps one of the most difficult philosophical questions of the era: the role of human judgement (Pazzanese, 2020; Du and Xie, 2021). The ethical challenges associated with smart technologies in retail have become

more profound and require urgent attention (Du and Xie, 2021; Mostaghel and Chirumalla, 2021).

Digital Information and Consumer Harm

Consumers are increasingly expecting to obtain instant, seamless, and memorable online shopping experiences when utilising smart technologies and digital shopping platforms (Dacko, 2017; Inman and Nikolova, 2017; Gauri *et al.*, 2021). As a result, retailers are continually developing strategies to meet and satisfy consumers' experience demands by using smart technologies, including artificial intelligence (Fanderl *et al.*, 2019; Lim, Tuli and Grewal, 2020). Further research has also indicated that the expectations of ever demanding consumers today are pushing retailers to seek new means to meet and respond to their desire for personalised experiences, not just to differentiate themselves, but also to survive by using smart technology and proprietary data (Lindecrantz, Tjon Pian Gi and Zerbi, 2020). These demands and expectations of personalisation have left retailers facing tactical challenges (such as consumer ethical concerns and data management, including tools and technology enablement) in meeting consumer demands (Davenport, 2018; Davenport *et al.*, 2020; Lindecrantz, Tjon Pian Gi and Zerbi, 2020; Gauri *et al.*, 2021). Successful personalisation initiatives result in more engaged consumers. This has highlighted a high degree of awareness of consumers' real-time demands and has led retailers to establish truly customer-centric strategies. However, recent research on the use of artificial intelligence in retail highlights potential negative aspects and consumer harm concerns (Culnan and Armstrong, 1999; Kaltcheva and Weitz, 2006; Pizzi and Scarpi, 2020). These concerns include privacy and security dilemmas, trust, job loss, artificial intelligence-based bias and superintelligence's harmful developments (Kaltcheva and Weitz, 2006; Poncin *et al.*, 2017; Bleier, Goldfarb and Tucker, 2020; Martin and Palmatier, 2020; Pizzi and Scarpi, 2020).

Retailers may expose consumers to a mix of physical and online touchpoints and advance towards the digitisation of commerce by embracing digital technology; however, in the midst of this are consumer harm concerns. In a broader sense, this conversation is not new. For a long time, ethical implications regarding the use of smart technology, including IoT, AI, VR, AR, MR, and ML, have been a source of debate and concern in the technology world (Kumar, Ramachandran and Kumar, 2021). Although recent research has investigated the ethical, moral and trust difficulties surrounding the usage of innovative technology, such as artificial intelligence, there is also a dying need to investigate changes in behaviour, after

consumers have expressed ethical concerns, to further understand the harm faced by consumers when interacting with these innovative technologies (Ameen *et al.*, 2021).

3. Research Model and Hypothesis Development

This study aims to comprehensively understand consumers' relationships with smart retailers and their associated digital ethical concerns. To achieve this, a model has been developed that delves into the impact of smart technologies in retail on consumer behaviour and experience, encompassing aspects of both cognitive and affective digital well-being. The objective is to gain a more profound understanding of consumer behaviour and their preference to embrace smart technology-themed products and services. A significant gap in the smart retailing literature is the lack of a theoretical framework to conceptualise and understand the dynamics between smart retailing platforms and consumers (Ostrom, Fotheringham and Bitner, 2019; Giroux *et al.*, 2022; Kamoopuri and Sengar, 2023; Sharma *et al.*, 2023). In this context, affordance theory, as discussed in the previous section, can offer fresh perspectives and facilitate a comprehensive understanding of the relational dynamics between consumers and smart retail platforms.

In the ever-evolving landscape of smart retailing (Davenport *et al.*, 2020; Cukier, 2021; Shankar *et al.*, 2021), the concept of repurchase intention takes centre stage, signifying consumers' deliberate choices to endorse a specific brand while disregarding alternative options. In the past, the level of service provided by salespeople was the predominant factor influencing consumer experiences and satisfaction. However, the paradigm shift brought about by the widespread adoption of smart technologies has fundamentally reshaped the role of consumers and emerging digital retail platforms (Shankar *et al.*, 2021). These retail platforms have evolved into central repositories of information for potential consumers. This transformation has profound implications for consumers and their purchase intentions, accentuating the pivotal role of consumer digital interfaces in instigating purchase intent and thereby exerting a substantial impact on the overall financial performance of retailers operating within the digital retail landscape.

Furthermore, consumer ethical digital perceptions and attitudes towards perceived risks exert significant influence on repurchase behaviour within the realm of smart retailing (Agag, 2019; Yang *et al.*, 2019). This influence becomes particularly pronounced in the

absence of traditional salesperson interactions. Factors such as the convenience of round-the-clock shopping, click-and-collect alternatives, the global nature of online shopping, and online payment options have assumed critical importance for consumers. Paradoxically, these conveniences inadvertently amplify their perception of risk and underscore concerns related to privacy, fairness, and trust (Cath, 2018; Pazzanese, 2020; Chang, 2021; Du and Xie, 2021). Consequently, the absence of these ethical safeguards has emerged as a substantial hurdle in the online business sphere. Research consistently underscores that the perceived level of consumer ethical digital perception is a pivotal determinant in the consumer decision-making process regarding online purchases. Ethical concerns now occupy a prominent place in the minds of prospective consumers. Authentication mechanisms implemented by smart retailers play an instrumental role in establishing trustworthiness and nurturing consumer confidence (Bart *et al.*, 2005; Schlosser, White and Lloyd, 2006; Trivedi and Yadav, 2018; Cuong, 2023).

Scholarly inquiries into the domain of smart retailing consistently reaffirm trust as a foundational element that shapes consumer behaviour in the realm of online purchasing (Jai, Burns and King, 2013; Thatcher *et al.*, 2013; Yang *et al.*, 2019; Wu *et al.*, 2023). Furthermore, numerous studies have investigated consumer privacy concerns and their subsequent impacts on purchase intentions (Dienlin and Trepte, 2015; Martin and Murphy, 2017; Martin *et al.*, 2020; Wieringa *et al.*, 2021; Zhang *et al.*, 2022). This line of research seeks to identify the attributes, including fairness and privacy, of online platforms that effectively mitigate perceived risks for consumers. Additionally, it explores the strategies that smart retailers can employ to effectively address these attributes on their smart retail platforms. These measures aim to enhance consumer trust, elevate overall experience and satisfaction, and ultimately fortify repurchase intentions (Dayal *et al.*, 1999; Woodlock, 1999/2000). Below is the proposed conceptual framework for this study.

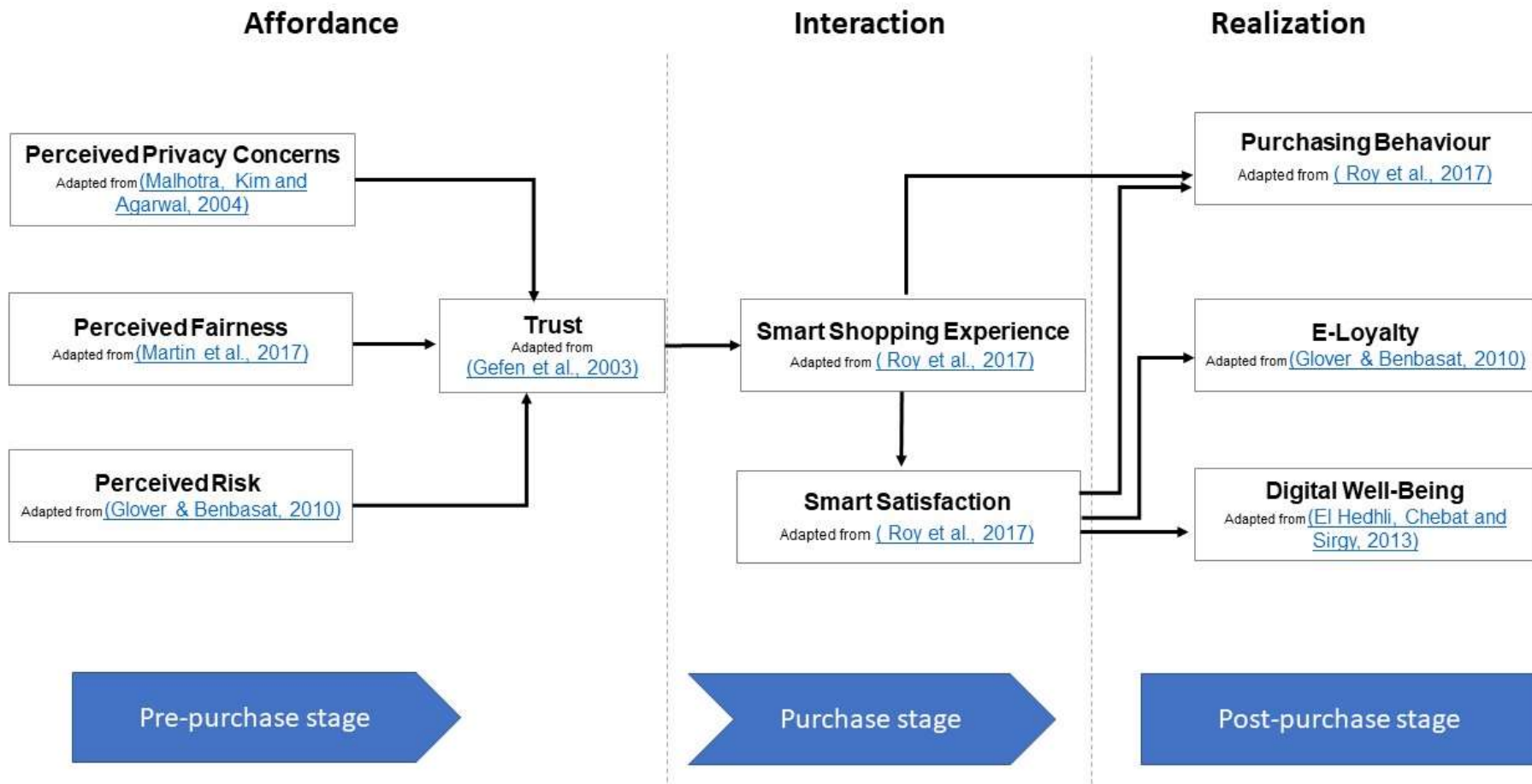


Figure 1: Proposed conceptual framework.

Privacy concerns

Affordance theory, which is rooted in the concept of perceived and actual capabilities of a system or object influencing consumer behaviour (Trepte, Scharkow and Dienlin, 2020), provides a valuable lens for understanding and addressing online privacy concerns in the context of smart retailing. The affordance perspective allows the analysis of how design features and functionalities influence users' ability to shape their accessibility levels through self-disclosure or privacy regulation.

Online privacy, as a concept, is an individual consumer's assessment of their exposure while interacting with others and institutions or businesses in the digital realm (Trepte and Reinecke, 2011; Seignani, 2016; Martin and Murphy, 2017; Martin *et al.*, 2020; Masur and Trepte, 2021; Kim, Seok and Roh, 2023; Y. Kim *et al.*, 2023). Importantly, it includes the consumer's ability to actively shape this level of accessibility through self-disclosure or privacy regulation (Masur and Trepte, 2021). It is important to acknowledge that what constitutes a privacy violation is highly context-dependent and can vary depending on the situation and the online environment. Different digital platforms and settings significantly affect how consumers perceive and manage their privacy, making the management of privacy boundaries complex (Chellappa and Sin, 2005; Palmatier and Martin, 2019; Masur and Trepte, 2021; Wieringa *et al.*, 2021). This complexity arises from disruptions such as intentional violations of established rules, misinterpretation of rules, the emergence of ambiguous boundaries, differing rule orientations due to various socialisation processes, and privacy dilemmas. These privacy dilemmas and concerns are not confined to specific platforms but extend across various online contexts. For instance, on social media, sharing personal information within interconnected networks is an integral aspect of the user experience, highlighting the intertwined nature of personal data in the digital age. Privacy breaches or violations in such settings can include actions such as stalking, harassment, spreading harmful rumours, and the unwanted sharing of personal information (Masur and Trepte, 2021). This demonstrates the intricate relationship between privacy concerns and online interactions in interconnected spaces.

In contrast, smart retail settings prioritise buying and selling, requiring consumers to provide personal information such as addresses and credit card details. However, this results in a different set of privacy concerns, primarily related to the continuous collection of personal data and metadata by commercial entities. Such privacy invasions often go unnoticed, leaving consumers uncertain about the extent of concern they should have, as

these violations are typically invisible (Martin *et al.*, 2020; Masur and Trepte, 2021; Y. Kim *et al.*, 2023). Consumer privacy concerns, which encompass individuals' beliefs, attitudes, and perceptions regarding their privacy, have been extensively used to assess consumer privacy in various contexts (Martin and Murphy, 2017; Martin *et al.*, 2020). This construct has been investigated as an antecedent (Y. Kim *et al.*, 2023), consequence (Xu *et al.*, 2008), mediator (Hu and Min, 2023), and even moderating factor in consumer behaviour (Lu and Yi, 2023). Various studies have explored the multifaceted relationship between privacy concerns and trust, which are often conceptualised as opposing forces in the consumer's decision-making process regarding data sharing (Milne and Boza, 1999; Dinev and Hart, 2006; Swani, Milne and Slepchuk, 2021; Rodríguez-Priego *et al.*, 2023).

While privacy concerns are negatively correlated with trust, the precise nature of this relationship varies depending on the individual's attitudes, situational characteristics, and shopping habits (Phelps, Nowak and Ferrell, 2000; Hong, Chan and Thong, 2021). Trust, defined as an individual's willingness to rely on an exchange partner despite potential risks, is a critical factor that influences privacy concerns (McKnight and Chervany, 2001; Gefen, Karahanna and Straub, 2003; Mofokeng, 2023). High levels of trust can mitigate privacy concerns by assuring consumers that their data will remain secure and free from exploitation (Bleier and Eisenbeiss, 2015b; Lwin, Wirtz and Stanaland, 2016; Cai and Mardani, 2023). However, individual consumers with elevated privacy concerns may exhibit lower levels of trust, perceiving the situation as more fraught with risk (Malhotra, Kim and Agarwal, 2004; Martin *et al.*, 2020). The existence of trade-offs between perceived benefits and privacy concerns (Milne and Gordon, 1993; Martin, 2017, 2018), as well as conflicting expectations (Martin, 2018; Martin and Nissenbaum, 2020), significantly affects consumers' willingness to share their information. Yet, studies have consistently shown that consumers often prioritise the perceived benefits of direct and online marketing despite their privacy concerns, giving rise to the "privacy paradox" (Norberg, Horne and Horne, 2007). This phenomenon highlights the divergence between individuals' expressed privacy concerns and their actual online behaviours and choices. It remains the subject of ongoing debate within the academic community (Kokolakis, 2017; Butori and Lancelot Miltgen, 2023).

Drawing from the existing evidence of the privacy paradox in related contexts and the empirical observation that consumers continue to engage in smart retailing despite harbouring privacy concerns, it is reasonable to anticipate a significant impact of privacy concerns on consumers' trust in smart retailing environments. Therefore, understanding the intricate

interplay between privacy concerns and trust is vital in the context of smart retailing, as it can significantly influence consumer behaviour, purchase decisions, and the overall success of smart retailing strategies. This study anticipates a significant effect of privacy concerns on consumers' trust, leading to the following hypothesis:

Hypothesis 1a: Attributes of the perceived smart retail privacy concerns impacts on consumers' trust in smart retailing platforms.

Perceived Fairness

Research across various domains consistently examines consumer fairness concerns. This study explores their implications in the context of smart retailing and their potential influence on trust, incorporating the affordance theory perspective. Previous studies have primarily focused on supply chain management, with investigations into consumer fairness concerns focusing on their impact on perceived product value, pricing strategies, and distribution channels. In examining perceived product value, several studies (Pizzi and Scarpi, 2020; Hamzah and Pontes, 2022; Zhao, Guan and Zhang, 2023) have explored the relationship between consumer fairness concerns and how consumers perceive the value of products. Affordance theory, rooted in the concept of perceived and actual capabilities influencing consumer behaviour, provides a valuable lens for understanding this relationship. Notably, these concerns are associated with consumer loyalty, satisfaction, and trust in retailers. These factors, in turn, affect how consumers perceive the value of products and their purchase intentions. This indicates that fairness concerns play a significant role in shaping consumer behaviour and attitudes towards products and retailers (Hamzah and Pontes, 2022; Zhao, Guan and Zhang, 2023).

The impact of consumer fairness concerns on pricing strategies has also garnered attention. Chen and Cui, (2013) and Li and Jain (2016) have shown that concerns about fairness lead to uniform pricing, which in turn reduces price competition and enhances firm profits. Affordance theory allows the study to analyse how design features influence consumers' ability to shape their accessibility levels through self-disclosure or privacy regulation. Guo and Jiang, (2016) indicated that strong aversion to unfairness among consumers can diminish consumer surplus and harm inefficient businesses. Fairness concerns can have far-reaching implications for pricing dynamics in retail environments.

Furthermore, distribution channels are not immune to the effects of consumer fairness concerns. Yi et al. (2018), Yu, Wang and Liu (2022) and Zhao, Guan and Zhang (2023),

explored how fairness concerns influence consumer behaviour in transactions and the subsequent impact on retailers. The results indicate that fairness behaviour can negatively affect a retailer's profits and drive them to lower retail prices, highlighting the significance of these concerns in distribution channels. Existing studies have also considered alternative strategies to address strong consumer fairness concerns, such as altering selling formats (Yi *et al.*, 2018) or introducing price ambiguity (Allender *et al.*, 2021) to enhance retailers' profits. Despite the valuable insights from these studies, most of the research has concentrated on traditional retail supply chains rather than smart retail supply chains, overlooking the potential impact of fairness-concerned consumers in the smart retail landscape. Therefore, this study examines fairness through an ethical lens, aligning with the approach of Martin *et al.* (2017).

Research in the field of consumer privacy within smart retailing indicates potential strategies to mitigate the adverse effects of vulnerability, particularly concerning trust and violations. Martin *et al.* (2017) explored the roles of perceived fairness and value in moderating the impact of vulnerability on trust and violations. Their findings indicate that neither value nor fairness had a moderating effect on the relationship between vulnerability and violations. However, both value and fairness significantly moderated the vulnerability-trust relationship. In the context of smart retailing, this indicates that both perceived value and fairness play crucial roles in enhancing a customer's trust in a firm, especially when addressing issues such as data breaches. These factors positively impact trust primarily through cognitive mechanisms, rather than exacerbating emotional reactions related to violations. Consequently, this underscores the potential benefits of using rational appeals when communicating with customers to emphasise the positive aspects of their relationship with the firm. Although the study did not delve deeply into the intricate workings of perceived fairness and value within the context of smart retailing, these findings open intriguing avenues for future research. Understanding how these factors influence customer behaviour and their perception of trust within the unique landscape of smart retailing holds promise for both researchers and businesses operating in this evolving and dynamic environment, leading to the following hypothesis:

Hypothesis 1b: Attributes of the perceived smart retail fairness impacts on consumers' trust in smart retailing platforms.

Perceived Risk

Perceived risk, a concept in consumer psychology, involves consumer's subjective assessment of uncertainties and potential adverse consequences associated with product or service purchases (Bauer, 1960; Stone and Grønhaug, 1993; Faqih, 2012, 2022). In the context of smart technology adoption, especially within online environments such as online shopping, the relationship between trust and risk perceptions is intricate and entangled. However, research findings have exhibited inconsistency, leading to ongoing discourse among academics and practitioners on integrating trust and risk perceptions into consumer decision-making processes (Dowling and Staelin, 1994; Faqih, 2012, 2022; Ahmed, Ali and Top, 2021; Guo *et al.*, 2023). Affordance theory, which is rooted in the concept of perceived and actual capabilities that influence consumer behaviour (Bayer, Gimpel and Rau, 2021), provides a valuable lens for understanding the dynamics of trust and risk perceptions in technology adoption. Affordance theory indicates that the design features and functionalities of a system influence consumers' ability to shape their accessibility levels through self-disclosure or privacy regulation (Trepte, Scharkow and Dienlin, 2020).

Empirical research indicates that trust and risk perceptions are subjective and intricate, resisting facile categorization and quantification (Taylor, 1974; Horton, 1976; Peter and Ryan, 1976; Pavlou, 2003; Kim, Ferrin and Rao, 2008). Notably, a salient aspect emerging from this relationship is that risk inherently precedes trust, as trust becomes relevant and significant only in the presence of associated risk (Pennanen, 2006; Faqih, 2022). Researchers continue to explore how these perceptions and their interplay shape individual adoption behaviour concerning technology in online settings. Lim (2003) provided a pioneering overview of how trusting behaviour and perceived risk mutually influence one another and subsequently impact the adoption process. Lim (2003) provided an insightful overview of how trusting behaviour and perceived risk mutually influence each other and impact the adoption process. Lim's work outlines specific relationships among trust, risk, and behavioural intention, contributing to a more comprehensive understanding of the intricate nexus between these two factors.

Studies, such as the one conducted by Ahmed, Ali and Top (2021), have shown that perceived risk factors negatively influence behavioural intent related to online shopping adoption. Similarly, Kamalul Ariffin, Mohan and Goh (2018) affirmed the adverse impact of perceived risk on behavioural intention. Numerous researchers have demonstrated that

perceived risk hinders the intention to adopt online shopping (Qalati *et al.*, 2021; Faqih, 2022).

In the context of the perceived risk and trust relationship, numerous empirical investigations have established that perceived risk plays a substantial role in hindering trust development in Internet-based purchase activities. These studies have consistently indicated that perceived risk negatively impacts trust (Mahliza, 2020; Citaningtyas Ari Kadi and Surya Amalia, 2021; Faqih, 2022). This exploration, which incorporates the affordance theory perspective, highlights the significance of design features in shaping consumers' perceptions of risk and trust in online environments. Affordance theory indicates that the design of online platforms, with their perceived and actual capabilities, plays a crucial role in influencing consumer behaviour in the context of technology adoption and online shopping. Consequently, this study offers further clarification regarding how the interaction between risk and trust may influence behaviour in the domain of smart retailing, leading to the following hypothesis:

Hypothesis 1c: Attributes of the perceived risk impacts on consumers' trust in smart retailing platforms. Trust

Trust, a fundamental concept in the sphere of online interactions, can be effectively explored through affordance theory. Affordance theory, which is rooted in the perceived and actual capabilities of a system or object that influence consumer behaviour (Trepte, Scharkow and Dienlin, 2020), provides valuable insights into the dynamics of trust in the context of smart retailing. In the digital landscape, trust is commonly defined as the willingness of one party to be vulnerable to the actions of another, based on the expectation that the other will perform a particular action important to the trustor (Mayer, Davis and Schoorman, 1995). Affordance theory indicates that the design features and functionalities of online platforms play a crucial role in shaping consumers' perceptions of trust and their willingness to engage in vulnerable actions such as online transactions. Trust is a pivotal element in online retail environments, influencing consumer relationships and serving as a key factor in attracting and retaining consumers, especially in the evolving landscape of smart retailing (Doney and Cannon, 1997; Gefen, Karahanna and Straub, 2003; Pavlou and Gefen, 2004; Chiu, Huang and Yen, 2010; Shiau and Luo, 2012). Affordance theory posits that the design of digital platforms affords consumers the capability to perceive and establish trust through various features, such as secure payment gateways, transparent communication channels, and reliable

product information (Kankanhalli, Tan and Wei, 2005; Bianchi and Andrews, 2012; Patel *et al.*, 2023). Trust's significance is evident in human behaviour, especially when individuals face risks and cannot control others' actions. This importance is highlighted in the successful adoption of both old and emerging technologies, such as e-commerce and smart retailing platforms (Hoffman, Novak and Peralta, 1999; Kim, Ferrin and Rao, 2008; Wu *et al.*, 2023). In online retail environments, trust is essential for building and maintaining retailer–consumer relationships (Gefen, Karahanna and Straub, 2003; Pavlou and Gefen, 2004). It is considered a key factor in attracting and retaining consumers, particularly in the early stages of online retailing (Hoffman, Novak and Peralta, 1999; Chang, Cheung and Lai, 2005; Chen, Lan and Chang, 2023).

Moreover, trust becomes even more critical in smart retailing, impacting consumer purchasing intentions, experience, satisfaction, and loyalty (Ba and Pavlou, 2002; Li, Browne and Wetherbe, 2006; Lim *et al.*, 2006; Shiau and Luo, 2012). Affordance theory emphasises that the design affordances of smart retail platforms, including seamless navigation, personalised recommendations, and secure data handling, contribute to building and enhancing trust among consumers (Sun *et al.*, 2019; Bayer, Gimpel and Rau, 2021). In the context of smart retailing, trust extends beyond mere transactional activities to encompass a wide spectrum of consumer experiences, interactions, and communications. Affordance theory suggests that the design features of smart retail platforms afford users the capability to engage meaningfully with brands, online platforms, and fellow consumers. Trust, as an affordance, empowers consumers to actively participate in various actions without fear of exploitation.

Furthermore, trust collectively affects the overall service quality and consumer satisfaction of online shopping, along with other factors such as design and reliability (Lee *et al.*, 2009; Zhang *et al.*, 2018; Pagani, Racat and Hofacker, 2019; Suh and Moradi, 2023). Consumer motivations for online shopping are strongly linked to distributive, procedural, and interactional fairness, perceived risk, and ethical concerns such as privacy, which are potent predictors of trust (Zhang *et al.*, 2018; Pagani, Racat and Hofacker, 2019). Research indicates that trust is intrinsically linked to engagement in smart retailing, where online retailers invest efforts in fostering meaningful conversations and continuously integrating features to enrich consumer experiences (Hsu, Chiang and Huang, 2012). Affordance theory underscores the role of design in facilitating and enhancing the trust-engagement relationship within the smart retail domain. The empirical findings strongly support the idea that trust is a substantial

predictor of experience. In summary, the affordance theory perspective illuminates how the design features and functionalities of smart retail platforms afford consumers the capability to perceive, establish, and benefit from trust. Trust, as a multifaceted and pervasive concept, is intricately tied to the affordances provided by digital platforms, influencing various aspects of consumer behaviour, and ultimately impacting the success of smart retail transactions. Understanding the role and dimensions of trust is essential for researchers and businesses operating in the digital age, leading to the following hypothesis:

Hypothesis 2: Attributes of trust in smart retail platforms impacts on consumers' smart shopping experience.

Smart Shopping Experience

The impact of smart consumer experiences on consumer satisfaction is a critical area of study in the context of smart retailing, where technological advancements have reshaped how consumers interact with smart retail platforms (Inman and Nikolova, 2017; Roy *et al.*, 2017; Hess *et al.*, 2020; Riegger *et al.*, 2022). In this study, smart consumer experience is defined as an integral aspect of smart retailing, specifically focussing on technology-mediated retail experiences facilitated by connected technologies such as AI, VR, and AR.

Affordance theory, which is rooted in the concept of perceived and actual capabilities influencing consumer behaviour, provides a valuable lens for understanding and evaluating the elements that constitute a smart consumer experience (Sun *et al.*, 2019). The affordance perspective allows an analysis of how design features and functionalities influence consumer experiences. Previous studies have identified key components that encapsulate the essence of smart consumer experiences, including the relative advantage, perceived control, perceived interactivity, perceived enjoyment, and personalisation (Roy *et al.*, 2017). The relative advantage, as a cognitive facet of smart consumer experiences, relates to how consumers perceive smart retail technologies and platforms as superior to their brick-and-mortar counterparts. This perception encompasses technological advancements, convenience, quality, and functionality. Fundamentally, it is about whether consumers see smart retailing as a better way to shop (Priporas, Stylos and Fotiadis, 2017; Zou *et al.*, 2023). Perceived enjoyment, on the other hand, delves into the emotional aspect of smart consumer experiences. It measures the pleasure and satisfaction consumers derive from using smart retail technologies, going beyond mere functionality (Roy *et al.*, 2017; Roy, Balaji and Nguyen, 2020; Nguyen and Llosa, 2023). Personalisation, a behavioural dimension, pertains

to the ability of smart retail technologies to offer customised services (Roy *et al.*, 2017; Riegger *et al.*, 2022). This study addresses the behavioural aspects of smart consumer experiences, focussing on how consumers can tailor their shopping experiences to their preferences. Perceived controls, another behavioural element, centre around consumers' feelings of control in their interactions with smart retail technologies. It encompasses consumers' ability to influence and engage with these technologies to achieve their shopping goals and desired outcomes. Perceived interactivity, a cognitive aspect, evaluates the overall interaction between consumers and smart retail technologies. It assesses the extent to which these technologies facilitate interaction and support consumers in achieving their shopping objectives and tasks. These elements collectively form the intricate landscape of smart consumer experiences, shaping how consumers perceive and engage with smart retail platforms (Roy *et al.*, 2017). Retailers have begun to recognise the pivotal role of smart consumer experiences in influencing consumer satisfaction. Recognition is rooted in enhanced engagement, ease of use, responsiveness to consumer needs, and real-time feedback and monitoring. Consumer satisfaction, within the realm of smart retailing, is the result of consumers' evaluations and impressions regarding the performance of smart technologies and retail platforms. The accumulation of these experiences with smart retail platforms significantly contributes to consumer satisfaction. Building upon previous research, this study anticipates that the use of smart retail technology stimulates smart consumer experiences, which in turn can foster consumer satisfaction, leading to the following hypothesis:

Hypothesis 3a: Attributes of Smart consumer experience will have a positive direct impact on smart satisfaction.

Smart experiences have emerged as distinctive positive emotions, separate from emotions such as happiness, joy, and pride, and are specifically related to the feelings of amazement provoked by a variety of stimuli (Septianto, Kemper and Choi, 2020; Kim, Bang and Campbell, 2021; Kautish and Khare, 2022). Encounters with aesthetically pleasing objects, such as smart products and services, can evoke these smart experiences in consumers (Septianto, Kemper and Choi, 2020). The impact of this experience, akin to the "wow" effect, is a direct result of exposure to such products, which challenge existing mental frameworks and compel consumers to navigate novel experiences (Hinsch, Felix and Rauschnabel, 2020). This, in turn, triggers an intention to purchase these products (Guo *et al.*, 2018; Guo and Wang, 2023). The same holds true for smart retail technologies and platforms, as previously exemplified. Kautish and Khare (2022) proposed that smart retail technologies and platforms

can instigate smart experiences among consumers. Using smart technologies necessitates that consumers adjust their preconceived notions, resulting in smart experiences that subsequently lead to various behavioural outcomes (Hinsch, Felix and Rauschnabel, 2020), including purchase intentions (Guo *et al.*, 2018; Chen *et al.*, 2023; Guo and Wang, 2023). This phenomenon, in which smart experiences influence consumers' decision-making processes, has been substantiated by previous research (Guo *et al.*, 2018). Smart experiences provoke curiosity and foster learning among consumers, thereby increasing their willingness to try a product (Septianto *et al.*, 2020). The significant impact of smart experiences on generating purchase intentions has been well documented in prior studies (Guo *et al.*, 2018). As posited by Septianto *et al.* (2020), smart experiences serve to diminish purchase risk, making them a substantial catalyst for an augmented intention to purchase, leading to the following hypothesis:

Hypothesis 3b: Attributes of Smart consumer experience will have a positive direct impact on consumer purchasing behaviour.

Smart-shopping Satisfaction

Examining smart consumer satisfaction through affordance theory offers invaluable insights into the design features and functionalities that mould consumers' perceptions and overall contentment with digital platforms (Roy *et al.*, 2017; Sun *et al.*, 2019). Affordance theory, which is deeply rooted in the concept of perceived and actual capabilities that influence consumer behaviour, enables a nuanced exploration of how smart retailing platforms afford consumers opportunities for satisfaction. Consumer satisfaction reflects a consumer's sense of contentment with the products or services they have obtained (Bridges and Vásquez, 2018). It can be perceived as a subjective assessment linked to the experience of either gratification or disappointment. Typically, consumers assess a product's performance in comparison with their initial expectations (Oliver, 2013, 2014).

In the context of smart retailing, affordances encapsulate the perceived opportunities and actions that users believe they can perform with digital platforms. (Kujur and Singh, 2018; Xu, 2020; Camilleri and Filieri, 2023a). These affordances, which are precisely aligned with consumers' expectations and preferences, significantly contribute to their overall satisfaction. For instance, affordances such as a user-friendly interface, personalised recommendations, and seamless transaction processes enhance the entire smart consumer experience. Affordance theory posits that the design of smart retail platforms shapes users'

perceptions of what they can achieve and how easily they can accomplish their goals. When consumers find that a smart retail platform offers clear affordances, including intuitive navigation, personalised features, and efficient transactional capabilities, it profoundly influences their satisfaction.

An extensive body of research on online retailing and self-service retail technology consistently affirms the robust relationship between affordances and consumer satisfaction. For instance, Lin and Hsieh (2007) demonstrated a positive relationship between consumer satisfaction and behavioural intentions regarding self-service technologies. Similarly, Tseng (2015) provided evidence that consumer satisfaction with web-based self-service is positively correlated with their intention to continue using the technology. In line with previous studies (Tseng, 2015), Robertson et al. (2016) extended these findings by establishing a connection between customer satisfaction and the continued use of self-service technology, both online and through interactive voice-responsive systems. In the e-retailing context, Rose et al. (2012) affirmed that consumer satisfaction, stemming from cognitive and affective experiential states, significantly influences their intentions to repurchase from the retailer. Thus, elevated levels of consumer satisfaction are intrinsically linked to platforms that afford users a profound sense of control, customisation, and ease of use. Affordance theory adeptly identifies the design elements and functionalities that contribute to positive consumer experiences.

For example, a precisely designed smart retail platform that seamlessly affords consumers the ability to locate products, customise preferences, and enjoy an intuitive checkout process is unequivocally more likely to evoke heightened levels of satisfaction. Affordance theory, therefore, is an indispensable framework for comprehending the intricate relationship between design features, user perceptions, and overall satisfaction within the domain of smart retailing. In sum, the examination of smart consumer satisfaction through the lens of affordance theory underscores the pivotal role played by the design and functionalities of digital platforms in shaping user experiences. The theory not only reveals the affordances that foster positive consumer perceptions and contentment but also exerts a profound influence on consumers' intentions to consistently reuse and engage with smart retailing platforms. This comprehensive discussion reinforces the significance of affordance theory in the context of smart consumer satisfaction, offering a holistic understanding of the intricate dynamics at play. Drawing from extensive research in the fields of self-service technology and online retailing, this study postulates that consumers' smart satisfaction with

smart retailing platforms will similarly impact their behavioural intentions towards this emerging technology, leading to the following hypothesis:

Hypothesis 4a: Attributes of Smart Satisfaction will have a positive direct effect on consumer purchasing behaviour.

E- Loyalty

In today's fiercely competitive business landscape, building and sustaining consumer loyalty has become a paramount objective for businesses, transcending the traditional boundaries of commerce into the domain of smart retailing, affordance theory provides a valuable lens to understand the dynamics at play (Camilleri and Filieri, 2023a; Chen et al., 2023; Mofokeng, 2023). Affordance theory, which is rooted in the concept that the perceived and actual capabilities of a system influence consumer behaviour, offers insights into how smart retail platforms create opportunities for consumers to engage, connect, and form loyalty (Neff *et al.*, 2012; Lin *et al.*, 2019; Bayer, Gimpel and Rau, 2021). Affordances in smart retailing platforms refer to the features and functionalities that these digital environments provide, influencing consumers' ability to navigate, make informed choices, and ultimately derive satisfaction from their experiences (Norman, 1999, 2013). The affordance perspective allows us to dissect the intricate relationship between the functionalities offered by smart retailers and the resulting consumer satisfaction and loyalty.

The affordances provided by smart retail platforms shape perceived acquisition value, a crucial component in the loyalty chain. These platforms, through features such as personalised recommendations, seamless navigation, and real-time information, enhance the perceived value of products and services compared with their price (Fornell *et al.*, 1996; Lam *et al.*, 2004a). Affordances enable consumers to extract maximum utility from their interactions, fostering satisfaction and influencing loyalty towards the smart retailer. Remarkably, Shankar, Smith and Rangaswamy (2003b) accentuated the heightened significance of the relationship between consumer satisfaction and loyalty, particularly within the dynamic milieu of online retail environments as opposed to the more conventional offline settings. To lay the foundation for this discussion, this study defines smart satisfaction as the consumer's sense of contentment derived from their previous purchasing encounters with a specific smart retailer, in line with the conceptualisation put forth by Anderson and Srinivasan (2003). Existing research has successfully uncovered a clear chain of events that goes like this: perceived acquisition value (how useful the product is compared to its price)

→ satisfaction → loyalty, with consumer satisfaction playing a key role (Fornell et al., 1996; Lam et al., 2004b).

However, it is noteworthy that empirical studies exploring the nexus of smart consumer satisfaction and loyalty are still relatively scarce. Existing literature has predominantly focused on perceived transaction value, often overlooking the intricate affordances that contribute to user satisfaction and subsequent loyalty. This gap presents an opportunity for scholars to delve deeper into the specific affordances that drive satisfaction and loyalty within the context of smart retailing. For example, Grewal, Monroe and Krishnan (1998) demonstrated that both acquisition and transaction values exhibit a positive correlation with a consumer's inclination to make purchases from a specific retailer. However, an exception to this prevailing trend is evident in the work of Darke and Dahl (2003), which elucidates how discounts can augment purchase satisfaction. This augmentation is driven by nonfinancial rewards that are closely associated with perceptions of fairness. The concept of "smart purchase" scenarios emphasised in the literature aligns with affordance theory. Smart retail platforms, by providing features such as real-time pricing information, comparison tools, and personalised deals, afford consumers the opportunity to make informed and advantageous purchase decisions (Mano and Elliott, 1997; Chen et al., 2023; Mofokeng, 2023). The affordances embedded in these platforms not only facilitate transactions but also contribute to the overall satisfaction and, consequently, loyalty of consumers.

As we traverse the evolving landscape of modern retailing, characterised by smart technologies and digital experiences, affordance theory prompts us to scrutinise the functionalities and features offered by smart retail platforms. Understanding how these affordances influence consumer satisfaction and loyalty is imperative for shaping effective strategies and practices for the future of smart retail. Scholars should explore the nuanced affordances that underpin the satisfaction-loyalty relationship, paving the way for a more comprehensive understanding of consumer behaviour in the dynamic realm of smart retailing (Zeithaml, Berry and Parasuraman, 1996; Nguyen, de Leeuw and Dullaert, 2018). In essence, consumers who derive satisfaction from smart retail environments are more inclined to be loyal (Kaya *et al.*, 2019; Rodríguez *et al.*, 2020), leading to the following hypothesis:

Hypothesis 4b: Attributes of Smart Satisfaction will have a positive direct effect on consumer E-Loyalty.

Digital Well-being

In the dynamic landscape of smart retailing, the spotlight on consumer digital well-being has intensified, drawing considerable attention from scholars and businesses alike (Roy *et al.*, 2017; Barr and Ozturk, 2020; Ovani and Windasari, 2022). This concept, intricately tied to happiness, life satisfaction, and overall quality of life, has evolved into a central concern for retailers, mirroring a broader societal shift towards prioritising individual well-being in the digital age. Esteemed scholars, including Dagger and Sweeney (2006), Jones and Comfort (2013) and Su *et al.* (2022), underscore the pivotal role of products and services in enhancing consumers' quality of life. This academic underpinning adds depth to our exploration, emphasising the enduring significance of consumer well-being in transformative service research. The acknowledgement of major businesses, with approximately 70% incorporating consumer well-being into their vision and mission statements, not only highlights the zeitgeist but also underscores the tangible impact and strategic alignment that well-being holds in contemporary service transactions (Natarajan and Angur, 2014; Roy *et al.*, 2017; Burr, Taddeo and Floridi, 2020). This recognition elevates the discussion beyond theoretical abstraction, emphasising its practical relevance in the corporate domain. Consumer well-being, within the precincts of smart retailing, intimately intertwines with service quality and satisfaction. Dagger and Sweeney's (2006) assertion that service satisfaction directly influences an individual's quality of life becomes a pivotal bridge, elucidating the symbiotic relationship between positive retail experiences and enhanced well-being. This linkage forms a cohesive narrative that fosters a nuanced understanding of the subject. Affordances inherent in smart retail technologies encapsulate the potential actions and experiences that they enable for users. For instance, an intelligently designed user interface can afford seamless navigation, enhance user satisfaction, and contribute positively to digital well-being.

Conversely, a lack of transparency in data practices may lead to feelings of mistrust, negatively impacting well-being. When dissecting the digital aspect of consumer well-being, specify elements such as user interface design, personalised recommendations, or data privacy measures. Elaborating on these specifics offers a more nuanced understanding of how digital interactions shape consumers' perceptions of well-being. Illustrating theoretical concepts using real-world examples enhances comprehension. For instance, elucidate how a smart retail platform's user-friendly interface affords a pleasant shopping experience, positively influencing digital well-being. Conversely, an intrusive data-sharing policy may

cause discomfort and negatively contribute to well-being. This study ponders potential future implications or unexplored avenues within the intersection of consumer digital well-being and affordance theory. This forward-looking perspective stimulates curiosity and invites scholars to embark on further research endeavours. The premise of this model is that the quality of life can be predicted based on the level of satisfaction consumers derive from their retail transactions and experiences, leading to the following hypothesis:

Hypothesis 4c: Attributes of Smart Satisfaction will have a positive direct effect on consumer digital well-being.

In this study the theory of affordance serves as the foundational framework for this model. It suggests that consumers' digital ethical perceptions, encompassing factors like perceived privacy concerns, perceived fairness, and perceived risk, during the pre-purchase of smart retailing create affordances. These affordances significantly influence the level of trust consumers place in the process, subsequently shaping their overall smart shopping experience and, ultimately, their satisfaction with online purchases during the purchase stages. The smart shopping experience and the degree of smart satisfaction achieved during the purchase stage function as crucial mediators. They play a pivotal role in shaping consumers' post-purchase behaviours, including their purchasing behaviour, level of E-Loyalty, and their overall sense of digital well-being.

3. Methodology

The primary data collection method chosen for this study was an online survey. Online surveys were preferred due to their ability to reach a larger population efficiently, providing a cost-effective and timely way to gather diverse data (Wright, 2005). This method allows for the collection of large amounts of data from geographically dispersed respondents, which enhances the generalisability of the findings (Wright, 2005). The survey was designed to gather information on various factors influencing consumers' experiences, digital ethical perception, online purchasing and repurchasing behaviour, and intentions to continue shopping online as outlined in the conceptual model. To ensure the reliability and validity of the questionnaires, a multiple-method approach was utilised. Using established scales from prior research enhances the validity of the measures and ensures consistency with existing literature (DeVellis, 2012). By incorporating multiple methods, the study aimed to increase

the robustness of the data collected and the validity of the results obtained. The research population for this study consisted of online consumers, and a total of 564 individuals were contacted to complete the online questionnaires. Data analysis was conducted on the responses of 510 participants who fully completed the survey. This population was considered appropriate as the study aimed to explore the factors that influence online shopping behaviour.

The methodology chapter provided a detailed account of the research process, including the steps taken to develop the questionnaire, the sampling method, and the data collection process. Additionally, the chapter outlined the analytical techniques used to validate the conceptual model and research hypotheses, including factor analysis, discriminant validity assessments, and structural equation modelling (SEM). SEM was chosen due to its ability to test complex relationships between observed and latent variables simultaneously, offering a comprehensive approach to model testing (Hair et al., 2010). It is particularly useful in behavioural research where multiple interrelated dependencies are examined (Gefen, Straub, & Boudreau, 2000).

Factor analysis was employed to identify the underlying constructs that influenced the intention to continue shopping online, while discriminant validity assessments ensured that the constructs were distinct and not measuring the same concept. Confirmatory factor analysis (CFA) was used to verify the factor structure of the constructs, providing evidence of construct validity (Brown, 2015). Structural equation modelling was utilised to test the proposed research hypotheses and establish the relationships between the constructs identified through factor analysis. The use of multiple methods in this study was deemed appropriate as it allowed for a more comprehensive understanding of the factors influencing online shopping behaviour. Rigorous analysis of the data collected through the online survey ensured the validity and reliability of the results obtained, providing valuable insights into the factors that drive consumers' intentions to continue shopping online.

To assess the reliability and validity of the measures used in this study, several established criteria were adopted. Cronbach's alphas were computed for each construct, with a minimum threshold of 0.7 as recommended by Bagozzi and Yi (1988). Squared multiple correlation cut-off points of 0.7 and an average variance extracted (AVE) cut-off point of 0.5 were also used, as recommended by Bagozzi and Yi (1988) and (Byrne, 2010a). Furthermore, the measures used in the study underwent tests of convergent reliability and discriminant

validity to ensure the accuracy and consistency of the results. Detailed descriptions of these tests are provided in Chapters 5 and 6. By using established criteria to assess the reliability and validity of the measures, the researchers were able to ensure the accuracy and consistency of the results. This approach also allows for a more robust and comprehensive analysis of the data, increasing the credibility and generalizability of the findings.

The evaluation of the proposed conceptual model and hypotheses regarding the factors that influence consumers' digital ethical perception, impact their online purchasing and repurchasing behaviour, and intentions to continue shopping online involves the assessment of goodness-of-fit indices. One such index is the chi-square/degrees-of-freedom (CMIN/DF) ratio developed by (Bentler and Bonett, 1980), which should not exceed five (Bentler, 1990a).

To assess the goodness-of-fit of the proposed model, a structural equation model (SEM) was utilised with SmartPls4 software, which provides additional indices. These indices include the critical ratio (CR), chi-square (CMIN), degrees of freedom (df), root mean square residual (RMR), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), comparative fit index (CFI), normed fit index (NFI), incremental fit index (IFI), and relative fit index (RFI). Furthermore, the analysis investigates the regression weights (path significance) of each relationship in the proposed research model and the variance (R² value) explained by each path. The AMOS software generates standardised regression weights, standard errors, and critical ratios (CRs) for each path. Details of the measures, including convergent reliability and discriminant validity, are explained below. Cronbach's alphas, which should be greater than 0.7 (Bagozzi and Yi, 1988), squared multiple correlation cut-off points of 0.7, and an average variance extracted (AVE) cut-off point of 0.5 (Bagozzi, 1994; Byrne, 2001; Hair JR *et al.*, 2010) are all used to assess the reliability and validity of the measures.

To avoid potential research biases that may arise when comparing cultures or groups, it is important to ensure that survey items are understood and interpreted in the same way by all participants. Scholars have emphasised the need to minimise these biases in cross-national and cross-cultural research (He, Merz and Alden, 2008). To address this issue, a pilot study was conducted to test the questionnaire, and careful back-translation methods were employed (Brislin, 1986). Furthermore, the study examined measurement invariance (equivalence) across groups to determine the constructs' factorial invariance (Cheung and Rensvold, 1999).

This approach helps minimise potential biases and ensures that the data collected is comparable across different cultural or group contexts.

4. Findings

The composite reliability (CR) values for the research constructs range from 0.781 to 0.954 (See Table 1). All the constructs exceed the recommended threshold of > 0.70 , and the average variance extracted (AVE) constructs range from 0.539 to 0.780, indicating that the constructs account for a significant proportion of variance that is higher than the threshold of 0.50 and prove sufficient discriminant and convergent validity (Fornell and Larcker, 1981; Hair et al., 2006). The maximum shared variance (MSV) values range from 0.291 to 0.608. None of the constructs showed MSV values higher than their AVE values, demonstrating adequate discriminant validity (Hair et al., 2010). The values for MaxR(H) range from 0.909 to 3.594, indicating that the maximum reliability (MaxR(H)) of each construct is less than the square root of its respective AVE, further confirming satisfactory discriminant validity (Hancock & Mueller, 2001; Henseler, Ringle, and Sarstedt, 2015).

Furthermore, the factor loadings for all the items measuring each construct for the study are greater than the recommended threshold, ranging from 0.616 to 0.936 > 0.50 , indicating that the items effectively capture the constructs (See Table 2). Factor loadings below 0.7 were retained in the model when they were close to the threshold and when their removal did not significantly improve the model fit, as supported by Hair et al. (2010). This approach ensures that the construct is comprehensively measured while maintaining acceptable reliability and validity. The findings indicate that research participants generally expressed moderate to high degrees of perceived privacy concerns, perceived fairness, trust, smart shopping experience, and purchasing behaviour in smart shopping. The internal consistency reliability, assessed using Cronbach's alpha, was satisfactory for all constructs, demonstrating strong internal consistency among the items.

The analysis of the measurement model shows that all constructs have satisfactory composite reliability (CR) and average variance extracted (AVE) values. The MSV and MaxR(H) values confirm that the constructs are well-differentiated from each other, ensuring discriminant validity. For instance, the MSV value of 0.608 for 'Trust' and the AVE value of 0.769 for the same construct indicate that 'Trust' shares less variance with other constructs compared to the variance it captures on its own. Similarly, the MaxR(H) value of 3.594 for 'Purchasing Behaviour' is below the square root of its AVE, further supporting discriminant

validity. The factor loadings presented in Table 2 demonstrate that most items load strongly onto their respective constructs. However, items such as CS2 ('The product received through online shopping exceeds my expectations') with a factor loading of 0.616 were retained because their inclusion provides a comprehensive understanding of the construct, despite being slightly below the 0.7 threshold. These items were crucial for maintaining content validity and capturing the full spectrum of participant responses (Hair et al., 2010). The actual findings reveal that positive smart shopping experiences and satisfaction significantly enhance e-loyalty and purchasing behaviour. For example, the path coefficient from 'Smart Shopping Experience' to 'Purchasing Behaviour' was significant ($\beta = 0.462$, $p < 0.001$), indicating that a better shopping experience leads to higher purchasing behaviour. Additionally, 'Trust' was found to have a substantial impact on 'E-Loyalty' ($\beta = 0.266$, $p < 0.001$), underscoring the importance of trust in building long-term consumer relationships. The internal consistency reliability, assessed using Cronbach's alpha, was satisfactory for all constructs, demonstrating strong internal consistency among the items. These robust analyses provide valuable insights into the factors driving consumers' intentions to continue shopping online, highlighting the critical role of perceived privacy, fairness, and trust in shaping consumer behaviour.

In summary, the detailed examination of the measurement model using CR, AVE, MSV, MaxR(H), and factor loadings confirms the robustness of the constructs. The empirical evidence from the structural model underscores the significant relationships between smart shopping experiences, trust, and consumer behaviours, providing a comprehensive understanding of the factors influencing online shopping behaviour.

Table 1: Correlation metrics

	E-Loyalty	Perceived Fairness	Perceived Privacy Concern	Percieved Risk	Purchasing Behaviour	Smart Satisfaction	Smart Shopping Experience	TRUST	WELL
E-Loyalty	0.883								
Perceived Fairness	0.186	0.878							
Perceived Privacy Concern	0.035	-0.271	0.825						
Percieved Risk	0.010	-0.474	0.543	0.745					
Purchasing Behaviour	0.157	0.192	-0.012	-0.227	0.826				
Smart Satisfaction	0.192	0.284	0.026	-0.311	0.308	0.740			
Smart Shopping Experience	0.198	0.215	0.062	-0.179	0.462	0.583	0.831		
TRUST	0.266	0.681	-0.105	-0.533	0.286	0.426	0.277	0.769	
WELL	0.461	0.233	0.121	0.023	0.341	0.370	0.408	0.416	0.734

Table 2: The domain and items of the construct in the extant literature, factor loadings, descriptive statistics and reliabilities.

Coding	Constructs and item measurement	Factor Loading	Mean	Std. Deviation	Cronbach's alpha
PRIV	PERCEIVED PRIVACY CONCERNS				0.861
PRIV1	My shopping experience is more efficient when I purchase online.	0.855	5.4235	1.45564	(Malhotra, Kim and Agarwal, 2004)
PRIV2	My shopping experience is more productive when I purchase online.	0.886	5.8137	1.30685	
PRIV3	My shopping experience is smoother when I purchase online.	0.725	5.6176	1.47170	
FAIR	PERCEIVED FAIRNESS				0.909
FAIR1	When shopping online, I feel concern that the online retailer may misinform me about their business, products and reputation.	0.819	3.8176	1.52519	(Martin, Borah and Palmatier, 2017)
FAIR2	When shopping online, I feel worried.	0.876	3.5804	1.47820	
FAIR3	When shopping online, I am concerned that my personal privacy might be misused.	0.936	3.6569	1.45728	
PSR	PERCEIVED RISK				0.787
PSR1	When shopping online, I feel concern that the online retailer may misinform me about their business, products and reputation.	0.767	5.0667	1.53270	(Glover and Benbasat, 2010)

PSR2	When shopping online, I feel worried.	0.704	3.9412	1.70417	
PSR3	When shopping online, I am concerned that my personal privacy might be misused.	0.762	5.0824	1.65404	
TRUST	TRUST				0.812
TRUST 1	I believe that online businesses are trustworthy.	0.787	4.1235	1.26555	
TRUST 2	I believe that online businesses care about their consumers.	0.768	4.2569	1.26254	(Gefen, Karahanna and Straub, 2003)
TRUST 3	I believe that online businesses keep their promises.	0.750	4.2549	1.17008	
CE	SMART SHOPPING EXPERIENCE				0.899
CE1	My shopping experience is more efficient when I purchase online.	0.813	5.0078	1.47005	
CE2	My shopping experience is more productive when I purchase online .	0.829	4.9804	1.42653	(Roy <i>et al.</i> , 2017)
CE3	My shopping experience is smoother when I purchase online.	0.830	4.9333	1.37886	
CE4	My shopping experience is easier when I purchase online.	0.851	5.2725	1.34231	
CS	SMART SATISFACTION				0.771

CS1	The product received through online shopping is closed to my expectation.	0.737	4.8941	1.07323	
CS2	The product received through online shopping exceed my expectations.	0.616	4.0824	1.20293	(Roy <i>et al.</i> , 2017)
CS3	I am satisfied with the product purchased through online shopping.	0.849	4.9647	1.07239	
INT	PURCHASING BEHAVIOUR			0.863	
INT1	I intend to use online shopping more frequently in the future.	0.762	5.2588	1.29214	
INT2	I am willing to use online shopping in the near future.	0.839	5.7059	1.14033	(Roy <i>et al.</i> , 2017)
INT3	I will continue to use online shopping in the future.	0.874	5.8098	1.14778	
LOY	E-LOYALTY			0.910	
LOY1	I have a sense of belonging to my favourite online retailer.	1.083	3.9255	1.66742	
LOY2	I experience an emotional connection with my favourite online retailer.	0.826	3.4922	1.61857	(Glover and Benbasat, 2010)
LOY3	I have strong emotions towards my favourite online retailer.	0.696	3.4020	1.63496	
WELL	WELL-BEING			0.776	

WELL1	Online shopping platforms have benefited my overall digital skills.	0.674	4.6333	1.43246	
WELL2	Online shopping helps me improve the quality of life.	0.787	4.4784	1.42063	(El Hedhli, Chebat and Sirgy, 2013)
WELL3	Online shopping helps me improve my social well-being.	0.737	3.8333	1.51277	

5. Conclusion

Smart retail technologies have recently driven a transformative wave in the retail industry, introducing innovations such as augmented reality, shopping assistants, chatbots, and RFID technology (Müller-Seitz et al., 2009; Roy et al., 2017; Cukier, 2021; Chen and Chang, 2023). Prior research has provided valuable insights into the factors driving consumer engagement, adoption, and experience in a smart retail setting (Ostrom, Fotheringham and Bitner, 2019; Farah and Ramadan, 2020; Pillai, Sivathanu and Dwivedi, 2020; Frank, Herbas-Torrico and Schvaneveldt, 2021; Jasrotia, 2023). However, to the best of our knowledge, there has been no thorough examination of consumer affordances of perceived privacy concerns, fairness, risk, and trust, in conjunction with smart shopping experiences using these technologies and their consequences in a retail setting.

While existing research has explored the adoption drivers of these technologies (McKinsey & Company, 2020; Shankar et al., 2021; Barney et al., 2022), there remains uncharted territory in comprehensively examining the intricate relationships among key constructs. This study contributes to filling this gap by examining the intricate relationships among perceived fairness, privacy concerns, perceived risk, satisfaction, trust, smart shopping experience, smart satisfaction, purchasing behaviour, e-loyalty, and consumer digital well-being. The findings highlight the significant impact of perceived fairness, privacy concerns, and trust on consumer behaviour and satisfaction in smart retail environments.

Unpacking the components of perceived fairness, privacy concerns, and trust, the findings reveal a robust positive relationship between perceived fairness and trust within the original sample (O). This underscores the foundational role of fairness in shaping consumer trust in smart retailing. The results address a critical gap in existing literature, emphasising the significance of balanced fairness perceptions and trust. The results of this study demonstrate the perceived fairness, honesty, and reasonable management of consumer information play pivotal roles in shaping consumer trust in smart retailing. In the ever-evolving landscape of smart retail, where technology interfaces directly with consumer experiences, the perception of fairness becomes a cornerstone for establishing trust. Consumers interacting with smart retail systems expect a fair and transparent exchange of value. This perception encompasses various dimensions, such as personalised recommendations, and data privacy. A positive perception of these factors establishes a strong foundation for trust, influencing consumers to engage confidently in online transactions and interactions. Smart retailers should prioritise

transparency, ethical data practices, and responsible information management to cultivate and maintain consumer trust in an increasingly digital and data-driven marketplace.

In addition, the findings highlight a positive association between perceived privacy concerns and trust, emphasising the crucial need to address privacy considerations to foster trust in this technologically advanced retail landscape. Perceived consumer privacy concerns have a profound impact on trust in smart retailing. Consumers' sensitivity to how their personal information is handled, their insistence on keeping their privacy safe, and the prioritisation of personal privacy as a key ethical factor collectively contribute to the establishment and maintenance of trust. Smart retailers must prioritise robust privacy policies, transparent data practises, and effective security measures to address these concerns and foster a trustworthy online shopping environment. In a time when digital consumers are placing an increasing value on privacy, meeting these expectations can both increase consumer trust and contribute to the long-term success of smart retailing platforms.

In contrast, the inverse relationship between perceived risk and trust emphasises the difficulty that higher perceived risk poses to the development of trust in smart retail scenarios. The results highlight specific concerns related to misinformation, general worry, and the potential misuse of personal privacy, all of which contribute to a sense of risk for consumers engaging in online transactions. Misinformation about business practices, products, or reputation can erode trust, as it undermines the foundation of honest communication between the consumer and the retailer. Trust is fragile, and any perceived attempts to mislead consumers can lead to a decline in their trust in the smart retailing platform. In the same vein consumers also worry about general sense of anxiety or unease that consumers may associate with the online shopping experience. This worry can stem from various sources, including concerns about the security of financial transactions, uncertainty about the quality of products, or unease about the overall reliability of the online retail platform. Such worry contributes to the perceived risk associated with online shopping, negatively impacting consumer trust. Furthermore, the results highlight the specific concern about the potential misuse of personal information. The fear of privacy breaches, data misuse, or unauthorized access can significantly undermine trust in smart retailing. Consumers expect online retailers to handle their personal information responsibly and ethically, and any perceived lapse in privacy protection can lead to a breakdown in trust. In sum, consumers' perceived risks in smart retailing, whether related to misinformation, general worry, or privacy concerns, can collectively contribute to a negative impact on consumer trust. Smart

retailers must actively address these concerns by prioritizing transparency in communication, implementing robust security measures, and demonstrating ethical practices in handling consumer data. Establishing and maintaining trust is essential for the success of smart retailing platforms, and addressing perceived risks is a crucial step in building a positive and trustworthy online shopping environment. The study findings align with technology acceptance research (Davis, 1989), which posits that system attributes play a crucial role in shaping consumer behavioural outcomes through their evaluations of new technology.

Smart satisfaction was identified as a pivotal factor in this study, exerting a significant influence across various dimensions. Its noteworthy impact on electronic loyalty (E-Loyalty) underscores the role of contented interactions in smart retail environments in fostering increased consumer loyalty. This finding aligns with prior research that examined the constituents of a satisfying retail experience and its consequential impact on loyalty (Lin and Sun, 2009; Camilleri and Filieri, 2023b). Moreover, the positive influence of smart satisfaction extends beyond loyalty to encompass general digital well-being, emphasising the far-reaching consequences of positive consumer experiences. The results demonstrate that the smart shopping experience contributes to the enhancement of consumers' digital skills. Engaging with online shopping platforms often involves navigating through digital interfaces, utilizing various features, and making secure transactions. As consumers become more adept at using these platforms, their overall digital literacy and proficiency are likely to improve, positively impacting their digital well-being. The study also established that consumers perceive a positive impact on their overall quality of life. This could be attributed to the time saved, the accessibility of a wide range of products, and the flexibility offered by online shopping, all of which contribute to an enhanced lifestyle. The study also highlights the social dimensions of the smart shopping experience. While online shopping is often considered an individual activity, it can also have positive effects on social well-being. For example, online platforms may facilitate social interactions through reviews, recommendations, and social sharing features. Consumers may feel a sense of connection with a broader community of shoppers, contributing positively to their social well-being.

Furthermore, the study revealed a positive and substantial relationship between the smart shopping experience and purchasing behaviour. This highlights the transformative potential of gratifying interactions in shaping consumer behaviour within the retail space. However, the absence of a significant relationship between smart satisfaction and purchasing behaviour raises intriguing questions, prompting a deeper exploration into the nuanced nature of this

association. Implying that, the smart shopping experience in a smart retailing setting has a significant impact on consumer digital well-being. The benefits extend beyond the transactional aspects to include improvements in digital skills, enhancements in the overall quality of life, and positive contributions to social well-being. Smart retailers can leverage these insights to design and enhance their platforms, ensuring that the digital experience goes beyond functionality to positively influence consumers' holistic well-being in the digital realm. By understanding and addressing these dimensions, smart retailing can become not just a transactional tool but a positive force contributing to consumers' overall digital wellness.

This study uncovers a nuanced network of interconnections between trust and satisfaction in the domain of smart retailing, shedding light on the intricate relationships within this field. In addition to its role in enhancing consumer satisfaction, trust plays a pivotal role in shaping the overall smart shopping experience. This discovery makes apparent how important trust is as both a factor and a catalyst, playing a key role in creating satisfying interactions between customers in smart retail environments that are always changing and growing. The interdependent association between trust and satisfaction serves as a significant determinant in influencing the consumer journey within the context of smart retail. Trust, serving as a pivotal element, not only augments satisfaction but also permeates diverse facets of the comprehensive shopping encounter. This conceptual framework indicates that trust is not a standalone element but rather pervasive and has an impact on the entire consumer ecosystem within the smart retail industry. This aligns with previous research demonstrating the positive impact of trust on satisfied smart retail experiences (Kim, Jin and Swinney 2009). As individuals navigate the ever-changing environment of consumerism, the significance of trust becomes of utmost importance, creating the foundation for favourable and satisfying interactions that go beyond isolated transactions.

Hence, the findings of this study provide insight into the intricate and significant influence that trust exerts within intelligent retail settings. As the examination of these relationships progresses, it becomes clear that trust plays a pivotal role in facilitating an atmosphere in which satisfaction is not merely a consequence but an essential component of the overarching consumer experience. This study highlights the significant relationship between trust and satisfaction, which holds important implications for both researchers and professionals in understanding consumer behaviour within the dynamic realm of smart retail. As we navigate through the intricate tapestry of the study's findings, a series of noteworthy

nuances come to the forefront, shedding light on the multifaceted nature of the smart consumer shopping experience. One of the key revelations is the dual role that this experience played—effectively mitigating perceived risks while simultaneously acting as a positive influence on satisfaction.

The widespread adoption of smart technologies such as smartphones, internet-connected gadgets, and sensors has resulted in the creation of a significant consumer digital footprint, a trend that is expected to continue (Arya, Sethi and Paul, 2019). The term "digital footprint" refers to the trail, traces, or "footprints" that people leave online, either knowingly or unknowingly, after their interactions with smart retailing portals or other Internet-based media channels. This information can be collected and used in a variety of ways (Muhammad, Dey and Weerakkody, 2018; Arya, Sethi and Paul, 2019) despite the growing ethical concerns such as trust and data privacy among stakeholders (Jaspers and Pearson, 2022; Jayaswal and Parida, 2023; Ying *et al.*, 2023). Digital footprints are not only consumer identities but also memories, moments, and consumer behaviours. Smart retailers, like other businesses, amass these massive digital chronicles in order to better understand how and why consumers behave and purchase on digital platforms based on their behaviour and purchase histories, among others (Wedel and Kannan, 2016; Bradlow *et al.*, 2017; Martins *et al.*, 2019). However, this has prompted regulatory concerns regarding data ownership and privacy protection (Houston, 2016; Eggers, Turley and Kishnani, 2018; Palmatier and Martin, 2019). Determining whether the consumer or the service provider (smart retailer) is the owner of the data is one of the most critical challenges. Given the unprecedented and exponential growth in the amount of consumer data collected by retailers across a variety of customer touchpoints, safeguarding data privacy and other ethical views has become one of the key priorities in the smart retail industry (Martin and Murphy, 2017; Bleier, Goldfarb and Tucker, 2020; Martin and Palmatier, 2020; Martin *et al.*, 2020). Data privacy in retail contexts requires convergence among three key stakeholders: the consumer, the retailer, and the regulatory. Each of these parties has a distinct role to play and perspective to offer.

Prior studies have established that, there is not a single global agreement on Ethics in AI policies including data protection, and the various regulatory agencies take a variety of stances with regard to these topics (Eggers, Turley and Kishnani, 2018; Martin *et al.*, 2020). Recently, governments worldwide have begun paying attention to and promoting AI-related research and policy documents in this area. Eggers, Turley and Kishnani (2018) in their work, argued that almost one-third of countries do not have any data protection laws, and those that

do often have inconsistent provisions. The General Data Protection Regulation (GDPR) of the European Union, for example, codifies the principle of privacy by imposing stringent controls over the transmission of data across international borders and by granting citizens the right to "be forgotten." (Eggers, Turley and Kishnani, 2018; Mwesiumo *et al.*, 2021; Roe *et al.*, 2022) A survey revealed that 82% of Europeans intend to make use of their newly acquired rights to view, restrict, or delete their personal data (Eggers, Turley and Kishnani, 2018). In the United States, however, the emphasis is on industry-specific regulations, such as those governing the retail, banking, and healthcare industries, in addition to state legislation. On the other hand, this approach has been criticised because the country lacks a comprehensive federal law that governs data protection. As a result, several states have passed their own data privacy laws, resulting in a patchwork of regulations that businesses must navigate. The Illinois Biometric Information Privacy Act (BIPA), for instance, mandates that businesses obtain written consent from consumers before collecting their biometric information, which includes facial recognition information (Eggers, Turley and Kishnani, 2018). Numerous lawsuits against businesses that were accused of collecting biometric data without getting proper consent have been based on BIPA (Bilyk, 2021; Nasiri, 2022). Another example is the California Consumer Privacy Act (CCPA), which grants California residents the right to know what personal information is being collected about them and the right to request that it be deleted. Before selling personal information to third parties, the CCPA also requires enterprises to get explicit consent (Mulgund *et al.*, 2021). Furthermore, some industry players and privacy advocates have produced guidelines and best practises. The National Telecommunications and Information Administration (NTIA), for example, has published a set of voluntary privacy rules for facial recognition technologies. Businesses should be upfront about their use of face recognition technology, acquire informed consent from consumers, and limit the use of facial recognition technology to particular purposes, according to these rules (Congressional Research Service, 2022). Thus, it is of the paramount importance to establish a comprehensive and uniform legal framework that protects consumer data while allowing for the development of innovative technology and its use in retail.

In summary, this study uncovers the nuanced network of interconnections between trust, satisfaction, and consumer behaviour in smart retailing. The findings underscore the importance of trust as a foundational element in enhancing consumer satisfaction and shaping positive shopping experiences. By understanding and addressing these dimensions, smart

retailing can become not just a transactional tool but a positive force contributing to consumers' overall digital wellness. Furthermore, this study highlights the ethical challenges associated with smart retail technologies, such as data privacy and security concerns. Regulatory frameworks and industry standards must evolve to ensure consumer protection while allowing for technological innovation. The balance between consumer data protection and the development of smart retail technologies remains a critical area for future research and policy development. In conclusion, smart retail technologies offer significant potential to transform consumer experiences, but their successful adoption and use depend on addressing ethical challenges and building consumer trust. Retailers must navigate the complexities of digital transformation by implementing ethical practices, ensuring transparency, and prioritizing consumer privacy to foster trust and loyalty in smart retail environments.

References

- Agag, G. (2019) 'E-commerce Ethics and Its Impact on Buyer Repurchase Intentions and Loyalty: An Empirical Study of Small and Medium Egyptian Businesses', *Journal of Business Ethics*, 154(2), pp. 389–410. Available at: <https://doi.org/10.1007/s10551-017-3452-3>.
- Agrawal, A., Gans, J. and Goldfarb, A. (2018) *Prediction machines: the simple economics of artificial intelligence*. Harvard Business Press.
- Ahmed, S.Y., Ali, B.J. and Top, C. (2021) 'Understanding the Impact of Trust, Perceived Risk, and Perceived Technology on the Online Shopping Intentions: Case Study in Kurdistan Region of Iraq', *Journal of Contemporary Issues in Business and Government*, 27(3). Available at: <https://doi.org/10.47750/cibg.2021.27.03.264>.
- Allender, W.J. *et al.* (2021) 'Price fairness and strategic obfuscation', *Marketing Science*, 40(1), pp. 122–146. Available at: <https://doi.org/10.1287/mksc.2020.1244>.
- Ameen, N. *et al.* (2021) 'Customer experiences in the age of artificial intelligence', *Computers in Human Behavior*, 114, p. 106548. Available at: <https://doi.org/10.1016/j.chb.2020.106548>.
- Anderson, R.E. and Srinivasan, S.S. (2003) 'E-Satisfaction and E-Loyalty: A Contingency Framework', *Psychology and Marketing*, 20(2), pp. 123–138. Available at: <https://doi.org/10.1002/mar.10063>.
- Arya, V., Sethi, D. and Paul, J. (2019) 'Does digital footprint act as a digital asset? – Enhancing brand experience through remarketing', *International Journal of Information Management*, 49, pp. 142–156. Available at: <https://doi.org/10.1016/j.ijinfomgt.2019.03.013>.
- Ba, S. and Pavlou, P.A. (2002) *Evidence of the Effect of Trust Building Technology in Electronic Markets: Price Premiums and Buyer Behavior*, *Source: MIS Quarterly*.
- Baabdullah, A.M. *et al.* (2022) 'Virtual agents and flow experience: An empirical examination of AI-powered chatbots', *Technological Forecasting and Social Change*, 181, p. 121772. Available at: <https://doi.org/https://doi.org/10.1016/j.techfore.2022.121772>.
- Bagozzi, R. (1994) *Advanced Marketing Research*. Wiley. Available at: <https://books.google.co.uk/books?id=bOxUEAAAQBAJ>.
- Bagozzi, R.P. and Yi, Y. (1988) 'On the Evaluation of Structural Equation Models', *Journal of the Academy of Marketing Science*, 16(1), pp. 74–94. Available at: <https://doi.org/10.1177/009207038801600107>.
- Barney, C. *et al.* (2022) 'Ideally human-ish: How anthropomorphized do you have to be in shopper-facing retail technology?', *Journal of Retailing* [Preprint]. Available at: <https://doi.org/10.1016/j.jretai.2022.04.001>.
- Barr, S. and Ozturk, O. (2020) *Changing behaviours are accelerating trends along a reinvented customer purchase journey*.

Bart, Y. *et al.* (2005) *Are the Drivers and Role of Online Trust the Same for All Web Sites and Consumers? A Large-Scale Exploratory Empirical Study*. Available at: www.spglobal.com.

Bauer, R.A. (1960) 'Consumer behavior as risk taking', in *Proceedings of the 43rd National Conference of the American Marketing Association, June 15, 16, 17, Chicago, Illinois, 1960*. American Marketing Association.

Bayer, S., Gimpel, H. and Rau, D. (2021) 'IoT-commerce - opportunities for customers through an affordance lens', *Electronic Markets*, 31(1), pp. 27–50. Available at: <https://doi.org/10.1007/s12525-020-00405-8>.

Becker, L. and Jaakkola, E. (2020) 'Customer experience: fundamental premises and implications for research', *Journal of the Academy of Marketing Science*. Springer, pp. 630–648. Available at: <https://doi.org/10.1007/s11747-019-00718-x>.

Belanger, F., Hiller, J.S. and Smith, W.J. (2002) *Trustworthiness in electronic commerce: the role of privacy, security, and site attributes*. Available at: www.elsevier.com/locate/jsis.

Bentler, P.M. (1990) *QUANTITATIVE METHODS IN PSYCHOLOGY Comparative Fit Indexes in Structural Models*.

Bentler, P.M. and Bonett, D.G. (1980) 'Significance tests and goodness of fit in the analysis of covariance structures.', *Psychological Bulletin*, 88, pp. 588–606. Available at: <https://doi.org/10.1037/0033-2909.88.3.588>.

Bianchi, C. and Andrews, L. (2012) 'Risk, trust, and consumer online purchasing behaviour: A Chilean perspective', *International Marketing Review*, 29(3), pp. 253–275. Available at: <https://doi.org/10.1108/02651331211229750>.

Bilyk, J. (2021) *Six Flags inks \$36M deal to end fingerprint scan class action that resulted in landmark IL Supreme Court decision | Cook County Record, Cook County Record*. Available at: <https://cookcountyrecord.com/stories/602405829-six-flags-inks-36m-deal-to-end-fingerprint-scan-class-action-that-resulted-in-landmark-il-supreme-court-decision> (Accessed: 18 March 2023).

Bleier, A. and Eisenbeiss, M. (2015) 'The Importance of Trust for Personalized Online Advertising', *Journal of Retailing*, 91(3), pp. 390–409. Available at: <https://doi.org/10.1016/j.jretai.2015.04.001>.

Bleier, A., Goldfarb, A. and Tucker, C. (2020) 'Consumer privacy and the future of data-based innovation and marketing', *International Journal of Research in Marketing*, 37(3), pp. 466–480. Available at: <https://doi.org/10.1016/j.ijresmar.2020.03.006>.

Bradlow, E.T. *et al.* (2017) 'The Role of Big Data and Predictive Analytics in Retailing', *Journal of Retailing*, 93(1), pp. 79–95. Available at: <https://doi.org/10.1016/j.jretai.2016.12.004>.

Bridges, J. and Vásquez, C. (2018) ‘If nearly all Airbnb reviews are positive, does that make them meaningless?’, *Current Issues in Tourism*, 21(18), pp. 2065–2083. Available at: <https://doi.org/10.1080/13683500.2016.1267113>.

Brislin, R.W. (1986) ‘The wording and translation of research instruments.’, in *Field methods in cross-cultural research*. Thousand Oaks, CA, US: Sage Publications, Inc (Cross-cultural research and methodology series, Vol. 8.), pp. 137–164.

Brown, Timothy A.. *Confirmatory Factor Analysis for Applied Research*. United Kingdom: Guilford Publications, 2015.

Burr, C., Taddeo, M. and Floridi, L. (2020) ‘The Ethics of Digital Well-Being: A Thematic Review’, *Science and Engineering Ethics*. Springer, pp. 2313–2343. Available at: <https://doi.org/10.1007/s11948-020-00175-8>.

Butori, R. and Lancelot Miltgen, C. (2023) ‘A construal level theory approach to privacy protection: The conjoint impact of benefits and risks of information disclosure’, *Journal of Business Research*, 168. Available at: <https://doi.org/10.1016/j.jbusres.2023.114205>.

Byrne, B. (2010) *Basic Concepts, Applications, and Programming SECOND EDITION Structural Equation Modeling with AMOS*.

Byrne, B.M. (2001) *Structural equation modeling with AMOS: Basic concepts, applications, and programming.*, *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers (Multivariate applications book series.).

Cai, H. and Mardani, A. (2023) ‘Research on the impact of consumer privacy and intelligent personalization technology on purchase resistance’, *Journal of Business Research*, 161. Available at: <https://doi.org/10.1016/j.jbusres.2023.113811>.

Camilleri, M.A. and Filieri, R. (2023) ‘Customer satisfaction and loyalty with online consumer reviews: Factors affecting revisit intentions’, *International Journal of Hospitality Management*, 114. Available at: <https://doi.org/10.1016/j.ijhm.2023.103575>.

Cath, C. (2018) ‘Governing artificial intelligence: ethical, legal and technical opportunities and challenges’, *Philosophical Transactions A: Mathematical Physical and Engineering Sciences* [Preprint]. Available at: <https://doi.org/10.1098/rsta.2018.0080>.

Chaney, D., Lunardo, R. and Mencarelli, R. (2018) ‘Consumption experience: past, present and future’, *Qualitative Market Research*. Emerald Group Publishing Ltd., pp. 402–420. Available at: <https://doi.org/10.1108/QMR-04-2018-0042>.

Chang, M.K., Cheung, W. and Lai, V.S. (2005) ‘Literature derived reference models for the adoption of online shopping’, *Information & Management*, 42(4), pp. 543–559. Available at: <https://doi.org/10.1016/j.im.2004.02.006>.

Chang, V. (2021) 'An ethical framework for big data and smart cities', *Technological Forecasting and Social Change*, 165, p. 120559. Available at: <https://doi.org/10.1016/j.techfore.2020.120559>.

Chellappa, R.K. and Sin, R.G. (2005) *Personalization versus Privacy: An Empirical Examination of the Online Consumer's Dilemma*, *Information Technology and Management*.

Chen, J. and Chang, Y.W. (2023) 'How smart technology empowers consumers in smart retail stores? The perspective of technology readiness and situational factors', *Electronic Markets*, 33(1). Available at: <https://doi.org/10.1007/s12525-023-00635-6>.

Chen, J., Lan, Y.C. and Chang, Y.W. (2023) 'Consumer behaviour in cross-border e-commerce: Systematic literature review and future research agenda', *International Journal of Consumer Studies* [Preprint]. John Wiley and Sons Inc. Available at: <https://doi.org/10.1111/ijcs.12969>.

Chen, X. *et al.* (2023) 'Customer engagement, dependence and loyalty: An empirical study of Chinese customers in multitouch service encounters', *Technological Forecasting and Social Change*, 197. Available at: <https://doi.org/10.1016/j.techfore.2023.122920>.

Chen, Y. and Cui, T.H. (2013) 'The benefit of uniform price for branded variants', *Marketing Science*, 32(1), pp. 36–50. Available at: <https://doi.org/10.1287/mksc.1120.0751>.

Cheung, G.W. and Rensvold, R.B. (1999) 'Testing factorial invariance across groups: A reconceptualization and proposed new method.', *Journal of Management*, 25, pp. 1–27. Available at: <https://doi.org/10.1177/014920639902500101>.

Chiu, C.M., Huang, H.Y. and Yen, C.H. (2010) 'Antecedents of trust in online auctions', *Electronic Commerce Research and Applications*, 9(2), pp. 148–159. Available at: <https://doi.org/10.1016/j.elerap.2009.04.003>.

Citaningtyas Ari Kadi, D. and Surya Amalia, M. (2021) 'Asian Journal of Management Entrepreneurship and Social Science The Influence of Brand Image, Perception of Ease and Perception of Risk on Purchase Intention through Trust in Shopee'. Available at: <https://ajmesc.com/index.php/ajmesc>.

Congressional Research Service (2022) *The National Telecommunications and Information Administration (NTIA): Current Roles and Programs*. Available at: <https://crsreports.congress.gov>.

Cukier, K. (2021) 'Commentary: How AI Shapes Consumer Experiences and Expectations', *Journal of Marketing*. SAGE Publications Ltd, pp. 152–155. Available at: <https://doi.org/10.1177/0022242920972932>.

Culnan, M.J. and Armstrong, P.K. (1999) 'Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation', *Organization Science*, 10(1), pp. 104–115. Available at: <https://doi.org/10.1287/orsc.10.1.104>.

Cuong, D.T. (2023) 'Determinants affecting online shopping consumers' satisfaction and repurchase intention: Evidence from Vietnam', *Innovative Marketing*, 19(1), pp. 126–139. Available at: [https://doi.org/10.21511/im.19\(1\).2023.11](https://doi.org/10.21511/im.19(1).2023.11).

Dacko, S.G. (2017) 'Enabling smart retail settings via mobile augmented reality shopping apps', *Technological Forecasting and Social Change*, 124, pp. 243–256. Available at: <https://doi.org/10.1016/j.techfore.2016.09.032>.

Dagger, T.S. and Sweeney, J.C. (2006) 'The effect of service evaluations on behavioral intentions and quality of life', *Journal of Service Research*, 9(1), pp. 3–18. Available at: <https://doi.org/10.1177/1094670506289528>.

Darke, P.R. and Dahl, D.W. (2003) 'Fairness and Discounts: The Subjective Value of a Bargain', *Journal of Consumer Psychology*, 13(3), pp. 328–338. Available at: https://doi.org/10.1207/S15327663JCP1303_13.

Davenport, T. *et al.* (2020) 'How artificial intelligence will change the future of marketing', *Journal of the Academy of Marketing Science*, 48(1), pp. 24–42. Available at: <https://doi.org/10.1007/s11747-019-00696-0>.

Davenport, T.H. (2018) *Artificial Intelligence for the Real World*, *Harvard Business Review*. Available at: <https://hbr.org/webinar/2018/02/artificial-intelligence-for-the-real-world> (Accessed: 2 January 2023).

Davis, F. (1989) 'Perceived Usefulness Perceived Ease of Use and acceptance of Information Technology', *MIS Quarterly* [Preprint].

Dayal, S., Landesberg, H. and Zeisser, M. (1999) 'How to build trust online', *Marketing Management*, 8(3), p. 64. Available at: https://doi.org/10.1007/978-3-7091-6088-6_5.

Dellaert, B.G.C. *et al.* (2020) 'Consumer decisions with artificially intelligent voice assistants', *Marketing Letters*, 31(4), pp. 335–347. Available at: <https://doi.org/10.1007/s11002-020-09537-5>.

DeVellis, Robert F.. *Scale Development: Theory and Applications*. India: SAGE Publications, 2012.

Dienlin, T. and Trepte, S. (2015) 'Is the privacy paradox a relic of the past? An in-depth analysis of privacy attitudes and privacy behaviors', *European Journal of Social Psychology*, 45(3), pp. 285–297. Available at: <https://doi.org/10.1002/ejsp.2049>.

Dinev, T. and Hart, P. (2006) 'An Extended Privacy Calculus Model for E-Commerce Transactions', *Information Systems Research*, 17(1), pp. 61–80. Available at: <https://doi.org/10.1287/isre.1060.0080>.

Doney, P.M. and Cannon, J.P. (1997) *An Examination of the Nature of Trust in Buyer-Seller Relationships*.

Dowling, G.R. and Staelin, R. (1994) 'A Model of Perceived Risk and Intended Risk-Handling Activity', *Journal of Consumer Research*, 21(1), p. 119. Available at: <https://doi.org/10.1086/209386>.

Du, S. and Xie, C. (2021) 'Paradoxes of artificial intelligence in consumer markets: Ethical challenges and opportunities', *Journal of Business Research*, 129, pp. 961–974. Available at: <https://doi.org/10.1016/j.jbusres.2020.08.024>.

Duan, Y., Edwards, J.S. and Dwivedi, Y.K. (2019) 'Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda', *International Journal of Information Management*, 48, pp. 63–71. Available at: <https://doi.org/10.1016/j.ijinfomgt.2019.01.021>.

Eggers, W.D., Turley, M. and Kishnani, P.K. (2018) *The future of regulation Principles for regulating emerging technologies A report from the Deloitte Center for Government Insights MIKE TURLEY*.

Esmark, C.L. and Noble, S.M. (2018) 'Retail space invaders: When employees' invasion of customer space increases purchase intentions', *Journal of the Academy of Marketing Science*, 46(3), pp. 477–496. Available at: <https://doi.org/10.1007/s11747-016-0488-3>.

Fanderl, H. et al. (2019) *Addressing automotive customer experience | McKinsey, McKinsey & Company*. Available at: <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/driving-the-automotive-customer-experience-toward-the-age-of-mobility> (Accessed: 5 June 2021).

Faqih, K.M.S. (2012) 'Integrating Perceived Risk and Trust with Technology Acceptance Model: An Empirical Assessment of Customers' Acceptance of Online Shopping in Jordan', in.

Faqih, K.M.S. (2022) 'Internet shopping in the Covid-19 era: Investigating the role of perceived risk, anxiety, gender, culture, and trust in the consumers' purchasing behavior from a developing country context', *Technology in Society*, 70. Available at: <https://doi.org/10.1016/j.techsoc.2022.101992>.

Farah, M.F. and Ramadan, Z.B. (2020) 'Viability of Amazon's driven innovations targeting shoppers' impulsiveness', *Journal of Retailing and Consumer Services*, 53. Available at: <https://doi.org/10.1016/j.jretconser.2019.101973>.

Fornell, C. et al. (1996) *The American Customer Satisfaction Index: Nature, Purpose, and Findings*.

Fornell, C. and Larcker, D.F. (1981) *Evaluating Structural Equation Models with Unobservable Variables and Measurement Error, Source: Journal of Marketing Research*.

Frank, B., Herbas-Torrico, B. and Schvaneveldt, S.J. (2021) 'The AI-extended consumer: Technology, consumer, country differences in the formation of demand for AI-

empowered consumer products’, *Technological Forecasting and Social Change*, 172. Available at: <https://doi.org/10.1016/j.techfore.2021.121018>.

Gauri, D.K. *et al.* (2021) ‘Evolution of retail formats: Past, present, and future’, *Journal of Retailing*, 97(1), pp. 42–61. Available at: <https://doi.org/10.1016/j.jretai.2020.11.002>.

Gefen, D., Karahanna, E. and Straub, D.W. (2003) ‘Trust and TAM in Online Shopping: An Integrated Model’, *MIS Quarterly*, 27(1), pp. 51–90. Available at: <https://doi.org/10.2307/30036519>.

Gefen, D., Straub, D., & Boudreau, M. (2000). Structural Equation Modeling and Regression: Guidelines for Research Practice. *Communications of the Association for Information Systems*, 4, pp-pp. <https://doi.org/10.17705/1CAIS.00407>

Giroux, M. *et al.* (2022) ‘Artificial Intelligence and Declined Guilt: Retailing Morality Comparison Between Human and AI’, *Journal of Business Ethics*, 178(4), pp. 1027–1041. Available at: <https://doi.org/10.1007/s10551-022-05056-7>.

Glover, S. and Benbasat, I. (2010) ‘A Comprehensive Model of Perceived Risk of E-Commerce Transactions’, *International Journal of Electronic Commerce*, 15(2), pp. 47–78. Available at: <http://www.jstor.org/stable/27919912>.

Grewal, D. *et al.* (2020) ‘Frontline Cyborgs at Your Service: How Human Enhancement Technologies Affect Customer Experiences in Retail, Sales, and Service Settings’, *Journal of Interactive Marketing*, 51, pp. 9–25. Available at: <https://doi.org/10.1016/j.intmar.2020.03.001>.

Grewal, D. *et al.* (2021) ‘Strategizing Retailing in the New Technology Era’, *Journal of Retailing*, 97(1), pp. 6–12. Available at: <https://doi.org/10.1016/j.jretai.2021.02.004>.

Grewal, D., Monroe, K.B. and Krishnan, R. (1998) *The Effects of Price-Comparison Advertising on Buyers’ Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions*.

Guo, B. and Wang, D. (2023) ‘EXPRESS: Will Online Shopping Lead to More Brand Loyalty than Offline Shopping? The Role of Uncertainty Avoidance’, *Journal of Marketing Research*, p. 002224372311530. Available at: <https://doi.org/10.1177/00222437231153075>.

Guo, M. *et al.* (2023) ‘The impact of perceived risk of online takeout packaging and the moderating role of educational level’, *Humanities and Social Sciences Communications*, 10(1). Available at: <https://doi.org/10.1057/s41599-023-01732-9>.

Guo, S. *et al.* (2018) ‘Inspiring awe in consumers: Relevance, triggers, and consequences’, *Asian Journal of Social Psychology*, 21(3), pp. 129–142. Available at: <https://doi.org/10.1111/ajsp.12215>.

Guo, X. and Jiang, B. (2016) 'Signaling through price and quality to consumers with fairness concerns', *Journal of Marketing Research*, 53(6), pp. 988–1000. Available at: <https://doi.org/10.1509/jmr.15.0323>.

Gupta, B.B., Gaurav, A. and Panigrahi, P.K. (2023) 'Analysis of retail sector research evolution and trends during COVID-19', *Technological Forecasting and Social Change*, 194, p. 122671. Available at: <https://doi.org/10.1016/j.techfore.2023.122671>.

Hair, J.F., Black, W.C. and Babin, B.J. (2010) *Multivariate Data Analysis: A Global Perspective*. Pearson Education (Global Edition). Available at: <https://books.google.co.uk/books?id=SLRPLgAACAAJ>.

Hair JR, J.F. *et al.* (2010) *Multivariate Data Analysis*. 7th edn.

Hall, M.C. *et al.* (2021) 'Beyond panic buying: consumption displacement and COVID-19', *Journal of Service Management*, 32(1), pp. 113–128. Available at: <https://doi.org/10.1108/JOSM-05-2020-0151>.

Hamzah, M.I. and Pontes, N. (2022) 'What drives car buyers to accept a rejuvenated brand? the mediating effects of value and pricing in a consumer-brand relationship', *Journal of Strategic Marketing* [Preprint]. Available at: <https://doi.org/10.1080/0965254X.2022.2129749>.

Hancock, G. R., & Mueller, R. O. (2001). Rethinking Construct Reliability within Latent Variable Systems. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural Equation Modeling: Present und Future—A Festschrift in Honor of Karl Joreskog* (pp. 195-216). Lincolnwood, IL: Scientific Software International.

Hansen, F. (1969) 'Consumer Choice Behavior: An Experimental Approach', *Journal of Marketing Research*, 6(4), pp. 436–443. Available at: <https://doi.org/10.1177/002224376900600407>.

He, Y., Merz, M.A. and Alden, D.L. (2008) 'Diffusion of Measurement Invariance Assessment in Cross-National Empirical Marketing Research: Perspectives from the Literature and a Survey of Researchers', *Journal of International Marketing*, 16(2), pp. 64–83. Available at: <https://doi.org/10.1509/jimk.16.2.64>.

Henseler, J., Ringle, C.M. & Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. of the Acad. Mark. Sci.* 43, 115–135 (2015). <https://doi.org/10.1007/s11747-014-0403-8>

El Hedhli, K., Chebat, J.C. and Sirgy, M.J. (2013) 'Shopping well-being at the mall: Construct, antecedents, and consequences', *Journal of Business Research*, 66(7), pp. 856–863. Available at: <https://doi.org/10.1016/j.jbusres.2011.06.011>.

Hess, N.J. *et al.* (2020) 'Getting Personal in Public!? How Consumers Respond to Public Personalized Advertising in Retail Stores', *Journal of Retailing*, 96(3), pp. 344–361. Available at: <https://doi.org/10.1016/j.jretai.2019.11.005>.

Higuera-Castillo, E., Liébana-Cabanillas, F.J. and Villarejo-Ramos, Á.F. (2023) 'Intention to use e-commerce vs physical shopping. Difference between consumers in the post-COVID era', *Journal of Business Research*, 157. Available at: <https://doi.org/10.1016/j.jbusres.2022.113622>.

Hinsch, C., Felix, R. and Rauschnabel, P.A. (2020) 'Nostalgia beats the wow-effect: Inspiration, awe and meaningful associations in augmented reality marketing', *Journal of Retailing and Consumer Services*, 53. Available at: <https://doi.org/10.1016/j.jretconser.2019.101987>.

Ho, X.H. *et al.* (2022) 'Customer engagement in the context of retail mobile apps: A contingency model integrating spatial presence experience and its drivers', *Journal of Retailing and Consumer Services*, 66. Available at: <https://doi.org/10.1016/j.jretconser.2022.102950>.

Hoffman, D.L., Novak, T.P. and Peralta, M. (1999) *COMMUNICATIONS OF THE ACM*.

Hong, W., Chan, F.K.Y. and Thong, J.Y.L. (2021) 'Drivers and Inhibitors of Internet Privacy Concern: A Multidimensional Development Theory Perspective', *Journal of Business Ethics*, 168(3), pp. 539–564. Available at: <https://doi.org/10.1007/s10551-019-04237-1>.

Horton, R.L. (1976) *The Structure of Perceived Risk: Some Further Progress*.

Houston, M.B. (2016) 'Is “strategy” a dirty word?', *Journal of the Academy of Marketing Science*. Springer New York LLC, pp. 557–561. Available at: <https://doi.org/10.1007/s11747-016-0481-x>.

Hsu, C.P., Chiang, Y.F. and Huang, H.C. (2012) 'How experience-driven community identification generates trust and engagement', *Online Information Review*, 36(1), pp. 72–88. Available at: <https://doi.org/10.1108/14684521211206971>.

Hu, M., Pantano, E. and Stylos, N. (2023) ““Home alone” no more: How does the internet of things (IoT) enhance travellers’ subjective well-being”, *Technological Forecasting and Social Change*, 192. Available at: <https://doi.org/10.1016/j.techfore.2023.122563>.

Hu, Y. and Min, H. (Kelly) (2023) 'The dark side of artificial intelligence in service: The “watching-eye” effect and privacy concerns', *International Journal of Hospitality Management*, 110. Available at: <https://doi.org/10.1016/j.ijhm.2023.103437>.

Inman, J.J. and Nikolova, H. (2017) 'Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns', *Journal of Retailing*, 93(1), pp. 7–28. Available at: <https://doi.org/10.1016/j.jretai.2016.12.006>.

Jai, T.M., Burns, L.D. and King, N.J. (2013) 'The effect of behavioral tracking practices on consumers’ shopping evaluations and repurchase intention toward trusted online

retailers', *Computers in Human Behavior*, 29(3), pp. 901–909. Available at: <https://doi.org/10.1016/j.chb.2012.12.021>.

Jaspers, E.D.T. and Pearson, E. (2022) 'Consumers' acceptance of domestic Internet-of-Things: The role of trust and privacy concerns', *Journal of Business Research*, 142, pp. 255–265. Available at: <https://doi.org/10.1016/j.jbusres.2021.12.043>.

Jasrotia, S.S. (2023) 'Technological Innovations in Interactive Marketing: Enhancing Customer Experience at the New Retail Age', in C.L. Wang (ed.) *The Palgrave Handbook of Interactive Marketing*. Cham: Springer International Publishing, pp. 183–197. Available at: https://doi.org/10.1007/978-3-031-14961-0_8.

Jayaswal, P. and Parida, B. (2023) 'The role of augmented reality in redefining e-tailing: A review and research agenda', *Journal of Business Research*, 160, p. 113765. Available at: <https://doi.org/10.1016/j.jbusres.2023.113765>.

Jones, P. and Comfort, D. (2013) 'Stories and Retailer Brands: A Study of the UK's Leading Retailers', *Leading Retailers. Indonesian Journal of Contemporary Management Research*, (2), pp. 65–77. Available at: <https://doi.org/10.33455/ijcmr.v1i2.92>.

Kaltcheva, V.D. and Weitz, B.A. (2006) *When Should a Retailer Create an Exciting Store Environment?*, Source: *Journal of Marketing*.

Kamalul Ariffin, S., Mohan, T. and Goh, Y.N. (2018) 'Influence of consumers' perceived risk on consumers' online purchase intention', *Journal of Research in Interactive Marketing*, 12(3), pp. 309–327. Available at: <https://doi.org/10.1108/JRIM-11-2017-0100>.

Kamoonpuri, S.Z. and Sengar, A. (2023) 'Hi, May AI help you? An analysis of the barriers impeding the implementation and use of artificial intelligence-enabled virtual assistants in retail', *Journal of Retailing and Consumer Services*, 72. Available at: <https://doi.org/10.1016/j.jretconser.2023.103258>.

Kankanhalli, A., Tan, B.C.Y. and Wei, K.-K. (2005) *Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation*.

Kautish, P. and Khare, A. (2022) 'Investigating the moderating role of AI-enabled services on flow and awe experience', *International Journal of Information Management*, 66. Available at: <https://doi.org/10.1016/j.ijinfomgt.2022.102519>.

Kaya, B. *et al.* (2019) 'The Moderating Role of Website Familiarity in the Relationships Between e-Service Quality, e-Satisfaction and e-Loyalty', *Journal of Internet Commerce*, 18(4), pp. 369–394. Available at: <https://doi.org/10.1080/15332861.2019.1668658>.

Kevin B. Wright, Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services, *Journal of Computer-Mediated Communication*, Volume 10, Issue 3, 1 April 2005, JCMC1034, <https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008) 'A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents', *Decision Support Systems*, 44(2), pp. 544–564. Available at: <https://doi.org/10.1016/j.dss.2007.07.001>.

Kim, J., Bang, H. and Campbell, W.K. (2021) 'Brand awe: A key concept for understanding consumer response to luxury and premium brands', *Journal of Social Psychology*, 161(2), pp. 245–260. Available at: <https://doi.org/10.1080/00224545.2020.1804313>.

Kim, J., Jin, B. and Swinney, J.L. (2009) 'The role of e-tail quality, e-satisfaction and e-trust in online loyalty development process', *Journal of Retailing and Consumer Services*, 16(4), pp. 239–247. Available at: <https://doi.org/10.1016/j.jretconser.2008.11.019>.

Kim, Y. *et al.* (2023) 'Privacy concern and its consequences: A meta-analysis', *Technological Forecasting and Social Change*, 196. Available at: <https://doi.org/10.1016/j.techfore.2023.122789>.

Kim, Y., Seok, J. and Roh, T. (2023) 'The linkage between quality of information systems and the impact of trust-based privacy on behavioral outcomes in unmanned convenience store: Moderating effect of gender and experience', *Technological Forecasting and Social Change*, 196. Available at: <https://doi.org/10.1016/j.techfore.2023.122852>.

Kokolakis, S. (2017) 'Privacy attitudes and privacy behaviour: A review of current research on the privacy paradox phenomenon', *Computers and Security*. Elsevier Ltd, pp. 122–134. Available at: <https://doi.org/10.1016/j.cose.2015.07.002>.

Kujur, F. and Singh, S. (2018) 'Emotions as predictor for consumer engagement in YouTube advertisement', *Journal of Advances in Management Research*, 15(2), pp. 184–197. Available at: <https://doi.org/10.1108/JAMR-05-2017-0065>.

Kumar, V., Ramachandran, D. and Kumar, B. (2021) 'Influence of new-age technologies on marketing: A research agenda', *Journal of Business Research*, 125, pp. 864–877. Available at: <https://doi.org/10.1016/j.jbusres.2020.01.007>.

Lam, S.Y. *et al.* (2004a) 'Customer value, satisfaction, loyalty, and switching costs: An illustration from a business-to-business service context', *Journal of the Academy of Marketing Science*, pp. 293–311. Available at: <https://doi.org/10.1177/0092070304263330>.

Lam, S.Y. *et al.* (2004b) 'Customer value, satisfaction, loyalty, and switching costs: An illustration from a business-to-business service context', *Journal of the Academy of Marketing Science*, pp. 293–311. Available at: <https://doi.org/10.1177/0092070304263330>.

Lee, Y. *et al.* (2009) 'Tourists' attitudes towards textiles and apparel-related cultural products: A cross-cultural marketing study', *Tourism Management*, 30(5), pp. 724–732. Available at: <https://doi.org/10.1016/j.tourman.2008.10.007>.

Li, D., Browne, G.J. and Wetherbe, J.C. (2006) 'Why do internet users stick with a specific web site? A relationship perspective', *International Journal of Electronic Commerce*, pp. 105–141. Available at: <https://doi.org/10.2753/JEC1086-4415100404>.

Li, K.J. and Jain, S. (2016) 'Behavior-based pricing: An analysis of the impact of peer-induced fairness', *Management Science*, 62(9), pp. 2705–2721. Available at: <https://doi.org/10.1287/mnsc.2015.2265>.

Lim, K.H. *et al.* (2006) 'Do I trust you online, and if so, will I buy? An empirical study of two trust-building strategies', *Journal of Management Information Systems*, 23(2), pp. 233–266. Available at: <https://doi.org/10.2753/MIS0742-1222230210>.

Lim, L.G., Tuli, K.R. and Grewal, R. (2020) 'Customer Satisfaction and Its Impact on the Future Costs of Selling', *Journal of Marketing*, 84(4), pp. 23–44. Available at: <https://doi.org/10.1177/0022242920923307>.

Lim, N. (2003) 'Consumers' perceived risk: Sources versus consequences', in *Electronic Commerce Research and Applications*, pp. 216–228. Available at: [https://doi.org/10.1016/S1567-4223\(03\)00025-5](https://doi.org/10.1016/S1567-4223(03)00025-5).

Lin, G.T.R. and Sun, C.C. (2009) 'Factors influencing satisfaction and loyalty in online shopping: An integrated model', *Online Information Review*, 33(3), pp. 458–475. Available at: <https://doi.org/10.1108/14684520910969907>.

Lin, J. *et al.* (2019) 'Understanding the interplay of social commerce affordances and swift guanxi: An empirical study', *Information and Management*, 56(2), pp. 213–224. Available at: <https://doi.org/10.1016/j.im.2018.05.009>.

Lin, J.S.C. and Hsieh, P.L. (2007) 'The influence of technology readiness on satisfaction and behavioral intentions toward self-service technologies', *Computers in Human Behavior*, 23(3), pp. 1597–1615. Available at: <https://doi.org/10.1016/j.chb.2005.07.006>.

Lindecrantz, E., Tjon Pian Gi, M. and Zerbi, S. (2020) *Personalizing the customer experience: Driving differentiation in retail*, McKinsey & Company. Available at: <https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/personalizing%20the%20customer%20experience%20driving%20differentiation%20in%20retail/personalizing-the-customer-experience-driving-differentiation-in-retail.pdf?shouldIndex=false> (Accessed: 6 June 2021).

Lopes, M. and Reis, J. (2021) 'The Influence of COVID-19 in Retail: A Systematic Literature Review', in *Advances in Intelligent Systems and Computing*. Springer Science and Business Media Deutschland GmbH, pp. 171–181. Available at: https://doi.org/10.1007/978-3-030-72651-5_17.

Lu, B. and Yi, X. (2023) 'Institutional trust and repurchase intention in the sharing economy: The moderating roles of information privacy concerns and security concerns', *Journal of Retailing and Consumer Services*, 73. Available at: <https://doi.org/10.1016/j.jretconser.2023.103327>.

Lwin, M., Stanaland, A. and Miyazaki, A. (2008) 'Protecting children's privacy online: How parental mediation strategies affect website safeguard effectiveness', *Journal of Retailing*, 84(2), pp. 205–217. Available at: <https://doi.org/10.1016/j.jretai.2008.04.004>.

Lwin, M.O., Wirtz, J. and Stanaland, A.J.S. (2016) 'The privacy dyad: Antecedents of promotion- and prevention-focused online privacy behaviors and the mediating role of trust and privacy concern', *Internet Research*, 26(4), pp. 919–941. Available at: <https://doi.org/10.1108/IntR-05-2014-0134>.

Mahliza, F. (2020) 'CONSUMER TRUST IN ONLINE PURCHASE DECISION', *EPRA International Journal of Multidisciplinary Research (IJMR)-Peer Reviewed Journal* [Preprint], (2). Available at: <https://doi.org/10.36713/epra2013>.

Malhotra, N.K., Kim, S.S. and Agarwal, J. (2004) 'Internet Users' Information Privacy Concerns (IUIPC): The Construct, the Scale, and a Causal Model and a Causal Model', *Information Systems Research*, 15(4), pp. 336–355. Available at: <https://doi.org/10.1287/isre.1040.0032>.

Mano, H. and Elliott, M.T. (1997) 'Smart shopping: the origins and consequences of price savings', *ACR North American Advances* [Preprint].

Martin, K. (2018) 'The penalty for privacy violations: How privacy violations impact trust online', *Journal of Business Research*, 82, pp. 103–116. Available at: <https://doi.org/10.1016/j.jbusres.2017.08.034>.

Martin, K. and Nissenbaum, H. (2020) 'WHAT IS IT ABOUT LOCATION?' Available at: <https://doi.org/10.15779/Z382F7JR6F>.

Martin, K.D. et al. (2020) 'Data Privacy in Retail', *Journal of Retailing*, 96(4), pp. 474–489. Available at: <https://doi.org/10.1016/j.jretai.2020.08.003>.

Martin, K.D., Borah, A. and Palmatier, R.W. (2017) 'Data Privacy: Effects on Customer and Firm Performance', <https://doi.org/10.1509/jm.15.0497>, 81(1), pp. 36–58. Available at: <https://doi.org/10.1509/JM.15.0497>.

Martin, K.D. and Murphy, P.E. (2017) 'The role of data privacy in marketing', *Journal of the Academy of Marketing Science*, 45(2), pp. 135–155. Available at: <https://doi.org/10.1007/s11747-016-0495-4>.

Martin, K.D. and Palmatier, R.W. (2020) 'Data Privacy in Retail: Navigating Tensions and Directing Future Research', *Journal of Retailing*. Elsevier Ltd, pp. 449–457. Available at: <https://doi.org/10.1016/j.jretai.2020.10.002>.

Martin, K.E. (2017) *Measuring Privacy: An Empirical Test Using Context to Expose Confounding Variables*. Available at: <https://www.researchgate.net/publication/315643368>.

Martins, J. et al. (2019) 'How smartphone advertising influences consumers' purchase intention', *Journal of Business Research*, 94, pp. 378–387. Available at: <https://doi.org/10.1016/j.jbusres.2017.12.047>.

Masur, P.K. and Trepte, S. (2021) 'Transformative or Not? How Privacy Violation Experiences Influence Online Privacy Concerns and Online Information Disclosure', *Human Communication Research*, 47(1), pp. 49–74. Available at: <https://doi.org/10.1093/hcr/hqaa012>.

Mayer, R.C., Davis, J.H. and Schoorman, F.D. (1995) 'An Integrative Model Of Organizational Trust', *Academy of Management Review*, 20(3), pp. 709–734. Available at: <https://doi.org/10.5465/amr.1995.9508080335>.

McKinsey & Company (2020) *Rebooting retail: How technology will shape the future of retail*. Available at: <https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/rebooting%20retail%20how%20technology%20will%20shape%20the%20future%20of%20retail/rebooting-retail-how-technology-will-shape-the-future-of-retail.pdf> (Accessed: 18 June 2021).

McKnight, D.H. and Chervany, N.L. (2001) 'What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology', *International Journal of Electronic Commerce*, 6(2), pp. 35–59. Available at: <https://doi.org/10.1080/10864415.2001.11044235>.

Meißner, M. *et al.* (2020) 'How virtual reality affects consumer choice', *Journal of Business Research*, 117, pp. 219–231. Available at: <https://doi.org/10.1016/j.jbusres.2020.06.004>.

Milne, G.R. and Boza, M.E. (1999) 'Trust and concern in consumers' perception of marketing information management practices', *Journal of Interactive Marketing*, 13(1), pp. 5–24. Available at: [https://doi.org/10.1002/\(SICI\)1520-6653\(199924\)13:1<5::AID-DIR2>3.0.CO;2-9](https://doi.org/10.1002/(SICI)1520-6653(199924)13:1<5::AID-DIR2>3.0.CO;2-9).

Milne, G.R. and Gordon, M.E. (1993) *Direct Mail Privacy-Efficiency Trade-offs within an Implied Social Contract Framework*, Source: *Journal of Public Policy & Marketing*.

Mofokeng, T.E. (2023) 'Antecedents of trust and customer loyalty in online shopping: The moderating effects of online shopping experience and e-shopping spending', *Heliyon*, 9(5). Available at: <https://doi.org/10.1016/j.heliyon.2023.e16182>.

Mostaghel, R. and Chirumalla, K. (2021) 'Role of customers in circular business models', *Journal of Business Research*, 127, pp. 35–44. Available at: <https://doi.org/10.1016/j.jbusres.2020.12.053>.

Muhammad, S.S., Dey, B.L. and Weerakkody, V. (2018) 'Analysis of Factors that Influence Customers' Willingness to Leave Big Data Digital Footprints on Social Media: A Systematic Review of Literature', *Information Systems Frontiers*, 20(3), pp. 559–576. Available at: <https://doi.org/10.1007/s10796-017-9802-y>.

Mulgund, P. *et al.* (2021) 'The implications of the California Consumer Privacy Act (CCPA) on healthcare organizations: Lessons learned from early compliance experiences',

Health Policy and Technology, 10(3). Available at: <https://doi.org/10.1016/j.hlpt.2021.100543>.

Müller-Seitz, G. *et al.* (2009) 'Customer acceptance of RFID technology: Evidence from the German electronic retail sector', *Journal of Retailing and Consumer Services*, 16(1), pp. 31–39. Available at: <https://doi.org/10.1016/j.jretconser.2008.08.002>.

Mwesiumo, D. *et al.* (2021) 'An exploratory and confirmatory composite analysis of a scale for measuring privacy concerns', *Journal of Business Research*, 136, pp. 63–75. Available at: <https://doi.org/10.1016/j.jbusres.2021.07.027>.

Nasiri, J. (2022) 'The Illinois Biometric Privacy Act Post-Rosenbach: Disposing of The Illinois Biometric Privacy Act Post-Rosenbach: Disposing of Actual Harm Inflicts Limitless Harm Onto Businesses Actual Harm Inflicts Limitless Harm Onto Businesses Recommended Citation Recommended Citation THE ILLINOIS BIOMETRIC PRIVACY ACT POST-ROSENBAACH: DISPOSING OF ACTUAL HARM INFLICTS LIMITLESS HARM ONTO BUSINESSES', *DePaul L. Review*, 71. Available at: <https://www.workplaceclassaction.com/2019/07/copy>.

Natarajan, R. and Angur, M.G. (2014) 'Innovative ability and entrepreneurial activity: Two factors to enhance "quality of life"', *Journal of Business and Industrial Marketing*, 29(6), pp. 469–475. Available at: <https://doi.org/10.1108/JBIM-09-2013-0205>.

Neff, G. *et al.* (2012) 'Affordances, Technical Agency, and the Politics of Technologies of Cultural Production', *Journal of Broadcasting and Electronic Media*, 56(2), pp. 299–313. Available at: <https://doi.org/10.1080/08838151.2012.678520>.

Nguyen, D.H., de Leeuw, S. and Dullaert, W.E.H. (2018) 'Consumer Behaviour and Order Fulfilment in Online Retailing: A Systematic Review', *International Journal of Management Reviews*. Blackwell Publishing Ltd, pp. 255–276. Available at: <https://doi.org/10.1111/ijmr.12129>.

Nguyen, S. and Llosa, S. (2023) 'When users decide to bypass collaborative consumption platforms: The interplay of economic benefit, perceived risk, and perceived enjoyment', *Tourism Management*, 96. Available at: <https://doi.org/10.1016/j.tourman.2022.104713>.

Nikhashemi, S.R. *et al.* (2021) 'Augmented reality in smart retailing: A (n) (A) Symmetric Approach to continuous intention to use retail brands' mobile AR apps', *Journal of Retailing and Consumer Services*, 60. Available at: <https://doi.org/10.1016/j.jretconser.2021.102464>.

Norberg, P.A., Horne, D.R. and Horne, D.A. (2007) 'The privacy paradox: Personal information disclosure intentions versus behaviors', *Journal of Consumer Affairs*, 41(1), pp. 100–126. Available at: <https://doi.org/10.1111/j.1745-6606.2006.00070.x>.

Norman, D. (2013) 'The DESIGN of EVERYDAY THINGS'. Available at: www.basickbooks.com (Accessed: 2 January 2022).

Norman, D.A. (1999) *A FFORDANCE, C ONVENTIONS, AND D ESIGN*. Available at: <http://www.jnd.org>.

Oliver, R.L. (2013) *Satisfaction: A Behavioral Perspective on the Consumer*. M.E. Sharpe. Available at: <https://books.google.co.uk/books?id=OKIXnQAACAAJ>.

Oliver, R.L. (2014) *Satisfaction: A Behavioral Perspective on the Consumer: A Behavioral Perspective on the Consumer*. Taylor & Francis. Available at: <https://books.google.co.uk/books?id=TzrfBQAAQBAJ>.

Ostrom, A.L., Fotheringham, D. and Bitner, M.J. (2019) 'Customer Acceptance of AI in Service Encounters: Understanding Antecedents and Consequences', in P.P. Maglio et al. (eds) *Handbook of Service Science, Volume II*. Cham: Springer International Publishing, pp. 77–103. Available at: https://doi.org/10.1007/978-3-319-98512-1_5.

Ovani, D.J. and Windasari, N.A. (2022) 'The Impact of Electronic Shelf Label on Customer Well-Being in the Omnichannel Smart Retail', in R. Qiu et al. (eds) *City, Society, and Digital Transformation*. Cham: Springer International Publishing, pp. 31–46.

Pagani, M., Racat, M. and Hofacker, C.F. (2019) 'Adding Voice to the Omnichannel and How that Affects Brand Trust', *Journal of Interactive Marketing*, 48, pp. 89–105. Available at: <https://doi.org/10.1016/j.intmar.2019.05.002>.

Palmatier, R.W. and Martin, K.D. (2019) *The intelligent marketer's guide to data privacy: The impact of big data on customer trust*. Springer.

Pantano, E. and Priporas, C.V. (2016) 'The effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective', *Computers in Human Behavior*, 61, pp. 548–555. Available at: <https://doi.org/10.1016/j.chb.2016.03.071>.

Patel, A.K. et al. (2023) 'Assessing customers' attitude towards online apparel shopping: A three-way interaction model', *Journal of Business Research*, 164. Available at: <https://doi.org/10.1016/j.jbusres.2023.113917>.

Pavlou, P.A. (2003) 'Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model', *International Journal of Electronic Commerce*, 7(3), pp. 101–134. Available at: <https://doi.org/10.1080/10864415.2003.11044275>.

Pavlou, P.A. and Gefen, D. (2004) 'Building Effective Online Marketplaces with Institution-Based Trust', *Information Systems Research*, 15(1), pp. 37–59. Available at: <https://doi.org/10.1287/isre>.

Pazzanese, C. (2020) *Ethical concerns mount as AI takes bigger decision-making role* – *Harvard Gazette*, *The Harvard Gazette*. Available at: <https://news.harvard.edu/gazette/story/2020/10/ethical-concerns-mount-as-ai-takes-bigger-decision-making-role/> (Accessed: 31 May 2021).

Pennanen, K. (2006) 'How consumers build trust in e-commerce: towards a trust formation model', *ACR Latin American Advances* [Preprint].

Peter, J.P. and Ryan, M.J. (1976) 'An investigation of perceived risk at the brand level', *Journal of marketing research*, 13(2), pp. 184–188.

Phelps, J., Nowak, G. and Ferrell, E. (2000) 'Privacy concerns and consumer willingness to provide personal information', *Journal of Public Policy and Marketing*, 19(1), pp. 27–41. Available at: <https://doi.org/10.1509/jppm.19.1.27.16941>.

Pillai, R., Sivathanu, B. and Dwivedi, Y.K. (2020) 'Shopping intention at AI-powered automated retail stores (AIPARS)', *Journal of Retailing and Consumer Services*, 57. Available at: <https://doi.org/10.1016/j.jretconser.2020.102207>.

Pizzi, G. and Scarpi, D. (2020) 'Privacy threats with retail technologies: A consumer perspective', *Journal of Retailing and Consumer Services*, 56, p. 102160. Available at: <https://doi.org/10.1016/j.jretconser.2020.102160>.

Poncin, I. *et al.* (2017) 'Smart technologies and shopping experience: Are gamification interfaces effective? The case of the Smartstore', *Technological Forecasting and Social Change*, 124, pp. 320–331. Available at: <https://doi.org/10.1016/j.techfore.2017.01.025>.

Priporas, C.V., Stylos, N. and Fotiadis, A.K. (2017) 'Generation Z consumers' expectations of interactions in smart retailing: A future agenda', *Computers in Human Behavior*, 77, pp. 374–381. Available at: <https://doi.org/10.1016/j.chb.2017.01.058>.

Qalati, S.A. *et al.* (2021) 'Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping', *Cogent Business and Management*, 8(1). Available at: <https://doi.org/10.1080/23311975.2020.1869363>.

Riegger, A.S. *et al.* (2022) 'Technology-enabled personalization: Impact of smart technology choice on consumer shopping behavior', *Technological Forecasting and Social Change*, 181. Available at: <https://doi.org/10.1016/j.techfore.2022.121752>.

Robertson, N. *et al.* (2016) 'Examining customer evaluations across different self-service technologies', *Journal of Services Marketing*, 30(1), pp. 88–102. Available at: <https://doi.org/10.1108/JSM-07-2014-0263>.

Rodríguez, P.G. *et al.* (2020) 'A PLS-SEM approach to understanding E-SQ, E-Satisfaction and E-Loyalty for fashion E-Retailers in Spain', *Journal of Retailing and Consumer Services*, 57. Available at: <https://doi.org/10.1016/j.jretconser.2020.102201>.

Rodríguez-Priego, N. *et al.* (2023) 'Perceived customer care and privacy protection behavior: The mediating role of trust in self-disclosure', *Journal of Retailing and Consumer Services*, 72. Available at: <https://doi.org/10.1016/j.jretconser.2023.103284>.

Roe, M. *et al.* (2022) 'Drivers and challenges of internet of things diffusion in smart stores: A field exploration', *Technological Forecasting and Social Change*, 178. Available at: <https://doi.org/10.1016/j.techfore.2022.121593>.

Rose, S. *et al.* (2012) 'Online Customer Experience in e-Retailing: An empirical model of Antecedents and Outcomes', *Journal of Retailing*, 88(2), pp. 308–322. Available at: <https://doi.org/10.1016/j.jretai.2012.03.001>.

Roy, S.K. *et al.* (2017) 'Constituents and consequences of smart customer experience in retailing', *Technological Forecasting and Social Change*, 124, pp. 257–270. Available at: <https://doi.org/10.1016/J.TECHFORE.2016.09.022>.

Roy, S.K., Balaji, M.S. and Nguyen, B. (2020) 'Consumer-computer interaction and in-store smart technology (IST) in the retail industry: the role of motivation, opportunity, and ability', *Journal of Marketing Management*, 36(3–4), pp. 299–333. Available at: <https://doi.org/10.1080/0267257X.2020.1736130>.

Scarpi, D., Pizzi, G. and Visentin, M. (2014) 'Shopping for fun or shopping to buy: Is it different online and offline?', *Journal of Retailing and Consumer Services*, 21(3), pp. 258–267. Available at: <https://doi.org/10.1016/j.jretconser.2014.02.007>.

Schlosser, A.E., White, T.B. and Lloyd, S.M. (2006) 'Converting Web Site Visitors into Buyers: How Web Site Investment Increases Consumer Trusting Beliefs and Online Purchase Intentions "I", *Journal of Marketing*, 70, pp. 133–148.

Septianto, F., Kemper, J.A. and Choi, J. (Jane) (2020) 'The power of beauty? The interactive effects of awe and online reviews on purchase intentions', *Journal of Retailing and Consumer Services*, 54. Available at: <https://doi.org/10.1016/j.jretconser.2020.102066>.

Sevignani, S. (2016) *Privacy and Capitalism in the Age of Social Media*. Routledge (Routledge research in information technology and society). Available at: <https://books.google.co.uk/books?id=Mr1jAQAACAAJ>.

Shankar, V. (2018) 'How Artificial Intelligence (AI) is Reshaping Retailing', *Journal of Retailing*, 94(4), pp. vi–xi. Available at: [https://doi.org/10.1016/s0022-4359\(18\)30076-9](https://doi.org/10.1016/s0022-4359(18)30076-9).

Shankar, V. *et al.* (2021) 'How Technology is Changing Retail', *Journal of Retailing*, 97(1), pp. 13–27. Available at: <https://doi.org/10.1016/j.jretai.2020.10.006>.

Shankar, V., Smith, A.K. and Rangaswamy, A. (2003) 'Customer satisfaction and loyalty in online and offline environments', *International Journal of Research in Marketing*, 20(2), pp. 153–175. Available at: [https://doi.org/10.1016/S0167-8116\(03\)00016-8](https://doi.org/10.1016/S0167-8116(03)00016-8).

Sharma, P. *et al.* (2023) 'Emerging digital technologies and consumer decision-making in retail sector: Towards an integrative conceptual framework', *Computers in Human Behavior*, 148. Available at: <https://doi.org/10.1016/j.chb.2023.107913>.

Shiau, W.L. and Luo, M.M. (2012) 'Factors affecting online group buying intention and satisfaction: A social exchange theory perspective', *Computers in Human Behavior*, 28(6), pp. 2431–2444. Available at: <https://doi.org/10.1016/j.chb.2012.07.030>.

Song, C.S. and Kim, Y.K. (2022) 'The role of the human-robot interaction in consumers' acceptance of humanoid retail service robots', *Journal of Business Research*, 146, pp. 489–503. Available at: <https://doi.org/10.1016/j.jbusres.2022.03.087>.

Stone, R.N. and Grønhaug, K. (1993) 'Perceived Risk: Further Considerations for the Marketing Discipline', *European Journal of Marketing*, 27(3), pp. 39–50. Available at: <https://doi.org/10.1108/03090569310026637>.

Su, L. *et al.* (2022) 'Effects of tourism experiences on tourists' subjective well-being through recollection and storytelling', *Journal of Vacation Marketing* [Preprint]. Available at: <https://doi.org/10.1177/13567667221101414>.

Suh, T. and Moradi, M. (2023) 'Transferring in-store experience to online: An omnichannel strategy for DIY customers' enhanced brand resonance and co-creative actions', *Journal of Business Research*, 168. Available at: <https://doi.org/10.1016/j.jbusres.2023.114237>.

Sun, Y. *et al.* (2019) 'How live streaming influences purchase intentions in social commerce: An IT affordance perspective', *Electronic Commerce Research and Applications*, 37. Available at: <https://doi.org/10.1016/j.elerap.2019.100886>.

Swani, K., Milne, G.R. and Slepchuk, A.N. (2021) 'Revisiting Trust and Privacy Concern in Consumers' Perceptions of Marketing Information Management Practices: Replication and Extension', *Journal of Interactive Marketing*, 56, pp. 137–158. Available at: <https://doi.org/10.1016/j.intmar.2021.03.001>.

Taylor, J.W. (1974) *The Role of Risk in Consumer Behavior*, Source: *Journal of Marketing*.

Thatcher, B.J. *et al.* (2013) 'A classification and investigation of trustees in B-to-C e-commerce: General vs. specific trust', *Communications of the Association for Information Systems*, 32(1), pp. 107–134. Available at: <https://doi.org/10.17705/1cais.03204>.

Trepte, S. and Reinecke, L. (2011) *Privacy online: Perspectives on privacy and self-disclosure in the social web*. Springer.

Trepte, S., Scharkow, M. and Dienlin, T. (2020) 'The privacy calculus contextualized: The influence of affordances', *Computers in Human Behavior*, 104. Available at: <https://doi.org/10.1016/j.chb.2019.08.022>.

Trivedi, S.K. and Yadav, M. (2018) 'Predicting online repurchase intentions with e-satisfaction as mediator: a study on Gen Y', *VINE Journal of Information and Knowledge Management Systems*, 48(3), pp. 427–447. Available at: <https://doi.org/10.1108/VJIKMS-10-2017-0066>.

Tseng, S.M. (2015) 'Exploring the intention to continue using web-based self-service', *Journal of Retailing and Consumer Services*, 24(C), pp. 85–93. Available at: <https://doi.org/10.1016/j.jretconser.2015.02.001>.

Del Vecchio, P., Secundo, G. and Garzoni, A. (2023) 'Phygital technologies and environments for breakthrough innovation in customers' and citizens' journey. A critical literature review and future agenda', *Technological Forecasting and Social Change*, 189. Available at: <https://doi.org/10.1016/j.techfore.2023.122342>.

Vimalkumar, M. *et al.* (2021) "'Okay google, what about my privacy?": User's privacy perceptions and acceptance of voice based digital assistants', *Computers in Human Behavior*, 120. Available at: <https://doi.org/10.1016/j.chb.2021.106763>.

Vrontis, D., Thrassou, A. and Amirkhanpour, M. (2017) 'B2C smart retailing: A consumer-focused value-based analysis of interactions and synergies', *Technological Forecasting and Social Change*, 124, pp. 271–282. Available at: <https://doi.org/10.1016/j.techfore.2016.10.064>.

Wedel, M. and Kannan, P.K. (2016) 'Marketing analytics for data-rich environments', *Journal of Marketing*, 80(6), pp. 97–121. Available at: <https://doi.org/10.1509/jm.15.0413>.

Wieringa, J. *et al.* (2021) 'Data analytics in a privacy-concerned world', *Journal of Business Research*, 122, pp. 915–925. Available at: <https://doi.org/10.1016/J.JBUSRES.2019.05.005>.

Wu, W. *et al.* (2023) 'Elucidating trust-building sources in social shopping: A consumer cognitive and emotional trust perspective', *Journal of Retailing and Consumer Services*, 71. Available at: <https://doi.org/10.1016/j.jretconser.2022.103217>.

Xu, H. *et al.* (2008) *Association for Information Systems AIS Electronic Library (AISeL) Examining the Formation of Individual's Privacy Concerns: Toward an Integrative View Recommended Citation*. Available at: <http://aisel.aisnet.org/icis2008/6>.

Xu, X. (2020) 'Examining consumer emotion and behavior in online reviews of hotels when expecting managerial response', *International Journal of Hospitality Management*, 89. Available at: <https://doi.org/10.1016/j.ijhm.2020.102559>.

Yang, Z. *et al.* (2019) 'Does Ethics Perception Foster Consumer Repurchase Intention? Role of Trust, Perceived Uncertainty, and Shopping Habit', *SAGE Open*, 9(2). Available at: <https://doi.org/10.1177/2158244019848844>.

Yi, Z. *et al.* (2018) 'The Impact of Consumer Fairness Seeking on Distribution Channel Selection: Direct Selling vs. Agent Selling', *Production and Operations Management*, 27(6), pp. 1148–1167. Available at: <https://doi.org/10.1111/poms.12861>.

Ying, S. *et al.* (2023) 'Privacy paradox for location tracking in mobile social networking apps: The perspectives of behavioral reasoning and regulatory focus', *Technological Forecasting and Social Change*, 190. Available at: <https://doi.org/10.1016/j.techfore.2023.122412>.

Yu, N., Wang, S. and Liu, Z. (2022) ‘Managing brand competition with consumer fairness concern via manufacturer incentive’, *European Journal of Operational Research*, 300(2), pp. 661–675. Available at: <https://doi.org/10.1016/j.ejor.2021.08.026>.

Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996) ‘The behavioral consequences of service quality’, *Journal of marketing*, 60(2), pp. 31–46.

Zhang, M. *et al.* (2018) ‘The impact of channel integration on consumer responses in omni-channel retailing: The mediating effect of consumer empowerment’, *Electronic Commerce Research and Applications*, 28, pp. 181–193. Available at: <https://doi.org/10.1016/j.elerap.2018.02.002>.

Zhang, N. (Andy) *et al.* (2022) ‘Peer Privacy Concerns: Conceptualization and Measurement’, *MIS Quarterly*, 46(1), pp. 491–530. Available at: <https://doi.org/10.25300/MISQ/2022/14861>.

Zhao, Y., Guan, Z. min and Zhang, J. (2023) ‘Return freight strategies and selling formats in e-commerce supply chain: The perspective of consumer fairness concerns and online shopping returns’, *Journal of Retailing and Consumer Services*, 75. Available at: <https://doi.org/10.1016/j.jretconser.2023.103493>.

Zou, Y. *et al.* (2023) ‘Wanted! Investigating how elements from the personal usage context affect Gen Z consumers’ value-in-use experience and engagement with mobile service’, *Journal of Business Research*, 160. Available at: <https://doi.org/10.1016/j.jbusres.2023.113824>.