



e-ISSN 3083-6018

SOCIAL DEVELOPMENT: Economic and Legal Issues

<https://www.eu-scientists.com/index.php/sdel>



Trust Systems in Online Sales in the Absence of Physical Interaction

Dmytro Lavryniuk  ¹*

¹ DIMKALAV LLC (DBA ECOM-GUIDE) (United States). Founder, Owner & E-Commerce Operations Manager.

* **Corresponding Author**, e-mail: mrdimkaa@ukr.net

ARTICLE INFO

Research Article

DOI:

[10.70651/3083-6018/2026.6.21](https://doi.org/10.70651/3083-6018/2026.6.21)

Received:

21 April 2026

Accepted:

22 May 2026

Published online:

23 May 2026

Copyright © 2026 by authors



This is an open access journal and all published articles are licensed under a Creative Commons Attribution—NonCommercial 4.0 International (CC BY-NC 4.0)



ABSTRACT

This article examines trust-building systems in online sales where direct physical interaction between buyer and seller is absent. The study argues that digital trust is not formed as a single psychological reaction, but as a systemic outcome of interconnected technological, informational, social, and institutional mechanisms. Particular attention is paid to transparency, accuracy of product information, quality of digital content, UX/UI design, customer reviews, electronic word of mouth, platform rules, and post-purchase service. The paper analyzes cognitive, emotional, and institutional dimensions of trust and explains how they interact with perceived risk, information asymmetry, and uncertainty in platform-mediated commerce. A separate focus is placed on the role of artificial intelligence in online sales. AI-based recommendations, automated product descriptions, chatbots, and personalization tools can increase convenience, relevance, and efficiency; however, they may also create risks of opacity, manipulation, biased decision-making, and loss of authenticity. The study therefore interprets AI as both a mechanism of trust formation and a potential factor of trust erosion. Based on recent research in e-commerce, platform governance, social proof, user experience, and AI-mediated communication, the article proposes an integrated framework of digital trust. This framework presents trust as a dynamic and cumulative process that develops through repeated interactions, consistent signals, reliable service, and effective governance rather than as a fixed precondition for a transaction. The findings highlight the importance of coherent trust-building systems for online sellers and marketplaces seeking to strengthen consumer confidence in the absence of physical contact.

KEYWORDS

digital trust, e-commerce, artificial intelligence, platform governance, social proof, user experience (UX), online consumer behaviour, trust asymmetry.



e-ISSN 3083-6018

СОЦІАЛЬНИЙ РОЗВИТОК: економіко-правові проблеми

<https://www.eu-scientists.com/index.php/sdel>



Системи довіри в онлайн-продажах за відсутності фізичної взаємодії

Дмитро Ю. Лавринюк  ¹*

¹ DIMKALAV LLC (DBA ECOM-GUIDE) (США). Засновник, власник та менеджер з операцій електронної комерції.

* Автор-кореспондент, e-mail: mrdimkaa@ukr.net

СТАТТЯ

АНОТАЦІЯ

Дослідницька

DOI:

[10.70651/3083-6018/2026.6.21](https://doi.org/10.70651/3083-6018/2026.6.21)

Отримана:

21.04.2026 р.

Прийнята:

22.05.2026 р.

Опублікована:

23.05.2026 р.

Авторське право

© 2026 авторів



Цей твір

ліцензовано на умовах Ліцензії Creative Commons «Із Зазначенням Авторства – Некомерційна 4.0 Міжнародна» (CC BY-NC 4.0).



У цій статті розглядаються системи побудови довіри в онлайн-продажах, де відсутня пряма фізична взаємодія між покупцем і продавцем. У дослідженні стверджується, що цифрова довіра формується не як окрема психологічна реакція, а як системний результат взаємопов'язаних технологічних, інформаційних, соціальних та інституційних механізмів. Особлива увага приділяється прозорості, точності інформації про продукт, якості цифрового контенту, UX/UI дизайну, відгукам клієнтів, електронному «сарафанному радіо», правилам платформи та післяпродажному обслуговуванню. У статті аналізуються когнітивні, емоційні та інституційні виміри довіри та пояснюється, як вони взаємодіють зі сприйнятим ризиком, інформаційною асиметрією та невизначеністю в платформно-опосередкованій комерції. Окрема увага приділяється ролі штучного інтелекту в онлайн-продажах. Рекомендації на основі штучного інтелекту, автоматизовані описи продуктів, чат-боти та інструменти персоналізації можуть підвищити зручність, релевантність та ефективність; однак вони також можуть створювати ризики непрозорості, маніпуляцій, упередженого прийняття рішень та втрати автентичності. Тому дослідження інтерпретує ШІ як механізм формування довіри, так і потенційний фактор її розмивання. Ґрунтуючись на нещодавніх дослідженнях у сфері електронної комерції, управління платформами, соціального доказування, користувацького досвіду та комунікації за допомогою штучного інтелекту, у статті пропонується інтегрована структура цифрової довіри. Ця структура представляє довіру як динамічний та кумулятивний процес, що розвивається через повторювані взаємодії, послідовні сигнали, надійне обслуговування та ефективне управління, а не як фіксовану передумову для транзакції. Результати дослідження підкреслюють важливість узгоджених систем побудови довіри для онлайн-продавців та торгових майданчиків, які прагнуть зміцнити довіру споживачів за відсутності фізичного контакту.

КЛЮЧОВІ СЛОВА

цифрова довіра, електронна комерція, штучний інтелект, управління платформами, соціальний доказ, користувацький досвід (UX), поведінка споживачів онлайн, асиметрія довіри.

1. Introduction

1.1. Trust as a Core Element of Online Commerce

Several studies have found that the use of artificial intelligence will make it difficult for consumers to know whether the recommendations made to them are based on their interests or whether they are being manipulated [2; 8]. It is now clear that the nature of consumer-trust relationships has evolved dramatically over recent decades. It was previously assumed that trust was primarily the result of personal interactions with merchants. However, due to the increasing use of technology in business-to-consumer transactions, trust is now considered to be an emergent property that arises from the interaction of many different factors, such as the design of websites, the accuracy of product information, reputation mechanisms, and after-sales support services [3; 7].

In addition to the above, there is evidence that trust is a critical factor that drives both short- and long-term buying behavior in e-commerce [11]. Consumer perceptions of trust are influenced by a wide range of variables, including how well products are described, how easy it is to find the products you want, the speed and reliability of shipping, the ease of returning products if you do not like them, and the availability of mechanisms for resolving complaints about products [5; 9].

1.2. Absence of Physical Interaction as a Structural Limitation

The absence of tangible engagement in electronic commerce is a defining facet of the process rather than a passing annoyance. Customers cannot touch, see, or assess a product or seller, and they cannot even establish a direct seller-buyer link that allows for direct return transactions. The absence of direct links increases the buyer and seller apprehension related to payment, product, delivery, and data assurance [3; 6]. Thus, electronic commerce has a trust vacuum that commerce must fill. Buyers cannot touch, see, or assess a product before buying, and therefore must rely on alternative measures that are also vulnerable; i.e., photographs, descriptions, evaluations, and suggested content [12]. As is the case with Kamran et al. (2024), trust relates to ability and credibility; once trust is broken, everything else falls apart, including the willingness to buy [7]. The ability of electronic commerce to make personal recommendations adds another level of complexity. Buyers are less likely to experience cognitive overload when electronic commerce generates content or makes recommendations. However, concerns are less likely to be assured, and trust and confidence are more likely to be compromised [1; 13]. The absence of tangible engagement in commerce without contact also interacts with algorithms.

2. Literature Review

2.1. Nature of Trust in Digital Commerce

2.1.1. Cognitive vs. Emotional Trust

Trust in digital commerce is multidimensional in nature as it has both cognitive and emotional components involved. On one hand, cognitive trust relies on rational, process-oriented information evaluation about the competence and trustworthiness of the seller or platform. This form of trust develops as consumers review product descriptions, consider price points, identify website security, and review the security of institutional policies [3; 7]. Critical assessments or judgments are made based on the provision of evidence and consumers' previous experiences. Because of the absence of opportunities for direct verification, in online settings cognitive trust is particularly fundamental. On the other hand, emotional trust is based on feelings of comfort, familiarity, and kindness. It demonstrates the psychological security perceived by consumers while interacting with a digital brand or platform [12]. Although emotional trust is often slower to develop in online contexts, it is the most significant variable for repeat purchases and for long-term loyalty. Consistent communication, attentive staff, and post-purchase support are examples of elements that build emotional trust. Emotional trust has a particularly key role in the seller-buyer relationship for service failures that are minor or for cases of lacking information [3].

2.1.2. Risk Perception in Online Transactions

In digital commerce, risk perception is vital, but trust is even more so. When buying online, there is always risk in the quality of the product, the delivery of the product, the security of the payment, and the safety of the data. In cross-border e-commerce and platform-mediated marketplace transactions, the risk is even higher because the sellers might be anonymous and might be from another country [5; 19]. The examined data suggests that risk and purchase intentions have an inverse correlation, and trust signals increase purchase intentions [6].

Trust signals include company policies, payment security, and positive user feedback. Risks from the consumer perspective describe the absence of reliance on risk assessment based on objective probability in contexts of significant uncertainty. When users are saturated and fatigued with information, the most critical factors are heuristics and social indicators [2; 7].

The increased use of AI in e-commerce is still seen as risky. AI is used in customer service, product recommendations, and automated product description generation. AI is efficient, but there are risks in terms of manipulation, shopping bias, and product inauthenticity [1; 15]. Undocumented algorithms and automated decision-making processes erode consumer trust because they don't understand or feel they can question the processes in place [13]. To be trusted, an automated system must remove both the old risks and the new risks created by algorithms.

2.1.3. Trust Asymmetry between Buyer and Seller

The absence of trust in online commerce is particularly noteworthy. The seller has the most knowledge of the product and the supply chain, while the buyer has the most risk. This absence of trust is increased by the seller platform, where there are multiple actors in the supply chain, including the seller, the platform, the logistics provider, the payment processor, and multiple roles in the service chain [2; 5].

Consumers distrust institutions, individual sellers, and platforms in two ways. In the first case, sellers are trusted less than platforms and brands. When individual sellers are in question, paradoxically, trust is shifted to the institution, brand, or platform. Trust-building mechanisms, such as buyer protection or escrow trust systems, can mitigate risk and enable trust at the platform level [10]. The second way is indicative of the absence of negative trust. Signals of trust may, paradoxically, in the absence of trust, mislead and lose trust at the brand or individual level, and tend to be more powerful than the absence of trust [12].

The negative trust signals of online selling can be described (and the more those signals are described, the more reliance and trust systems will be collateralized, the more trust will be strengthened). As demonstrated in Figure 1, online systems that are reliable and trustworthy are often vulnerable to trust asymmetry and perceived collateral risk.

2.2. Transparency as a Foundation of Trust

2.2.1. Clear Pricing, Policies, and Communication

Given how online transactions lack any form of physical interaction, having an online business that allows some form of flexibility is crucial, and providing potential customers with as much clarity as possible is the best way to minimize potential losses in sales. This is achieved by communicating any possible issues that consumers may face and by providing customer support. From a psychological perspective, trust is gained and retained because of the correlating facts and lack of discrepancies in the online platform and is a reflection of the vendor's reliability [3; 7].

The importance of outcome predictability in online transactions is because customers cannot see the changes made to the vendor's website, explanation shifts, and internal pricing calculators. Trust is severely damaged and is likely to be withheld as a form of protest [9; 19].

An understanding of your customer, trust, and pricing are the three elements that an online vendor must maintain. Consumers, especially worried online buyers, want to know and understand the vendor's policies on returns, exchanges, and overall privacy practices. The element of describing the policies lends to the overall trust of the vendor, and breaks the psychological barrier to switching to the purchasing stage. As displayed by Jabeen et al. (2024), trust and purchase intentions of consumers are greater towards high-risk/uncertainty products when the vendor's policies are easy to understand, visible, and clear [6].

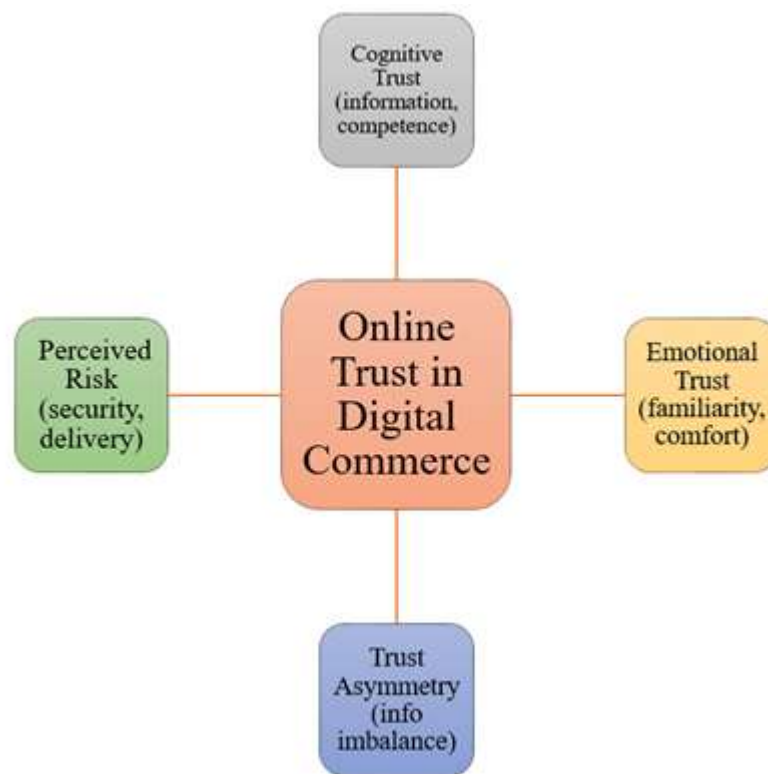


Figure 1. Multidimensional Structure of Trust in Digital Commerce

Source: Built by the author.

2.2.2. Product Information Accuracy

Without physical contact, the best and sometimes only way to evaluate products in online sales transactions is through the descriptions, specifications, photos, videos, and so on that accompany the product listings. Without physical contact, these descriptions (the perceived representation of the product, as it is sometimes called) also serve consumers as the reliable representation of the product. When customers perceive a service as reliable, it generates cognitive trust. However, trust is quickly and to a large extent lost when the product's representation fails [12].

Descriptions written by AI create both opportunities and threats [20]. The large language models (LLMs) that AI uses increase the consistency, readability, and search optimization of the descriptions, which positively impacts accessibility and search visibility [8, 18]. The absence of a competent, capable, and reliable person in the process render the descriptions as incompetent and unreliable, and even lead to erroneous, excessive, and homogenized descriptions [13].

For the consumers, the most trust-generating aspect is that the descriptions accurately reflect how the product performs [20]. AI is able to create optimized descriptions at the same time-increasing the misunderstanding of the product [4]. Instead of increasing the accuracy and reliability of the representation, sellers and platforms are increasing automation. This must change.

2.2.3. Role of Platform Governance

The creation of trust by buyers in online sales in the past few years has been influenced more by the governance of the platform, regardless of the seller. As a middle agent, online marketplaces set the governance of the seller by controlling how information should be structured and how conflicts should be resolved. While the platform rules and their monitoring and enforcement system build trust because of the legitimate system that can deter bad behavior [10].

Out of the several types of governance in online marketplaces, the governance of the algorithms that control the online marketplace is the most significant when it comes to fostering trust among buyers. The trust in buyers is built by how online marketplaces engage with the sellers through sponsored listings, search rankings, and recommendations. Given that more marketplace performance and efficiency systems are in place, the trust system is based can be a source of anxiety [9]. Therefore, when it comes to improving transparency, adequate governance algorithms should be kept to not fully

reveal the control to conceal overtly the reason why the content is ranked and promoted in a certain order.

Moderate-level AI systems, including those detecting bad faith behavior, can build trust systems positively when used consistently. However, Ren et al. (2024) clearly state that underdeveloped algorithms may cause a trust crisis at the core of the e-commerce marketplace [13]. The core of the e-commerce marketplace should rely on trust based on algorithms, but there should be enough transparency to go beyond the surface to account for and allow for being heard through the core. Table 1 illustrates this constellation of trust and transparency.

Table 1. Transparency Mechanisms and Their Trust Effects

Transparency Mechanism	Primary Trust Dimension	Trust Risk if Absent
Clear pricing	Cognitive trust	Perceived opportunism
Accurate product descriptions	Cognitive trust	Product dissatisfaction
Accessible platform policies	Institutional trust	Risk avoidance behavior
Governance disclosure	Institutional trust	Algorithmic skepticism

Source: Formed by the author.

2.3. Social Proof and Reputation Mechanisms

2.3.1. Reviews, Ratings, and User-Generated Content

Shoppers who do not engage in person are replacing first-hand experiences with social proof. Reviews, scores, and numerous instances of user-generated content win the trust of purchasers to evaluate the merchandise and vendors based on other shoppers' experiences. Trust and intended purchase positivity in e-WOM (electronic word of mouth) is established to be beneficial in online settings [3; 12]. Social proof is effective due to two main reasons. Buyers have social proof and the purchase is socially acceptable and justified [4; 7]. Shoppers allocate social proof and have trust from the reviews to feedback with strong details. The trust volatility prompted by consumer-generated content is a trust volatility that needs to be monitored and explored [12].

2.3.2. Influencers and Expert Validation

Aside from peer-produced content, integrating influencer marketing and expert proofing is important as trust multipliers in online marketing. Marketing influencers smooth the flow of information. They take facts about products and transform them into narratives. In this way, they make online marketing more interpersonal and cultivate trust on an emotional level [6; 17].

When consumers think of marketing influencers as genuinely knowledgeable, they can close the gaps in contactless selling. Expert proofing (certificates, reviews, badges from a selling platform, etc.) is primarily aimed at strengthening rational trust. Such proofing signals that a seller or a product has met the criteria of some quality standards, thus decreasing the risks and efforts consumers have to make in order to make a purchasing decision. According to Kamran et al. (2024), expert proofing is institutional or structural (e.g., peer reviews), and it is especially valuable for customers in high-stakes buying situations, where customers need reassurance more than peer reviews [7].

Both marketing influencers and expert validation require a balanced approach because these two techniques can be over-commercialized, and if so, they will be less convincing. Skepticism will settle in if the two techniques send consumers inconsistent messages. Credibility may be lost if the consumers think the marketing is over-commercialized. In looking at these mechanisms, the focus is on the factors that are not visible more than the mechanisms that are independent and in line with the consumers.

2.3.3. Fake Reviews and Credibility Risks

The increase in bad and fake reviews is a major obstacle to social proof systems. Fake reviews, fake ratings, colluding sellers and buyers, and paying for reviews skew social signals and signals of social systems. As these reviews become harder to recognize, and with increasing sophistication of AI-generated content, the social proof these review systems rely on begins to fail [14].

There is a serious crisis and the systems' social proof mechanisms are meant to employ themselves to fail. Manipulated reviews lose trust from far more than just the products directly involved [12]. It is the whole system, wholesalers and buyers, and the platforms at stake. In the end, fake reviews are a classic example of a collective-action problem where the participants responsible for the short-

term wins end up succumbing to a system that behaves fairly; with enough time, the whole ecosystem suffers.

System rules, despite their simplicity, do offer a partial answer to the review problem [14]. They have a social proof that customers appreciate. The balance of social proof is fragile; only trust from the system admins can earn back the trust of the surrounding systems (See Figure 2). The lack of trust stems from a lack of monitoring. The people in charge must show systems are reliable enough to be patrolled. Only then will the social proof mechanisms return to function.

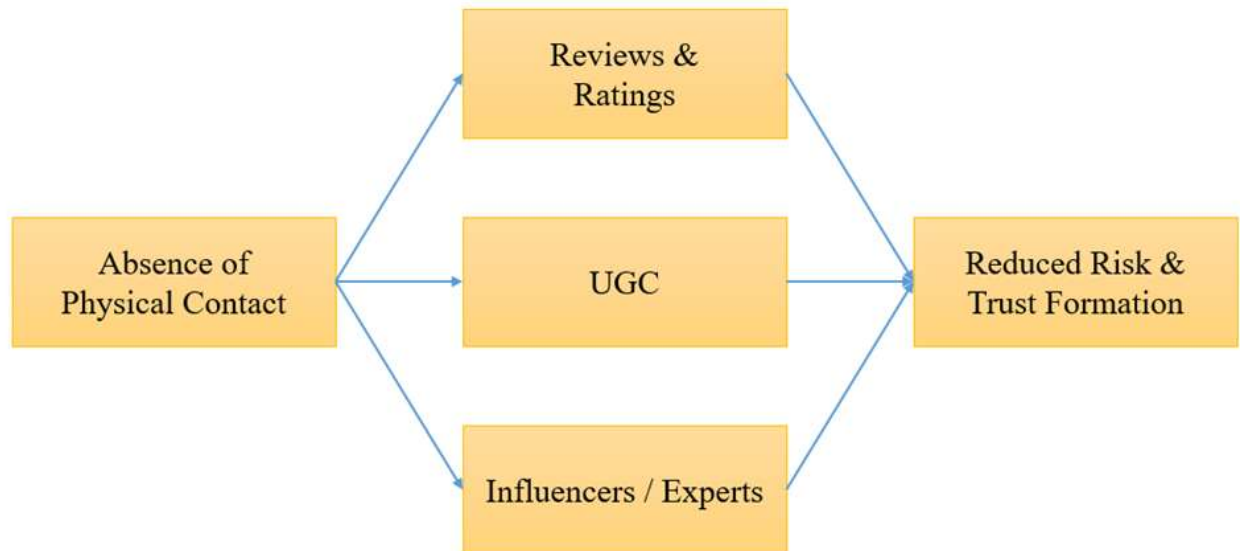


Figure 2. Social Proof as a Trust Substitute in Online Sales

Source: Built by the author.

2.4. Digital Content Quality and User Experience

2.4.1. Visual Authenticity and Product Representation

Digital content has replaced physical inspection as the main way to evaluate products in online sales settings. Therefore, trust-building goes beyond a marketing function for images, videos, and other interactive media. Visual, high-quality, and realistic product displays promote cognitive trust by alleviating product attribute uncertainty and inconsistencies between visual portrayals and actual product performance, and are a common source of trust erosion [12; 16].

With respect to the product attribute, tactile or visual quality, trust erosion correlates to a lack of display realism. Research has shown that consumer expectations of post-purchase disappointment are negatively correlated, and purchase completion is positively correlated to the realism of the display. From an analytical perspective, authenticity entails not a lack of content, but a display that aligns with the product's actual characteristics [7; 17].

The cognitive paradox of AI-generated images and editing in marketing is that while increasing clarity and consistency fosters better perception of the showcased product, the risk of misrepresentation is also high. The depiction of product characteristics cannot be enhanced beyond the actual characteristics. Grewal et. Al, (2025) recommend the incorporation of ethical AI in marketing to avoid the erosion of trust in consumers [1].

2.4.2. UX/UI Design as a Sign of Trust

The majority of individuals frequently fail to recognize how crucial user interface (UI) and user experience (UX) design are to building a company's credibility. Initial user views of trust are influenced by elements such as interface design, navigation clarity, loading speed, and error recovery (or lack thereof) [16]. Regardless of how competitive a company's product and pricing options are, users may even see a service as unreliable and a business as inept if the UI/UX is poorly designed [3].

The heuristic processing theory, which holds that users base their confidence on design order and consistency, while a lack of an overwhelmingly adequate usability is a trust-related function of UX/UI design. According to Kamran et al. (2024), an organization's perceived website quality is an implicit

measure of its credibility that either increases or decreases an organization's e-shopping trust and attitudes [7].

When businesses use AI technologies, trust issues about user experience become even more complex. Because of recommendation algorithms, adaptable interfaces, privacy concerns, and data gathering difficulties, consumers may feel more confident and efficient, but they may also feel more concerned. For confidence in the interaction, design transparency and user control over AI systems appear to be especially and critically significant [15].

2.4.3. AI-Generated Content: Trust Opportunities and Threats

AI writing and communications tools have advanced significantly and are already a crucial component of contemporary e-commerce, from product suggestions to chatbots for customer support and product descriptions. Effective use of writing/messaging tools can increase scalability, personalization, and consistency, all of which have a beneficial effect on cognitive trust [8; 18].

However, from an analytical standpoint, there is very little confidence in AI content. Using an AI writing tool to streamline customer service is a good example of an appropriate use in the modern world. The consumer will agree to the automation if they are aware of the service's limitations and if it is designed to accomplish a clear objective. Customers will lose faith in a service that is opaque, makes it difficult for them to understand the tool's limitations, and seems to be highly automated with little to no human engagement [13].

The more widely AI is accepted, the more trust may be established in it, and the more human integration, control, and visibility there is, the more trust customers will have [1; 2; 16] (See Table 2).

Table 2. Digital Content and UX Elements as Trust Signals

Digital Element	Trust Dimension Affected	Potential Trust Risk
Product visuals	Cognitive trust	Misrepresentation
UX/UI consistency	Cognitive trust	Perceived illegitimacy
AI-generated descriptions	Cognitive trust	Loss of authenticity
Personalization	Emotional trust	Privacy concerns

Source: Formed by the author.

2.5. Service Stability and Post-Purchase Trust

2.5.1. Delivery Reliability and Customer Support

In online transactions, a significant portion of the trust-building process takes place prior to the purchase, but it also involves the seller's behavior after the purchase. The majority of customers now anticipate receiving their purchases within the time range specified before the sale. Customers start to lose faith in vendors if they don't deliver the product on time, supply the incorrect item, or deliver the item at all, even if they had a good prior experience with the seller [3].

Because it lessens the emotional effect of issues and preserves consumers' emotional trust, good customer service is a trust stabilizer. According to Ibrahim and Zeebaree (2025), resolving service issues is crucial since it entails maintaining consumers' trust and mending any that may have been damaged [5]. From an analytical perspective, systems that are error-free gain trust just as much as those that are capable of handling errors. There are advantages and disadvantages to trust and AI customer support solutions. Because AI solutions are affordable, they can have a favorable effect on online transaction trust.

Yet, AI solutions are also perceived as being emotionally detached and incompetent, both of which are detrimental to trust. According to Singh et al., trust is crucial when using online shopping assistants and will facilitate their uptake. This demonstrates that employing AI and automating customer service contacts must be done in a way that prevents automation and indifference in crucial client interactions [15].

2.5.2. Returns and Dispute Resolution

Policies regarding returns and dispute resolution mechanisms act as institutional safeguards when they redistribute the misalignment of transactional risks. Simple, fair, and even enforceable procedures decrease the consumers' perceived loss, thereby raising the likelihood of consumers

undertaking online transactions, specifically for experience goods, which consumers cannot evaluate before committing. [12].

Systemically, returns cannot only be seen as a process; they can be seen as a process of trust. A company's assurance of potential quality, and a seller's commitment to good-selling policies, can be symbolically communicated through generous return policies. In contrast, limited return policies can be seen as defensive or opportunistic behavior. Kamran et al. (2024) indicate that, before making a purchase decision, consumers often see a potential lack of returns as an anticipatory problem. [7].

Trust can be further instilled in the institution through the dispute mechanisms provided by the platforms, which act as impartial mediators between buyers and sellers. According to Papastamoulou and Antonopoulos (2025), the framework of trust established through standardization of the dispute systems allows the platform to preserve trust even in the face of numerous and diverse sellers [10; 11]. However, the inconsistent application of systems and the perceived bias of the mediators further accentuates the need for clear processes, especially accountability.

2.5.3. Long-Term Trust Formation

I trust this is not a case of cumulative trust. Some examples of positive experiences are cognitive and emotional trust, which increase the tolerance of uncertainty, while the reliance on external validation mechanisms like 'reviews' and 'influencer endorsement' is reduced [3].

Once the trust is formed, the focus shifts from singular transactions to maintaining a relationship. Customers start shifting from waiting on social review endorsement to habitual reliance on the trust built gap to the service for commerce, which is positive. Ibrahim and Zeebaree (2025) mention how the positive commerce relationship translates to decreased acquisition costs to the merchant, and increases renewals [5].

From the commerce side, consistent positive service translates to trust being built. Conversely, it is the repeat negative service that translates to trust being decreased (as negatives are from the same service). Figure 3 demonstrates the relation of service/product trust to repeat patronage.



Figure 3. Post-Purchase Trust Reinforcement Cycle

Source: Built by the author.

3. Problem Statement

The primary goal of this paper is to provide a critical analysis of the online sales ecosystems where trust mechanisms operate without the benefit of direct person-to-person interaction. Rather than considering trust a singular psychological variable, I consider trust a composite, layered, systemically

generated value from the phenomena of informational equity, social proof, content control, user experience, and post-transaction service.

The study has three objectives. The first objective is to answer the question: what is trust in the context of digital commerce, as I analyze the cognitive and emotional elements of trust and the role of perceived risk and trust asymmetry in the buyer and seller antagonism. The second objective is to analyze the role of transparency, reputation systems, AI content, and platform governance to identify the paradoxical nature of their stabilizing features and their risks. The third objective is to identify and analyze the frameworks of trust to present an integrative analytical model, positioning trust as an ongoing, cumulative process rather than an outcome of a single, pre-transaction trust condition. By utilizing the advancements in scholarship on trust in e-commerce, electronic word of mouth, AI, and digital platforms, this paper seeks to address the issues related to the sustained trust mechanisms and online sales.

4. Methods and Materials

4.1. Research Design

This study used an integrated conceptual research design to analyze the construction of trust in e-commerce environments where there is no physical interaction. Instead of using primary empirical data, the study uses a systematic review and synthesis of all relevant existing academic literature across the fields of e-commerce, digital trust, artificial intelligence, and platform governance. This design is both exploratory and explanatory and seeks to provide a holistic view of trust as a multidimensional and systemically produced phenomenon. Unlike previous studies that have treated trust as a unidimensional variable, this study conceptualized trust as an emergent product of interacting technological, informational and institutional elements in digital markets.

4.2. Data Sources

This study is based on secondary data collected from peer-reviewed articles, conference proceedings and preprints. The literature selected includes several thematic areas relevant to contemporary digital commerce; specifically:

- Trust and risk perceptions of consumers in e-commerce.
- Social proof mechanisms (electronic word-of-mouth).
- Application of Artificial Intelligence in online commerce.
- Governance of platforms and structures of digital markets.
- Quality of UX/UI and digital content.

Sources were selected because they relate to current trends in digital commerce, with a particular emphasis on studies published between 2023 and 2025 so as to capture recent advances in AI-driven systems and platform-based sales environments.

4.3. Analytical Approach

This study employed a thematic and comparative analytical approach.

First, themes related to trust formation were extracted from the literature and grouped into large analytical categories including;

- Transparency.
- Social Proof.
- Quality of Digital Content.
- Experience of the User.
- Governance of Platforms.
- Service Post Purchase.

Second, a comparative analysis was completed to differentiate among the various dimensions of trust (cognitive and emotional), and to compare the influence of perceived risk and trust asymmetry in buyer-seller relationships.

Third, the study applied conceptually synthesized knowledge to integrate insights from multiple bodies of literature to find patterns, interdependence, and contradiction — especially with regard to the dual role of artificial intelligence as a source of trust and distrust.

4.4. Framework Development

Based upon the synthesis of the literature reviewed, the study developed an integrated analytical framework that conceptualizes trust as a dynamic and cumulative process rather than a static prerequisite to transactions.

The framework identifies three primary dimensions of trust:

- Cognitive Trust — Derived from Information Accuracy and Rational Evaluation.
- Emotional Trust — Shaped by Experience of the User and Relational Interaction.
- Institutional Trust — Embedded in Governance of Platforms and Systemic Safeguards.

Each dimension is evaluated relative to its relationship to mechanisms and risks of building trust. The final model demonstrates how trust evolves through repeated interactions in a marketplace, and is either supported or diminished based on the consistent performance of the system (See Figure 4).

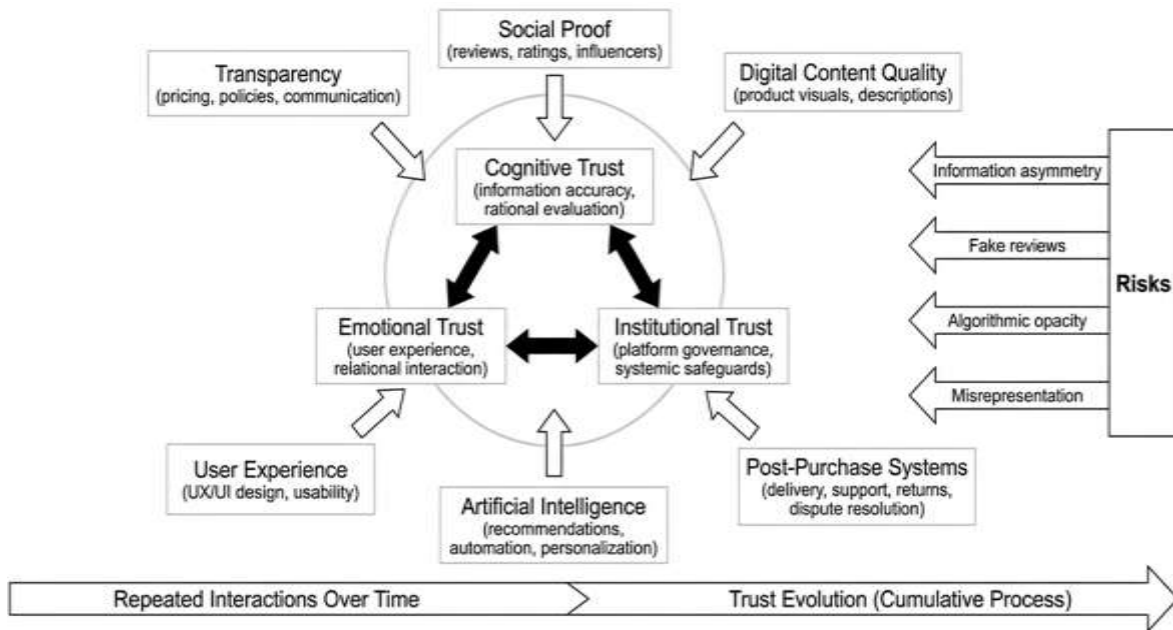


Figure 4. Conceptual Framework developed by Dmytro Lavryniuk

Source: Built by the author.

4.5. Limitations of the Study

As a conceptual study, the research did not utilize primary empirical evidence. Although this enables broad theoretical integration, it also restricts the potential to apply the findings broadly across specific industries or platforms.

In addition, the study utilizes the existing literature. Therefore, the literature selected may contain varying methodologies and assumptions regarding context. Future research can build upon this study through empirical testing of the proposed framework — especially in the context of a specific platform or cultural context.

5. Results

Trust in online retail is a multidimensional and systemically created construct. It is not simply an individual's psychological attitude toward the online retailer. Cognitive, emotional, and institutional aspects interact with each other. They all contribute to how customers perceive the process of buying something online without physically being there. Cognitive trust is developed mainly through an evaluation of available data (e.g., product descriptions, prices, policies). Emotional trust develops through the quality of customer experience, the quality of customer communication, and the post-purchase relationship. Institutional trust is represented by the mechanisms that platforms create to govern the sale (governance models; monitoring systems; and dispute resolution systems) to develop trust. The three dimensions work together to form a dynamic system in which trust is formed progressively rather than as a pre-requirement for participation.

One of the main findings of the study was the essential role of transparency in reducing uncertainty and allowing the development of trust. For example, transparent pricing, access to policies, and accurate product information represent the primary means for customers to determine if a seller is trustworthy. However, transparency does not automatically produce trust. Rather, the degree of transparency has to be clear and consistent. Therefore, superficial or inconsistent transparency (i.e., vague pricing structures; opaque processes; etc.) can have a negative effect on the development of trust even when other factors contributing to the development of trust exist. Transparency refers not only to the existence of information, but also to the intelligibility and reliability of the information from the perspective of the customer.

In addition to transparency, social proof mechanisms function as important alternatives to physical experience-based assessments. Customer reviews, ratings, and user-generated content are forms of indirect evidence that allow customers to assess products and retailers based on the experiences of previous customers. Social proof functions through both cognitive and emotional routes through providing informational cues and facilitating social validation. The results also reveal the inherent vulnerabilities of social proof systems. Fake reviews, coordinated behaviors, and increasingly sophisticated artificial intelligence-generated content introduce systemic risks that go beyond individual transactions and may lead to erosion of trust in the entire platform ecosystem.

Additionally, high-quality digital content and user experience are found to be important determinants of trust formation. Visual representation of products and realistic depictions of them reduces ambiguity and supports cognitive trust by establishing an expectation of product performance. Similarly, user interface and user experience design are used as heuristics to judge credibility. Through design consistency, navigation clarity, and system performance, customers infer reliability and competence of the retailer. Poorly-designed user interfaces, slow loading times, or unorganized layouts can lead to instantaneous distrust of the retailer regardless of the quality of the product or service.

Artificial Intelligence (AI) is recognized as a critical but ambiguous component in the formation of trust. On one hand, AI increases the efficiency, scalability, and personalization of online retail, therefore increasing cognitive trust through the improvement of relevance and information processing. On the other hand, AI introduces new risks related to the transparency, perception of control, and accountability of decision-making. A significant amount of trust in AI-mediated systems will depend upon transparency, the awareness of users regarding their interactions, and the existence of human oversight. When users perceive AI-mediated systems to be overly automated or difficult to understand, they become skeptical and trust diminishes, although the functionality of the system improves.

Furthermore, the results of the study indicate that trust formation occurs not at the moment of purchase, but also after the purchase. Post-purchase systems are a major contributor to trust formation. Reliability of delivery, quality of customer support, return policies, and dispute resolution mechanisms are very important in maintaining and strengthening trust over time. Well-functioning post-purchase processes decrease perceived risk and counteract the negative effects of service failure. Positive repeated experiences strengthen trust, and the need to rely on external validation mechanisms (e.g., reviews and ratings) decreases.

Finally, the results confirm the existence of structural trust asymmetry in the online purchasing process. Retailers know much more about products and processes than do buyers. Buyers take on more risk than do retailers. This unequal distribution of knowledge is alleviated somewhat by platform-level mechanisms, such as buyer protection policies and institutional mechanisms. As a result, platform governance is a major determinant of trust in the digital commerce ecosystem (See Table 3).

6. Discussion

6.1. Trust as a Systemic and Dynamic Construct

The findings of this study reinforce the idea that trust in online sales is not a single element of consumer psychology, but a composite of different mechanisms developed through the interaction of different factors. This supports previous research which has shown that consumer trust in e-commerce is multi-faceted, comprising both cognitive, emotional and institutional elements that impact how they behave in the marketplace. Unlike some researchers who have suggested that trust is a pre-condition to transacting online, this study shows that trust emerges through the development of repeated experiences and consistency in the signals received by consumers.

Table 3. Key Findings on Trust Formation in Online Sales

Dimension	Key Elements	Role in Trust Formation	Associated Risks
Multidimensional Trust Structure	Cognitive, emotional, institutional trust	Trust emerges as an integrated system rather than a single factor; develops progressively through interaction	Fragmentation of trust if dimensions are inconsistent
Transparency	Clear pricing, accessible policies, accurate product information	Reduces uncertainty and perceived opportunism; enables informed decision-making	Superficial or inconsistent transparency undermines credibility
Social Proof	Reviews, ratings, user-generated content, influencer validation	Substitutes physical interaction; provides informational and social validation cues	Fake reviews, manipulation, AI-generated content distort trust signals
Digital Content Quality	Product visuals, descriptions, authenticity of representation	Reduces ambiguity; aligns expectations with actual product performance	Misrepresentation and over-optimization reduce trust
User Experience (UX/UI)	Interface design, navigation, speed, consistency	Acts as a heuristic signal of reliability and professionalism	Poor design leads to immediate distrust regardless of product quality
Artificial Intelligence (AI)	Personalization, recommendations, automated content, chatbots	Enhances efficiency and relevance; supports cognitive trust	Opacity, perceived manipulation, lack of accountability
Post-Purchase Systems	Delivery reliability, customer support, returns, dispute resolution	Reinforces and stabilizes trust over time; enables recovery from failures	Service failures and inconsistent policies erode accumulated trust
Trust Asymmetry	Information imbalance between buyer and seller; platform mediation	Platforms redistribute risk and act as institutional trust anchors	Over-reliance on platforms; potential governance failures

Source: Formed by the author.

In addition, the data indicates that trust in digital sales platforms should be seen as an emergent property of the digital sales ecosystem, rather than being a function of a single mechanism. The interplay between the four mechanisms of information transparency, platform governance, user experience and post-sales systems illustrates the need for studies of trust to focus at the systemic level.

6.2. Interdependence of Trust-Building Mechanisms

Another important conclusion drawn from this research is the inter-dependency of trust building mechanisms, specifically: transparency, social proof, digital content and platform governance. Transparency has been identified in much of the literature as a means of reducing uncertainty and perceived opportunistic behavior, especially in markets where buyers cannot physically inspect goods [6]. However, these data show that transparency needs to be consistent across all areas of contact. Inconsistent or fragmented forms of transparency may diminish trust regardless of whether other mechanisms exist. Thus, we see that trust is increased by the coherence of signals, rather than simply by isolating specific signals.

6.3. Social Proof and the Fragility of Digital Trust Signals

Social proof, as a replacement for physical interaction, is supported by existing research on e-commerce. User-generated content and reviews provide crucial informational and normative cues to inform purchasing decisions [12]. They allow consumers to evaluate products indirectly.

These systems, however, are inherently fragile. Fake reviews, coordinated review writing, and artificially created content via AI threaten the integrity of these systems at a systemic level. This supports concern about the decline in reliance on digital trust signals [14]. Therefore, while social proof exists as a cue to inform trust, the existence of credible social proof alone does not ensure that trust will

develop. Credibility and good governance of the systems creating and regulating social proof are also required.

6.4. UX, Digital Content, and Heuristic Trust Formation

Consistent with the literature, the results demonstrate that digital content quality and user experience serve as heuristic indicators of trust to initially form perceptions of trust before detailed evaluations. The interface design, navigation ease of use and visual authenticity signal the organizations' ability to execute and perform reliably [7]. Therefore, like prior research on perceived website quality and trust formation [7], UX/UI design represents a key component of trust-building systems in digital environments.

Trust in digital environments appears to be primarily influenced by cognitive heuristics. Users rely upon the design quality and consistency of websites to determine credibility; thus, UX/UI design represents more than a usability component – it represents a core component of trust-building systems in digital environments.

6.5. The Paradoxical Role of Artificial Intelligence

One of the major findings of this study was the dual and paradoxical role of artificial intelligence in trust formation. On the one hand, artificial intelligence enables personalized services, speed and efficiency, and scalability, and therefore contributes positively to the user experience and the decision-making processes of consumers [1; 2]. On the other hand, artificial intelligence generates new types of uncertainties due to a lack of transparency, perception of manipulation, and accountability.

Therefore, the literature illustrates the structural contradiction in the context of artificial intelligence. Artificial intelligence improves performance by automating certain functions, but lacks transparency and therefore reduces user confidence. Especially if the decision-making processes are not comprehensible. Algorithmic opacity and fairness problems are among the main obstacles to the acceptance of artificial intelligence [13].

Thus, trust in AI-mediated systems depends on the functional effectiveness and transparency of the system. Furthermore, the trust in AI-mediated systems depends on the possibility of explaining the decision-making process, the willingness to take responsibility for the system's actions, and the possibility of human control over the system.

6.6. From Transactional to Relational Trust

Based on the findings of this study, trust progresses from a transactional type of trust based on the first impressions provided by reviews and product descriptions to a relational type of trust that emerges from past experiences. The post-purchase systems—delivery reliability, customer support, dispute resolution—are essential in developing this transition.

This is in line with the literature that states that trust grows through a consistent performance of the service and through successful recovery from failure [5]. Through repeated positive experiences, consumers become less dependent on external validation mechanisms, and develop trust in the company based on their own experiences. Therefore, it is evident that the long-term reliability of the systems used to interact with consumers is a critical factor for establishing lasting relationships with them.

6.7. Institutionalization of Trust and Platform Dependence

Lastly, the findings of this study illustrate a fundamental change from interpersonal to institutionalized trust in online marketplaces. Platforms act as institutions of trust that enable consumers to feel secure in their purchases and protect themselves against risks. In order to do so, platforms establish governance mechanisms, enforcement systems and dispute resolution procedures that reduce the perceived risk.

This is supported by research that illustrates that governance of platforms plays a critical role in influencing trust in digital marketplaces [10]. However, because of the dependence on the platforms, the failure of the platforms—such as failure in algorithms, inability to monitor—will undermine the trust in the entire ecosystem.

7. Conclusions

This research illustrates how the various components of technology, information, and institutions combine to build trust in online transactions, especially in the absence of any physical contact. Trust is created through a combination of transparency, social proof, quality of digital content, governance of the platform, and the quality of service after the sale, which counters the uncertainty presented with digital commerce. Unlike the traditional retail setting, where trust is easily built through personal contact and physical inspection of the merchandise, online retail requires consumers to depend on representations and cues that are driven by algorithms. As the research demonstrates, these cues can be weak. Fraudulent information about the product, artificial reviews, and opaque algorithmic service delivery can quickly destroy trust, even in the presence of multiple components that adequately perform. Therefore, trust in online transactions should be viewed from the level of the ecosystem, as opposed to just a dependent factor of the individual transaction. The increasing use of artificial intelligence adds to this ecosystem complexity. The role of trust in digital commerce continues to increase, with the governance of artificial intelligence and its alignment with real outcomes.

From a strategic point of view, the results indicate that, with online sales, the building of trust needs to be regarded as the development of a coherent system over the long term, rather than as a series of disparate marketing initiatives:

First, trust-building processes are most effective when the level of transparency the company offers goes beyond superficial transparency, such as clear pricing, accurate description of the products, and the conditions under which the services are provided. Transparency is most effective at building trust when customers are able to understand the purpose of the information presented and the reason for its particular construction.

Second, social proof mechanisms need to be cared for. Trust is easily substituted for reviews, ratings, and influencer marketing, but it is easily lost and most difficult to regain when the mechanisms of trust are loosened. Companies that do not moderate and police the trust mechanisms of their social proof ultimately risk decreasing their level of trust in the system as a whole and, in the long-term, value users.

Third, superior quality digital content and thoughtful UX/UI design should be viewed as constructive trust signals rather than simply functional or aesthetic features. Design that demonstrates Consistency, Clarity, and Authenticity reduces cognitive friction and signals institutional confidence. When using AI-generated content, it should be aligned with verifiable product data and should be supplemented with human involvement to ensure content authenticity.

Finally, post-purchase systems (including reliability of delivery, customer support, and support for dispute resolution) play a critical role in trust stabilization over time. Trust, after all, is earned through experience. Platforms and sellers that focus on service recovery and equitable dispute resolution are most likely to convert transactional trust into relational trust.

References

1. Grewal, D., Saturnino, C. B., Davenport, T., & Guha, A. (2025). How generative AI is shaping the future of marketing. *Journal of the Academy of Marketing Science*, 53(3), 702–722. <https://doi.org/10.1007/s11747-024-01064-3>
2. Haidar, I. (2024). Applications of artificial intelligence in e-commerce. *Journal of Artificial Intelligence General science (JAIGS)*, 5(1), 32–38. <https://doi.org/10.60087/jaigs.v5i1.151>
3. Handoyo, S. (2024). Purchasing in the digital age: A meta-analytical perspective on trust, risk, security, and e-WOM in e-commerce. *Heliyon*, 10(8), e29714. <https://doi.org/10.1016/j.heliyon.2024.e29714>
4. Hasan, R. (2025). Enhancing market competitiveness through AI-powered SEO and digital marketing strategies in e-commerce. *ASRC Procedia: Global Perspectives in Science and Scholarship*, 1(01), 465–500. <https://doi.org/10.63125/31tpjc54>
5. Ibrahim, I. Y., & Zeebaree, S. R. (2025). Emerging Trends in E-commerce: A Review of Consumer Behavior, Marketplaces and Digital Platforms. *Asian Journal of Research in Computer Science*, 18(4), 45–58. <https://doi.org/10.9734/ajrcos/2025/v18i4607>

6. Jabeen, R., Khan, K. U., Zain, F., Atlas, F., & Khan, F. (2024). Investigating the impact of social media advertising and risk factors on customer online buying behavior: A trust-based perspective. *Future Business Journal*, 10(1), 123. <https://doi.org/10.1186/s43093-024-00411-8>
7. Kamran, M., Riaz Pitafi, Z., Awan, T. M., Ochowski, T., & Szostak, M. (2024). From Clicks to Trust: Electronic Word of Mouth and Perceived Website Quality Versus E-Shopping Attitudes. *International Journal of Contemporary Management*, 60(1), 252–266. <https://doi.org/10.2478/ijcm-2024-0016>
8. Kathiriya, S., Mullanpudi, M., & Karangara, R. (2023). Optimizing ECommerce Listing: LLM-Based Description and Keyword Generation from Multimodal Data. *International Journal of Science and Research*, (12), 2123–2130. <https://doi.org/10.21275/SR24304113521>
9. Lu, H., Zhang, L., & Zhu, Y. (2024). The Power of Linear Programming in Sponsored Listings Ranking: Evidence from Field Experiments. arXiv preprint arXiv:2403.14862. <https://doi.org/10.48550/arXiv.2403.14862>
10. Papastamoulou, P., & Antonopoulos, N. (2025). Artificial Intelligence in E-Commerce: A Comparative Analysis of Best Practices Across Leading Platforms. *Systems*, 13(9), 746. <https://doi.org/10.3390/systems13090746>
11. Patil, D. (2024). Generative artificial intelligence in marketing and advertising: Advancing personalization and optimizing consumer engagement strategies. *SSRN*. <https://dx.doi.org/10.2139/ssrn.5057404>
12. Phuong, D., Kien, D. T., Thinh, V. M., & Phuong, T. N. (2025). Online reviews on E-commerce platforms in Vietnam: The role of trust in behavioral intention. *International Journal of Informatics and Communication Technology*, 14(1), 195–206. <http://doi.org/10.11591/ijict.v14i1.pp195-206>
13. Ren, Q., Jiang, Z., Cao, J., Li, S., Li, C., Liu, Y., & Chen, Y. (2024). A survey on fairness of large language models in e-commerce: progress, application, and challenge. arXiv preprint arXiv:2405.13025. <https://doi.org/10.48550/arXiv.2405.13025>
14. Roumeliotis, K. I., Tselikas, N. D., & Nasiopoulos, D. K. (2024). LLMs in e-commerce: A comparative analysis of GPT and LLaMA models in product review evaluation. *Natural Language Processing Journal*, (6), 100056. <https://doi.org/10.1016/j.nlp.2024.100056>
15. Singh, C., Dash, M. K., Sahu, R., & Kumar, A. (2024). Investigating the acceptance intentions of online shopping assistants in E-commerce interactions: Mediating role of trust and effects of consumer demographics. *Heliyon*, 10(3). <https://doi.org/10.1016/j.heliyon.2024.e25031>
16. Xi, R., Ba, H., Yuan, H., Agrawal, R., Tian, Y., Kong, R., & Prakash, A. (2025). Aug2Search: Enhancing Facebook Marketplace Search with LLM-Generated Synthetic Data Augmentation. arXiv preprint arXiv:2505.16065. <https://doi.org/10.48550/arXiv.2505.16065>
17. Yang, H., Xie, Q., Zhang, Q., Yu, C. L., Zou, H., Lian, C., & Zheng, B. (2025, Nov). GSID: Generative Semantic Indexing for E-Commerce Product Understanding. *EMNLP Industry Track*. <https://doi.org/10.48550/arXiv.2509.23860>
18. Zhou, J., Liu, B., Acharya, J., Hong, Y., Lee, K. C., & Wen, M. (2023, December). Leveraging large language models for enhanced product descriptions in eCommerce. In *Proceedings of the Third Workshop on Natural Language Generation, Evaluation, and Metrics (GEM)* (pp. 88–96). <https://aclanthology.org/2023.gem-1.8/>
19. Zhuk, A., & Yatskyi, O. (2024). The use of artificial intelligence and machine learning in e-commerce marketing. *Technology Audit and Production Reserves*, 3(4(77)), 33–38. <https://doi.org/10.15587/2706-5448.2024.305280>
20. Zumstein, D., & Chodak, G. (2024, Oct). Artificial Intelligence in E-Commerce – Overview of Applications, Benefits and Challenges. In *International Scientific-Practical Conference* (pp. 1–15). Springer. https://doi.org/10.1007/978-3-031-88052-0_1