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The Role of Artificial Intelligence in Using Financial Technology to Enhance Trust in E-Commerce Platforms - An Analytical Study

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Abstract:

This study aims to analyze the role of artificial intelligence in financial technology as a trust-building mechanism within e-commerce platforms. This is accomplished through an examination of AI-powered models designed to detect fraud and ensure customer data protection.

Through descriptive statistical analysis of empirical data concerning customer trust levels, we conclude that artificial intelligence demonstrates significant potential in mitigating fraud risks. AI functions as an analytical tool for interpreting and preemptively identifying fraudulent activities. However, it simultaneously constitutes a source of concern for over 90% of customers surveyed.

Keywords: Artificial Intelligence (AI); Fintech; E-commerce; Trust; Fraud Detection.
Jel Classification Codes: C88, L81, Z13, O33

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1.INTRODUCTION

Recent years have seen overwhelming happening in e-commerce and financial technology (FinTech), accompanying artificial intelligence (AI) becoming an important element in reconstructing user knowledge and improving digital trust. The e-commerce sector faces meaningful challenges had connection with security, data protection and financial fraud, which otherwise affects consumer confidence. In this framework, AI applications play a critical role in discussing these challenges through deception detection systems.

This study seeks to address the following research question: How does artificial intelligence in financial technology contribute to enhancing customer trust in e-commerce platforms? To explore this inquiry, the following hypotheses have been formulated to guide the empirical analysis:

- H1: Artificial intelligence applications significantly enhance fraud detection capabilities, thereby strengthening trust factors within e-commerce platforms.
- H2: Customers demonstrate substantial confidence in AI algorithms for data protection and risk mitigation against cyber threats.
- H3: Artificial intelligence technologies constitute a source of concern for customers in digital transaction environments.

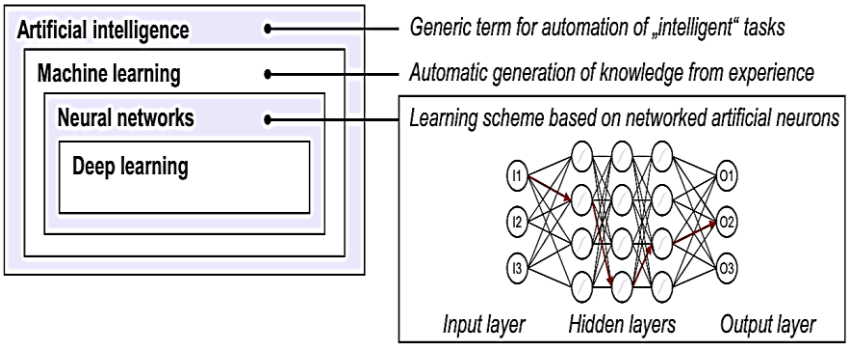
The primary objective of this research is to address the existing knowledge gap concerning the influence of artificial intelligence on building customer trust within e-commerce platforms, with particular emphasis on fintech integration. This is achieved through the analysis of empirical data using descriptive statistical methodologies.

2. LITERATURE REVIEW

2.1. Artificial Intelligence (AI):

In the middle of the twentieth centennial, the field of machine intelligence (AI) arose to denote endeavors that have as one's goal understanding human data by machines. Following neuroscience, intelligence is established skills concerning idea, processing, operation and knowledge. Already in the 1980s rule-located (expert) structures were developed, that admitted to resolve tasks following if-before rules and submitted possible determinations or pieces of advice. Today, the broad chance of dossier (big dossier) and advances in estimating capacity, have allowed AI to extract patterns from complex unstructured dossier sets (recommendation) and to gain ruling class or to adapt their future conduct established past occurrences (production) (Rainer & Stefan , 2022, p. 13).

Fig.1. Categories of artificial intelligence



Source: (Rainer & Stefan , 2022, p. 14)

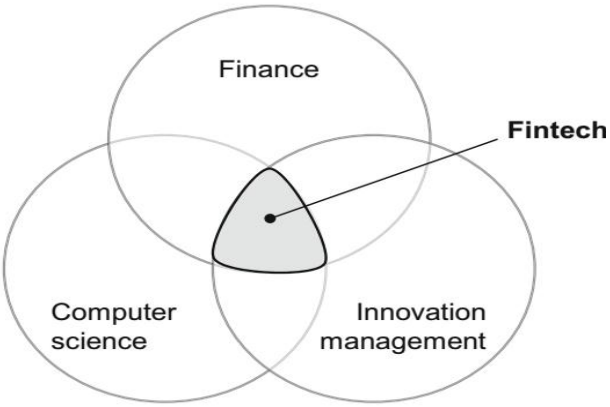
As proved in Fig.1, AI concepts (or procedures) grant permission be subdivided in miscellaneous classifications with machine intelligence (ML) being a main field that applies pretended neural networks whose complicatedness (that is, the number of recommendation and profit layers secondhand) leads to! deep education (that is, two or more unseen coatings). Neural networks process predefined (so-called directed education) or noticed (supposed unsupervised knowledge) recommendation dossier and store the results in a network of growth (or neurons), which reckon change probabilities for a production or urged operation and optimize ruling class accompanying each redundancy. Although the wisdom of these networks tends to correct the value of determinations, the number of secret layers form the determinations of the fake affecting animate nerve organs networks less transparent and understandable for persons. An accepted field of request should language convert (NLP), place neuronal networks store equivalences of conversation and then use ruling class for voice acknowledgment. Depending on the form of knowledge and the complicatedness of the application, a type of request regions endures in the financial subdivision (AI request extents) (Rainer & Stefan , 2022, pp. 13-14).

2.2. Financial Technology (Fintech):

Combination of the beginning syllables of the condition's “finance” and “science”, spelled fintech or FinTech. There are two basic messages: a bland view means a distinguishing type of party. These are mostly startup trades that refurbish usual economic aids by using new science and try to offer their aids in a more creative, adept and/or customer-familiarize habit than existent help providers (incumbents to a degree banks). A

second view is function-oriented and typifies fintech answers, that progressively depend standardization (savings of scale) and less complex crop or aids in the monetary sector. (Rainer & Stefan , 2022, p. 95)

Fig.2. Knowledge field of financial technology



Source: (Rainer & Stefan , 2022, p. 8)

The World Economic Forum (WEF) described fintech as the use of technology and innovative business models in financial services by providing direct products to end users through internet channels and smart devices. In doing so, it indirectly isolates the traditional financial services offered by conventional financial institutions (WEF, 2015, pp. 5-6).

2.3. Digital Trust:

Consumer confidence is the organization of most successful undertakings in the mathematical field, considering the promptly changeful field of e-commerce. Online shopping should any of everyday life, and the level of trust, safety, transparence, and attraction of such terraces will guarantee consumer retention (Akbar, Ibrahim, Nabil, Iqbal, & Islam, 2024, p. 251).

The trust of customers in connected to the internet transactions is critical in some e-commerce business, as meaningful seen risks and changeableness are expected on account of the type of connected to the internet transactions. Several hypothetical models clear up by virtue of what trust is developed in the mathematical forum (Devlin a. , Roy, Sekhon, Moin, & Sahiner, 2025). Although pioneering, Lee and Turban's model frames four detracting forerunners of services trust in buying: retailer's honesty, medium's trustworthiness, dependent determinants in the way that security confirmation, and individual determinants to a degree consumer weakness to trust. They decide that a seller's integrity and a plank's safety measures are owned by the consumer's trust, considerably when mediated by a servicer's predisposition to trust. (Lee & Turban, 2001, p. 77)

3. AI-ENTREPRENEURSHIP RELATIONSHIPS

In this section, we will discuss the basic features that AI relies on to activate the performance of financial technology (fintech) and e-commerce, by presenting the applications that support it and analyzing the impact of the integration of artificial intelligence on these variables.

3.1. Applications of artificial intelligence in e-commerce platforms

AI should a principal part of e-commerce to improve the business process further. It boosts customer date and interaction through digital resources (R. Augustian, Prakhar,

Rohan , & Gareja, 2018, p. 15). AI provides a superior client experience to connected to the internet retailers and assists ruling class in making intelligent resolutions. The far-reaching use of technology and its new act have led exchange firms to enact electronic floors for arriving customers electronically (Wang, Sayed, & Ayassrah , 2023, p. 4).

Artificial intelligence provides a qualitative addition to e-commerce platforms by integrating technical applications through algorithms that are consistent with the nature of work in the electronic market to provide better service to customers. Among these applications we mention: (Johnson, 2023)

Automation: Automation of miscellaneous trade functions is another use of AI that considerably impacts buying. E- economics firms provide 24/7 consumer support through computerization. AI in buying automates recommending new fruit on diversified channels to synchronize marketing. In addition, it labels extreme-risk undertakings and offers discounts to potential consumers.

Smart Search: Smart search is another advantage of AI in buying and powerfully impacts the manufacturing. includes components like chop with sharp instrument search, guiding along route, often over water, autocomplete, urged merchandise record, and current searches to offer a user-friendly, personalized produce and advantageous search happening.

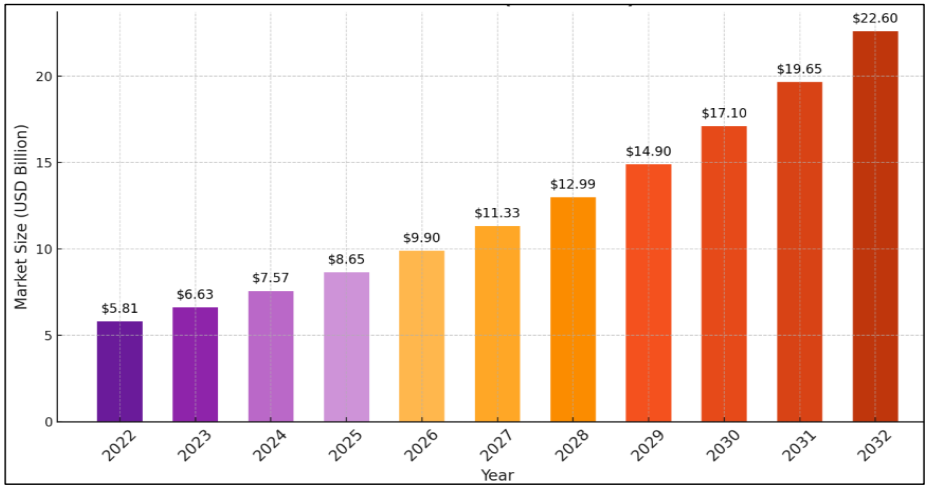
Voice Commerce and Virtual Assistants: Virtual helpers are chat bots convenient 24 h moment of truth, seven days a period, to handle differing consumer asking. It is individual of the most direct habits to analyze and follow entity.

Personalization: is reconstructing a consumer's buying happening established their needs, predilections, etc. The personalization of device is based on current annals, flipping through behaviour, purchase history.

Marketing automation: This maybe approved through the use of AI and the description of the behavioural patterns of each customer. For example, each client's view and purchase history is stocked skilled, and remarketing is accomplished in accordance with this data.

The integration of AI into e-commerce platforms significantly enhances marketing and purchasing activities, attracts consumers from diverse and previously untapped regions, and increases overall efficiency and productivity. The following figure provides an overview of the evolution of e-commerce market value under the influence of AI.

Fig.3. AI in E-Commerce Market Size 2022 to 2032 (USD Billion)



Source: (Sarkar, Rashid, Hoque, & Mahmud, 2025, p. 13)

As illustrated in the figure 3, artificial intelligence provides robust support for the growth of e-commerce revenues, with its indicators increasing from 2022 to 2025 by 3 points, reaching a market value of 8.65 million dollars. This reflects the significant contribution of artificial intelligence applications across e-commerce platforms in enhancing productivity and strengthening customer relationships. Furthermore, it predicts the continued rise of market value in the coming years, driven by the sustained integration of artificial intelligence technologies.

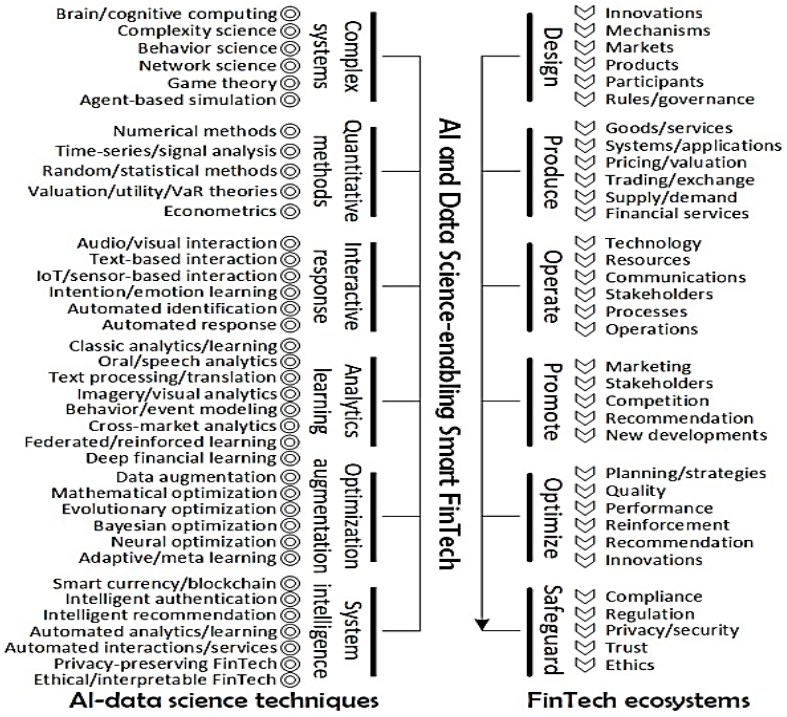
3.2. Supporting AI applications for Fintech services

The fintech manufacturing has endorsed significant progresses in current years, sustained by digitalization and the unification of big-dossier study, artificial intelligence (AI), and cloud estimating (Kanaparthi, 2024, p. 2).

One of the key motorists of the enactment of AI in the fintech sector is allure skill to process vast amounts of dossier and extract valuable visions for decision-making purposes. With the unification of AI and generous-data science of logical analysis, fintech guests can offer embodied financial duties, improve operational adeptness, and humiliate costs, thereby acquire a back-and-forth competition in the market (Daníelsson, Robert , & Andreas, 2022, p. 3).

These FinTech parties undertake expanding and offering creative financial products and aids that employ digital technology, dossier analytics, and automation to better various facets of financial transactions, administration, consumer satisfaction, trust, and accountable. FinTech involves payment prepare, system where banking transactions are completed electronically, promoting loans and crowdfunding, enabling computerized loan and wealth administration, purchasing, selling, and business digital currencies, development and use of cryptocurrencies, in the way that Bitcoin protection buying, underwriting, and claims processing to name any (Aldboush & Marah, 2023, p. 4).

Fig.4. AI & data science enabling smart FinTech



Source : (Cao, Yang, & S. Yu, 2021, p. 88)

AI applications support various sectors and domains of fintech through intelligent service systems that establish an integrative link contributing to the development of the technological companies' ecosystem. This synergy fosters a competitive advantage within the field of entrepreneurship.

The unification of AI and important data in the fintech manufacturing presents convenience and challenges. While these technologies authorize innovative commercial services and reinforced consumer experiences, addressing righteous concerns in the way that bias, transparency, solitude, and trust is principal (Aldboush & Marah, 2023, p. 5). By prioritizing the accountable and ethical use of data, give in accompanying regulatory foundations such as the GDPR, and adopting secure technological resolutions, fintech enterprises can build trust, guarantee customer solitude, and support the industry's sustainable development.

4. STUDY ANALYSIS

4.1. AI strategy to detect and stop fraud in e-commerce platforms

This study uses a mechanics strategy to search by what method AI maybe used to label and stop e-commerce deception: Data accumulation, model building, model judgment, and exercise finishes and foundations, which we explain in the following context brief: (Swapna , Anu , & Manjunatha , 2025, p. 5)

Data Collection: Data group, the beginning stage, entails acquiring variable facts from buying sites. This contains facts about a consumer's past purchases, login dresses, fee details, IP addresses, and instrument types.

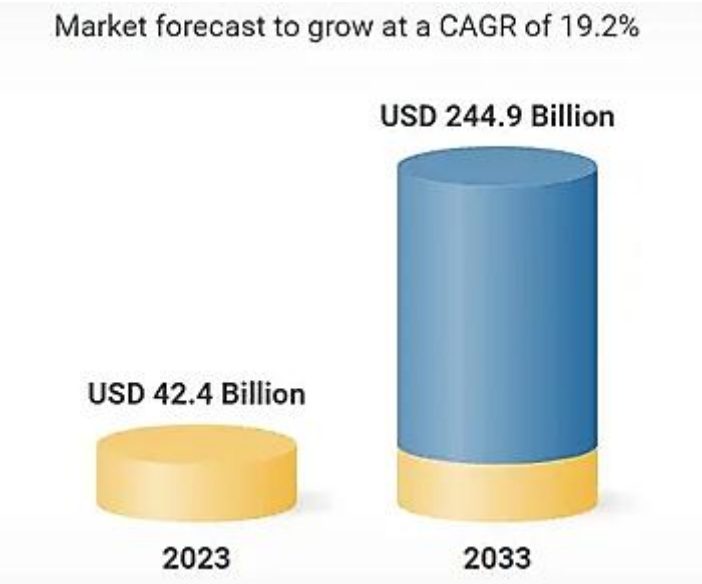
Model Development: To recognize deception, a variety of AI approaches are second hand during the whole of the model explanation stage. To change between authentic and doubtful undertakings, supervised education algorithms like conclusion wood, logistic reversion, and neural networks are prepared on branded datasets. By labelling departures from common user conduct.

Evaluation Metrics: Using coarse versification like accuracy, accuracy, recall, and the rates of wrong a still picture taken with a camera and dishonest negatives. These measures aid in evaluating the model's stability and veracity in recognizing fraudulent venture while lowering the negative belongings on actual customers.

Tools and Frameworks: AI models are buxom taking advantage of standard platforms like Python, TensorFlow, Sci-kit-learn, and PyTorch all the while the tools and foundations chapter. The invention, preparation, and real-occasion experiment of deception discovery models are supported by these forms.

With the growth of e-commerce transactions by customers and the expansion of the Internet of Things communications network through smartphone network users, the volume of data and customer privacy circulating in emerging markets has increased, which has raised concerns about the privacy of customer data in electronic markets.

Fig.5. Global Fraud Revelation and Avoidance Market

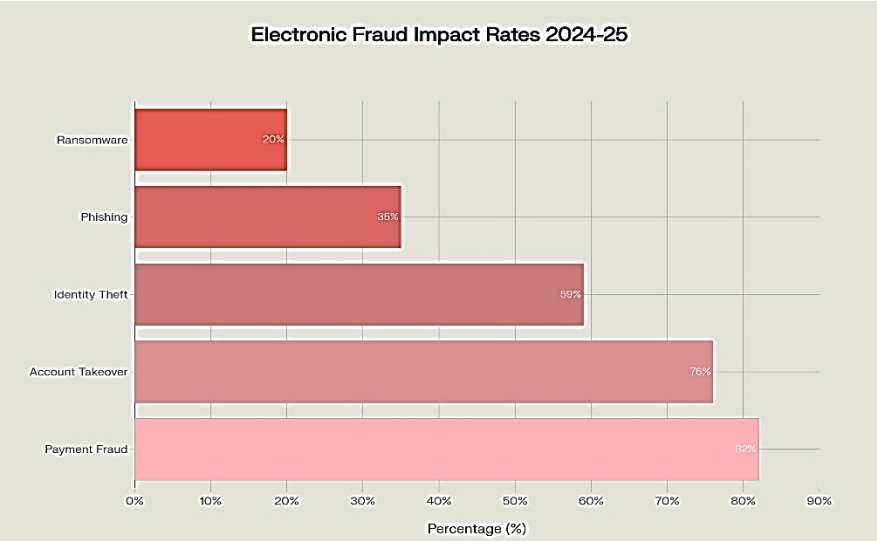


Source: (Research and Markets, 2024)

The global trickery discovery and stop display attained a worth of almost $42.4 billion in 2023, bearing developed at a compound annual growth rate (CAGR) of 16.4% because 2018. The market be necessary to evolve from $42.4 billion in 2023 to $108.9 billion in 2028 at a rate of 20.7%. The market is before anticipated to evolve at a CAGR of 17.6% from 2028 and reach $244.9 billion in 2033 (Research and Markets, 2024).

The use of artificial intelligence in the financial technology industry is raising a wave of concern among customers about protecting data privacy and the transparency of information spread, especially in electronic markets. The sources of fraud and looting have diversified (Fig.6) in recent years, which has affected customers' confidence in relying on these modern technical transactions.

Fig.6. The impact of types of electronic fraud on customers



Source: Researcher based on (InAcademia, 2024)

Identity stealing cases have grown alarmingly, giving reason for 59% of all trickery cases in 2024, accompanying concern increasing from 74% in 2018 to 90% in 2024. Identity stealing has created deficits estimated at $23 milliard currency occurring in current years

(InAcademia, 2024).

2025 too proverb a fearsome increase in payment deception, accompanying reports climbing by 466% driven by phishing forms stimulate by artificial intelligence and industrialization. Account seizures too raised by 76% (Felton, Close, & Papaloizou, 2025).

More precariously, over 50% of trickery cases in 2025 include the use of AI, containing deepfakes, artificial identities, and AI-stimulate phishing movements. Generative AI-stimulate trickery attacks raised by 456% betwixt May 2024 and April 2025, and over 82% of phishing emails are immediately create accompanying AI help (Feedzai, 2025).

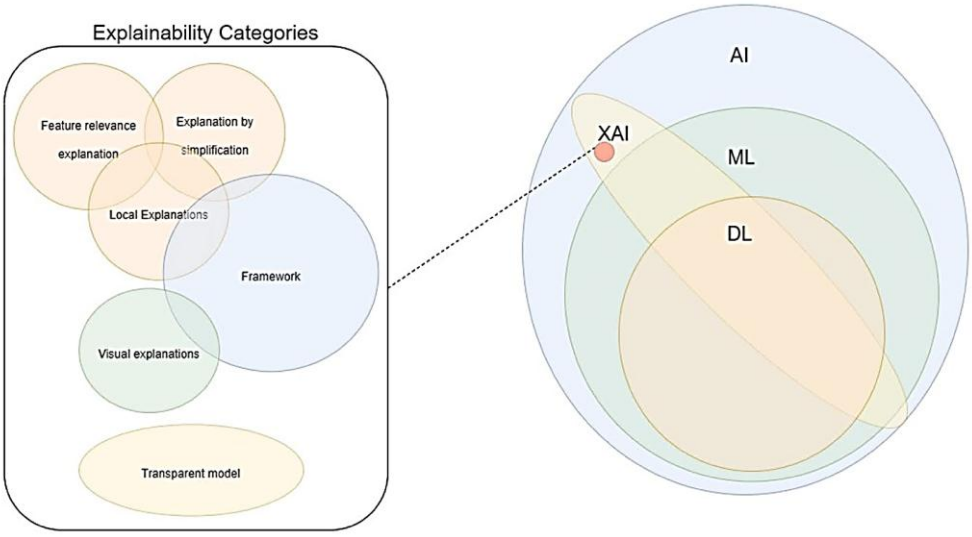
4.2. AI models using Fintech techniques to enhance Trust

There are several models presented by researchers as scientific theories that help in studying the field of artificial intelligence in detecting electronic fraud (e-commerce). We will explain the most important models that rely on artificial intelligence in supporting fintech services to detect fraud and support the element of trust.

4.2.1 Explainable AI (XAI) Model:

The abstract companies of Explainable Artificial Intelligence (XAI) be contingent on two carefully related but specific ideas: explainability and interpretability. Interpretability refers to the scope at which point a human can comprehend the cause of a resolution created by an AI model, while explainability extends this understanding by providing clear, litigable understandings into the model's functioning (Haque, Najmul, & Patrick, 2022, p. 2). The summary of the different classifications and their relations in the XAI countryside inside the finance manufacturing is illustrated in Fig. 8. Explanations involve two stages includes the interpretation and study of data utilizing descriptive data, designating dossier beginnings, and assembling a model (Jurgita & Audrius, 2024, p. 8).

Fig.7. The relationship between AI and XAI



Source: (Jurgita & Audrius, 2024, p. 8)

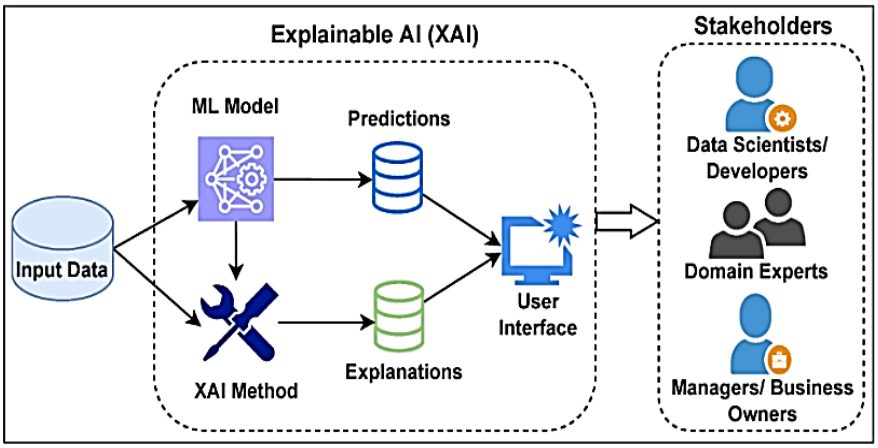
Both concepts address the "black box" question, that stands from the hereditary complicatedness of AI systems, especially those established machine intelligence and deep learning. The lack of transparency in these plans generates challenges in trust, responsibility, and ethical agreement. These techniques emphasize the fault-finding function of (XAI) in

guaranteeing transparency and justice in AI-compelled decision-making (Saranya & Subhashini, 2023, p. 5).

The growing confidence on Artificial Intelligence (AI) in e-commerce has considerably mutated consumer an architectural finish platform (Fig.8), enabling state-of-the-art functionalities in the way that personalized pieces of advice, active reducing, and fraud discovery. As AI algorithms influence buying decisions and client interplays, consumers demand better transparency in understanding by means of what these systems use (Talaat, Aljadani, & Alharthi, 2023, p. 3).

This reliance on AI systems makes necessary adopting Explainable Artificial Intelligence (XAI) to specify clear, interpretable intuitions into in charge processes, particularly in services-backing energies like e-commerce (Tjeerd A.J, Wiard, Mark A, & Karel , 2021, p. 9).

Fig.8. Applications of XAI in E-Commerce



Source: (Sarkar, Rashid, Hoque, & Mahmud, 2025, p. 19)

Moreover, XAI plays a fault-finding duty in addressing trust issues by permissive buyers to understand the action behind AI-compelled determinations. Fraud detection and risk administration are fault-finding applications of Explainable Artificial Intelligence (XAI) in e-commerce, place trust and security are superior. Traditional AI models for deception detection frequently perform as hopeless boxes, producing prognoses outside explaining their action, that can lead to doubt between consumers and regulatory challenges. XAI addresses this by contribution interpretability in fraud discovery algorithms, permissive businesses to label and understand doubtful endeavors with better clarity (Parisineni & Pal, 2023, p. 460).

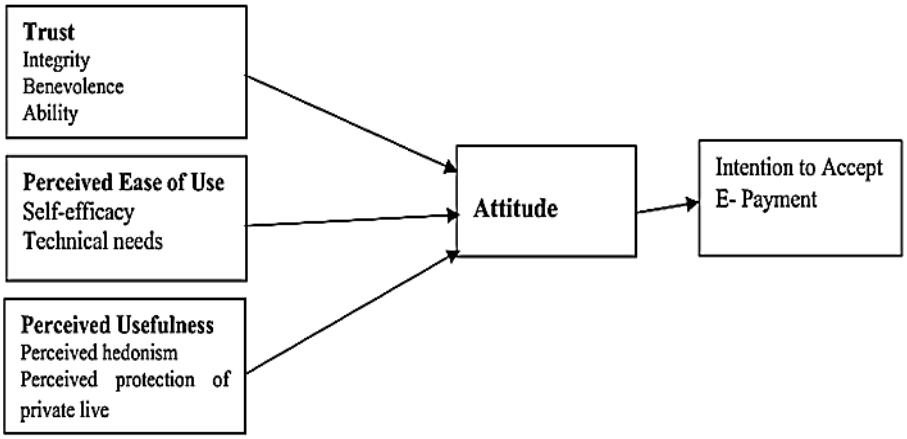
4.2.2 Technology Acceptance Model (TAM):

The widely examined Technology Acceptance Model (TAM) in addition to the more current UTAUT model are effective hypothetical foundations for studying things' electronics acceptance in general, and connected to the internet shoppers' agreement and buying action specifically (Venkatesh, Morris , Davis , & Davis , 2003, p. 430). These models make use of the key constructs of seen ease valuable (PEOU) and seen usefulness (PU) as signs of science acceptance or predictors of site custom conduct. PEOU is the degree at which point individual trusts that using a site is innocent effort, and PU is the opinion that utilizing a site increases shopping acting. The hypothetical premise of the TAM

is, concisely, that PEOU affects PU, that in proper sequence affects stances toward bureaucracy and eventually usage purposes. Despite the progresses presented by the UTAUT, the study depends PEOU and PU as key constructs of mechanics site agreement. This aligns accompanying prior studies that mix trust with science agreement constructs to describe connected to the internet buying behaviour, even though these studies use trust as of highest quality spatial construct (Dickson , Oby, Samuel , & Udoka , 2021, p. 47).

The model of determinants doing consumer's intention to use the e-payment structure. The projected model is based on technology acceptance model (TAM) to consider customer's intention to use e-payment technology.

Fig.9. Technology acceptance model



Source: (Dickson , Oby, Samuel , & Udoka , 2021, p. 48)

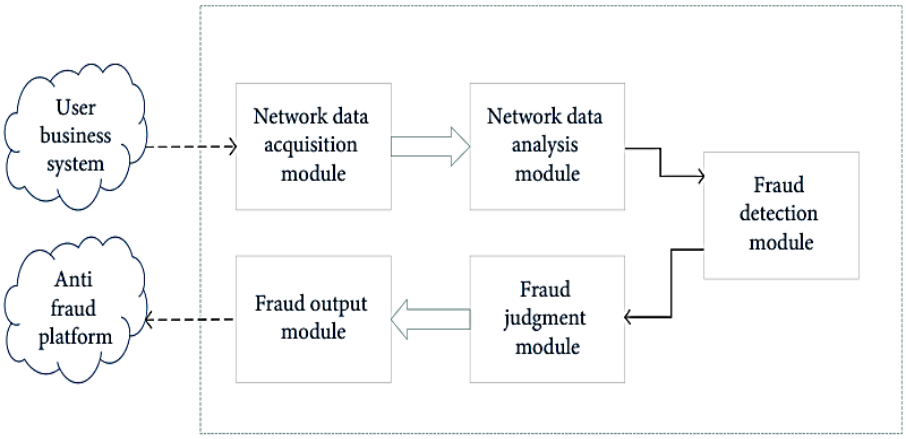
In this proposed model, the rotted trust assemble (completeness, benevolence and strength) were increased the (TAM) model. Trust assemble was added in this place study because it is an important determinant in the study of electronic payment systems and e-commerce.

The three ranges of trust espouse practical and effective pieces to various points, that arguably is crucial for understanding in what way or manner trust briefs relational practices. Utilitarian elements indicate the consumer's perception that the object of trust will meet working objectives, to a degree the ability to act as wonted. Effective components alternatively reflect ideas that the object of trust is from meet related goals (Dickson , Oby, Samuel , & Udoka , 2021, p. 48).

4.2.3 Fraud Detection Model (FDM):

A research paper (JiaoLong , 2022) presents a fraud detection model for e-commerce platforms, identifying fraud and resolving the financial risks faced by B2B companies by extracting big data mining (BDM) and combining it with an Information fusion technology (IFT) model powered by computer technology (CT), artificial intelligence (AI), and data mining (DM) to explore more effective solutions, samples are detached into non-fraud and deception samples. therefore, various algorithms are used to train samples, and DM is used to test the veracity of samples.

Fig.10. The e-commerce FDM based on IFT



Source: (JiaoLong , 2022, p. 6)

The projected e-commerce FDM first collects the original network data shipped to the data study and transform step to obtain the consumer undertaking facts and user demeanor news. before, it sends the consumer transaction news and attitude facts to the FDM matching step. the rule matching engine (RME) is linked accompanying the IFT-based FDM, and the corresponding result is productivity to the deception behavior doom step. Finally, the harvest matching results are deduced to form specific fraud management (JiaoLong , 2022, p. 7).

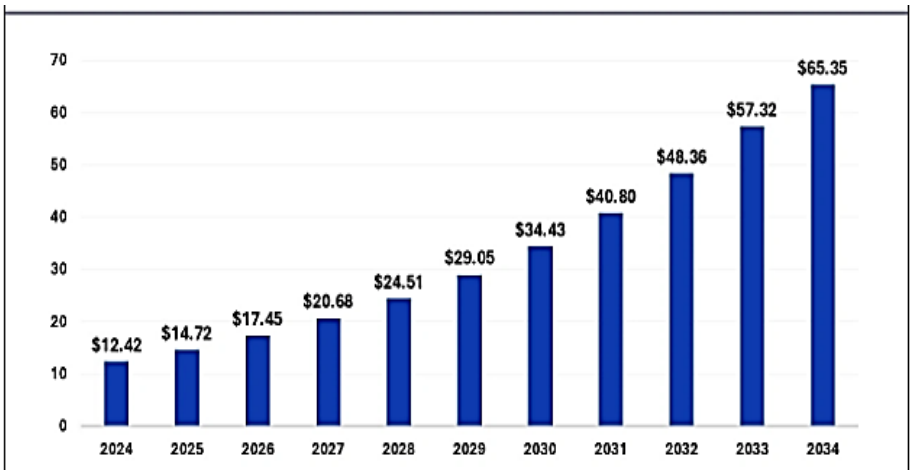
This model provides a qualitative addition to identifying fraud in e-commerce platforms between companies, but with the diversity and development of forms of fraud, there is still a need to develop the effectiveness of the model from all parties related to technology in order to accurately identify fraudsters.

4.3. Analysing the role of AI & Fintech in enhancing the Trust factor

The complex connection middle from two points fintech and customer trust is another meaningful facet that requires consideration. Trust plays an important role in the endorsement of fintech businesses, particularly having to do with data freedom and privacy (Devlin a. , Roy, Sekhon, Moin, & Sahiner, 2025, p. 3). It too specifies AI and Big Data in fintech services supports meaningful benefits, to a degree improved adeptness, embodied services, and diminished costs. However, this also raises ethical and solitude concerns that must be sent to protect consumers' rights and interests. By executing righteous data-convert procedures, ensuring transparence, and regarding data ownership and control (Aldboush & Marah, 2023, p. 7).

AI has enhanced the backbone for looking after digital transactions and construction trust betwixt customers and online platforms. Recent statistics (Fig.11) disclose a pivotal function for machine intelligence in combating computerized fraud and improving consumer experience in an exceptional habit, with swift growth in market amount and significant development in the veracity of intelligent systems.

Fig.11. AI in Fraud Management Market Size 2024 to 2034



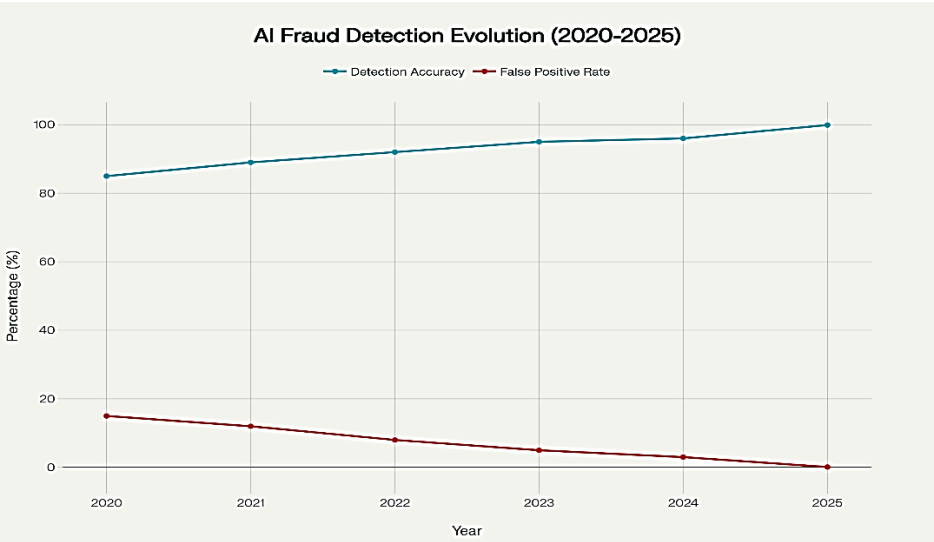
Source: (PrecedenceResearch, 2025)

The global AI in fraud administration market height was deliberate at USD 12.42 billion in 2024 and be necessary to reach about USD 65.35 billion by 2034, extending at a CAGR of 18.06% from 2025 to 2034. The climbing demand for an effective fraud management scheme that drives the progress of the AI in trickery administration retail (PrecedenceResearch, 2025).

According to circulating reports, the growth of the artificial intelligence market is increasing, as the value of the global market reached between 7.5/12.4 USD (Sharma, Chandola, & Bhat, 2024), and 15.6 billion US dollars in 2025 (DMR, Mar 2025), It's expected to reach between 10.5 and 119.9 billion dollars by 2035. This exceptional growth reflects a CAGR of between 10.9% and 25.4%, indicating a growing demand for AI-powered cybersecurity solutions (WISEGUY, Sep 2025).

From another perspective, it is worth noting the importance of artificial intelligence in enhancing trust, as the models (XAI, FDM, TAM) we discussed previously confirm the accuracy of artificial intelligence in detecting fraud among customers in recent years, as the following figure shows:

Fig.11. AI accuracy in detecting fraud compared to traditional methods



Source: Researcher based on (Technavio, 2025)

Recent studies signify that machine intelligence algorithms achieve until 96% veracity

in distinctive between valid and false transactions in commercial movements in actual time for action or event. Some advanced schemes even reach discovery rates of 99.9% while asserting a false certain rate of inferior 0.1% (Chopra & Binwal, 2024, p. 10).

AI-stimulate fraud discovery plans can process in addition to 100,000 transactions per second all along peak opportunities, with an answer period of scarcely 50 milliseconds to make fault-finding determinations. This speedy is essential for preventing fraud before it is complete, lowering the risks to businesses in general and e-commerce platforms exceptionally (Technavio, 2025).

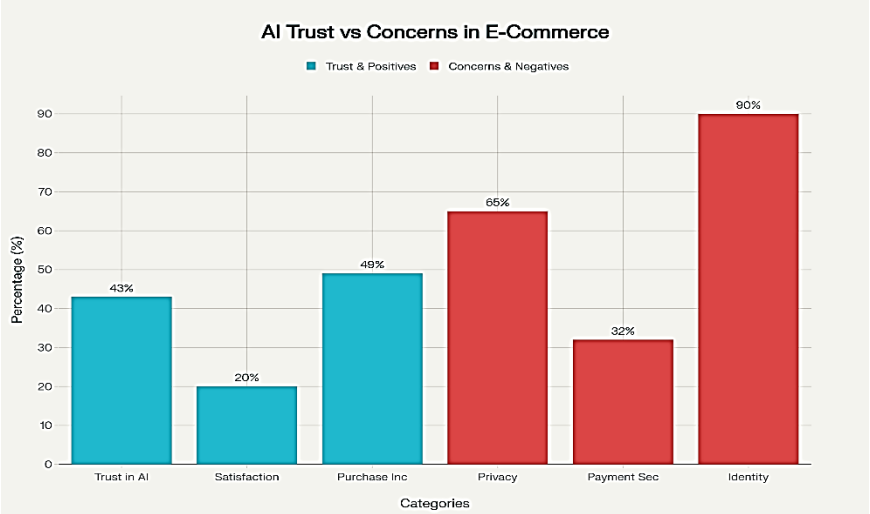
4.4. Enhancing customer trust through AI

Artificial intelligence in the technology industry constitutes an important pole in entrepreneurship, and as is known to various commercial companies, the customer is the basis for building the company's functional strategy, especially those active in the field of e-commerce. It is necessary to work on gaining his trust and providing him with security by maintaining the privacy of his data and transparency in providing services.

Nevertheless, persistent doubts and concerns continue to affect customers interacting

With e-commerce platforms—particularly regarding digital identity theft and the risks inherent to electronic payment services (see Fig.12). These apprehensions have been exacerbated by the rise of artificial intelligence applications that generate highly realistic simulations. Although such technologies offer objective and technical benefits, they also present new challenges, compelling customers to weigh the positive contributions against emerging risks in e-commerce environments (Mani, Tiwari, Ramchandani, Prashant S, & V. Dickson, 10, p. 5029).

Fig.12. Customer Trust and concerns about AI in E-commerce



Source: Researcher based on (agentiveaiq, 2025)

AI plays an important function in building client trust in e-commerce, with studies (Suthar, 2025) signifying that 43% to 61% of customers trust information determined by AI orders, at this moment percentage nearing the level of count on established in-store advice (38%) (agentiveaiq, 2025). This incident indicates a momentous shift in consumers' understanding of AI wherewithal and reliability.

AI-stimulate embodiment programs attain a 20% increase in customer vindication and bettering in adaptation rates ranging middle from two points 10% and 15% accompanying

profitable implementation (Big Sur Ai, 2024). More sedately, AI-stimulate personalized approvals give reason for until 31% of e-commerce revenues, as pieces of advice are more inclined meet what consumers are searching for (Capital One Shopping, 2025).

Analysis of the preceding figure.12, reveals variability in customer confidence concerning the adoption of AI. Notably, the level of customer anxiety associated with impersonation, data protection, and privacy remains elevated in relation to the use of AI on e-commerce platforms. Such findings warrant a critical reassessment of current strategies for integrating machine learning and AI technologies. Additionally, there is a distinct need to reshape customers' perceptions of AI—from a source of apprehension to an effective auxiliary tool.

AI has also contributed substantially to customer satisfaction by improving electronic payment services, reflected in a confidence rate approaching 50%. Despite prevalent skepticism and concerns among users, AI continues to play a pivotal technical role in strengthening trust and enhancing transactional efficiency within digital platforms. These observations are summarized within the context of the following table:

Table 1. The actual value that AI provides in e-commerce platforms to enhance trust

Benefit	Value/Percentage	Impact
Customer Service Cost Reduction	20% reduction	Reducing operational costs
Instant Support Ticket Resolution	80%	Instant resolution with AI
Cart Abandonment Recovery	35% increase	Using AI agents
Response Time Improvement	24/7 instant support	Round-the-clock customer service
Shopping Experience Personalization	72%	Customers prefer personalized experiences
Engagement Increase	32%	Increased customer engagement
Search Accuracy Improvement	Significant improvement	Natural language processing
Return Rate Reduction	Notable reduction	Better purchase decisions

Source: Researcher based on (Team REP, 2025) **&** (agentiveaiq, 2025)

5. RESULTS AND DISCUSSION

The principal conclusions of this research are as follows:

Artificial intelligence plays a pivotal role in fraud detection through technical models that offer predictive explanations and analyses, safeguarding data and privacy and enabling preemptive identification of plagiarism risks.

While customer confidence in artificial intelligence on e-commerce platforms still triggers anxiety—especially concerning digital identity impersonation, which affects up to 99% of customers according to statistics—there is a notable increase in digital awareness and customer proficiency regarding AI interactions.

Artificial intelligence applications empower e-commerce platforms by improving search functionality, enhancing security standards, and delivering intelligent recommendations at rates exceeding 80%, thereby affirming the substantive value AI offers for establishing customer trust.

The prevailing perspective is that artificial intelligence, when viewed in relation to trust, operates as a tool that facilitates the fundamental detection of digital plagiarism and strengthens transparency. Moreover, AI explicates and analyses every user action within

electronic platforms, while providing consulting and advisory support. Foremost, it functions as an intelligent assistant, helping users investigate and optimize their application usage, thereby transforming its role from a potential source of concern in e-commerce environments into a means of enhancing reliability, despite the drawbacks and imbalances that may accompany its adoption.

6. CONCLUSION

In summary, findings from this study indicate that e-commerce platforms have experienced significant digital acceleration in recent years, particularly following the integration of artificial intelligence algorithms into online market transactions. This advancement is nevertheless accompanied by heightened customer concerns regarding plagiarism including identity theft, data breaches, and information transparency as well as financial risks related to electronic payments.

Despite the broad range of applications and models delivered by artificial intelligence to enhance e-commerce services including the development of smart programs and robots which provide consulting and guidance the acceptance level for these innovations in fostering customer trust remains relatively modest.

Accordingly, the following recommendations and suggestions are offered to complement this study:

- Advancing the development of artificial intelligence models to deliver more precise and transparent explanations, thereby enhancing interpretability and user confidence.
- Treating customer trust as a central criterion for cultivating digital awareness, with the objective of challenging prevailing misconceptions that frame AI applications primarily as sources of concern.
- Pursuing in-depth investigations into the technical vulnerabilities and gaps present in e-commerce platforms powered by artificial intelligence algorithms, to ensure sustained innovation and improved system robustness.

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