

A Study the Use of E-Payment Systems Based on Artificial Intelligence

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Electronic payments are rapidly expanding in popularity these days as a result of the hectic pace of modern living. In addition, hackers and fraudsters routinely misuse the personal information funds in a person's bank account. To solve this issue, we must develop an intelligent system that protects individuals' personal data and financial resources. As a result, in the place of human beings, today's machines act think like human beings. Artificial Intelligence (AI) is a key component of electronic payment systems. It offers a novel method of processing electronic payments. This article provides an overview of the prospects, problems, various dangers associated with e-payments, in particular fraud, which is a major threat to the e-payments industry and a major source of financial loss. E-payments, benefits, as well as the future of e-payments are all discussed in the paper

Keywords: E-Payment, Artificial Intelligence, AI Platforms, Payment Methods, of E-Payment Systems

1 Introduction

Artificial intelligence (AI) has digitized payment processing, streamlining online shopping and paying bills through the Internet. According to the 2019 Global FinTech Adoption Index, 25% of small & medium businesses use AI technologies in banking, financing, and financial management. AI-powered digital banking drives a superior customer experience by mimicking the actions of in-person customer service, but faster, with round-the-clock access. Instead of waiting to reach a live person, customers can interact with a virtual assistant or chatbot—supported by natural language processing, powered through intelligent IA.

AI in payment processing is also starting to utilize computer vision, which replaces traditional currency and credit cards. Account information is stored digitally, and customers use smartphones to pay for purchases (i.e., Google Pay, Apple Wallet, etc.). Financial organizations are also starting to utilize computer vision so that customers can open accounts online instead of in a traditional bank.

AI technologies are especially useful for fraud detection. AI uses big data to build user profiles for payment settings, analysing transactional history and past behaviours to establish a pattern. When unusual activity occurs, AI alerts the bank or customer, prompting them to block the account or re-confirm the transaction via text, email or other communication methods. Less time is needed to verify daily transactions as well. Machine Learning (ML) algorithms analyses data to quickly weed out fraudulent activity.

Electronic payment may be described as the payment of goods or services via the internet, which is a subset of an e-commerce transaction that includes electronic payment for products or services sold over the internet. E-payments can be defined in a variety of ways, including as a sort of financial transaction between a buyer & seller that is carried out by electronic communications. E-payment can be defined as any method of transferring money over the internet, according to another definition. The e-payment industry is expanding rapidly, which means that there are more forms of e-payment, as well as more opportunities, risks, & obstacles.

1.1 E-Payment System

E-payment systems are electronic payment methods that do not necessitate checks or currency for transactions. Other names for this system include "electronic payments" and "online payments." Learn more by reading on.

A rise in internet-based banking & shopping has led to an increase in the use of electronic payment systems. Electronic payment systems & payment processing equipment are becoming increasingly popular as the world's technological growth progresses. As online payment methods develop and become more secure, the number of transactions involving checks & cash will decline.

1.2 Electronic Payment System Case Utilize

Every day, the world of payments changes. Payments made through electronic means will predominate in the digital age. In order to keep on top of your competition, you must be aware of current payment trends. The following are the most recent eight digital payment trends to be aware of:

(a) Mobile wallet

It is possible to use a mobile wallet to keep track of your credit and debit card details. Utilizing mobile wallets instead of traditional payment methods is a simple and convenient way to pay for anything. Mobile wallets have reduced the need for cash to pay for goods and services. Consequently, a growing number of FinTech companies are focusing on creating user-friendly e-wallet payment solutions in order

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to ensure a smooth payment experience for their consumers. Mobile wallets come equipped with robust security features to thwart attempts at fraud.

(b) Remittances from abroad

A foreign worker's remittance to his or her family back home is known as a "international remittance." International remittances account for a significant portion of GDP in many countries. Mobile wallets have simplified international money transfers. Transfers are simple, quick, and secure thanks to the software's numerous capabilities. When you use mobile wallets, you have the option of setting preset exchange rates for money transfers. You can also allow your consumers to choose their own exchange rates in advance of their purchase with your company.

(c) Peer-to-peer money transfers

It is possible to transfer money between two parties using a payment e-wallet software that accepts credit or debit cards. Signing up for a P2P payment requires that you have a bank account linked to a credit or debit card. You can begin sending money to your loved ones as soon as your account is set up. There is a wide range in the amount of time it takes to transfer money across peer-to-peer services.

(d) Wearable

Paying via a wearable device is getting increasingly popular. Any gadget that is worn on the body and is used to make payments is considered wearable. Wearable devices include smart watches & fitness monitors. To connect to the user's bank account, these gadgets rely on payment services. These include Samsung Pay, Apple Pay, & Fitbit.

(e) Biometric payment methods

Biometric payments make use of various portions of the body to make payments. Biometric payment technologies like eye tracking, fingerprint scanning, and facial recognition are becoming increasingly popular. Instead of repeatedly inputting the same PIN, you can simply touch the fingerprint scanner to make a payment with biometrics. The payment will be approved once the fingerprint entered is matched with the saved fingerprint. The payment will not be processed if the fingerprint does not match.

(f) Quick Response (QR) codes

Quick Response is the acronym for QR. Your wallet app will let you pay by scanning a QR code on a receipt. It will retrieve the user's payment information & transmit it to them. An online payment terminal can be used to transfer funds at the point of sale.

(g) Payments can be made using contactless technology.

The use of contactless electronic payment devices will not necessitate the exchange of cards or the entry of a PIN. In order to make a payment, customers must bring their device or card closer to the merchant's system when it asks. The bank receives the data after it has been transferred from the magnetic chip.

(h) Payments using AI

As chatbots, speakers, deep learning software & machine learning tools have become more commonplace in the electronic payment sector thanks to AI-based technologies, so has the electronic payment revolution. Consumers may quickly and easily get answers to their questions by using chatbots. Chatbots can also be used to place orders. As well as accepting compensation, speakers can be a good source. To get started, all users need to do is click on the microphone button in the toolbar. The speakers' built-in system will retrieve the information needed to complete the transaction & begin processing it instantly. Businesses have been able to maintain greater openness thanks to the use of AI in electronic payments.

(i) Artificial Intelligence

If a device can replicate human cognition in order to accomplish an objective, it's an AI system. AI can be defined as a machine that can solve problems to reach a specific purpose. If you're looking to make a big influence in the banking and financial industry, this is the way to go. It's reasonable to say that it's attracting the attention of businesses around the world. Paying for goods & services is becoming increasingly complex as new technology and digital transformations take hold across all industries. Digital commerce has already gone beyond desktops and mobile devices. Paying anywhere & anytime will become more commonplace as the Internet of Things (IoT) expands & users become connected at every level—from gadgets to apparel, & even appliances. Automation of payments at all levels will be made possible with the use of AI. The way people engage with technology is changing because to the proliferation of voice assistants like Alexa, Siri, Google Assistant, & Samsung's Bixby. More than ever before, artificial intelligence is working behind the scenes to manage and safeguard financial transactions. It's becoming increasingly difficult for businesses who offer high-ticket items like travel to protect themselves against online fraudsters using machine learning & bots.

1.3 Intelligent Payment Methods

Using data to make informed risk decisions has been a long-standing practice in the payments business. Deep Learning's "bread and butter" application in a payment organization is risk analysis. In the coming years, we may expect a slew of new AI-powered applications to have a substantial impact on the payment & commerce industries.

(a) Chatbots & AI-assisted shopping

Consumers will be able to identify and investigate products more simply with the help of chatbots when they join the realm of commerce. WeChat, for example, is a widely utilized app in China & already provides a platform for stores & payments. AI-powered chatbots will eliminate the limitations of the smartphone's small display & browsing capabilities, allowing merchants who want adaptable & well-integrated payment solutions to access entirely new sales channels.

(b) Natural voice processing

Voice-activated systems like Amazon Alexa & Google Assistant are examples of natural language processing (NLP).side from finding use in household gadgets like Amazon Echo & Sonos speakers, they've also gotten better and smarter as a result. Inputting things into a shopping cart is not difficult or time-consuming when using the "voice channel," but building an entire shopping experience is. New obstacles will arise in the design of an efficient checkout procedure and in the integration of payment.

(c) Smart Data for offers & Marketing

We used to rely primarily on market studies, focus groups, and samples when it came to creating offers & advertising for our clients, saying: measures that were not personalized to the individual. Sample size one enables retailers to better target their clients with AI technology and so open up new avenues for them to contact their customers. Payment services & especially mobile payment services will play a crucial role here, as they currently exist & readily available conduits to process data, generally in real-time.

(d) Facial Recognition Technology & Biometric Identities

In most biometric identification systems, decision-making is aided by AI. With the release of the iPhone X in 2017, Apple introduced a powerful face recognition system, and we may expect to see additional uses for this "contactless identification" in the near future. This will modernize the checkout experience and make online and in-store payments more secure, both online and in-store. Virtualized payment instruments are expected to become more popular as a result of advances in identification technology.

(e) Fraud Deduction

The use of artificial intelligence (AI) is critical in the fight against e-payment fraud. The use of a deep learning system dramatically improves the verification of credit/debit cards during payment processing. In addition, due to the substantial change in e-payment systems (which correlate to needing speedier identification of possibly fraudulent transactions), the importance of fraud detection is driven up. We must use the Machine learning algorithm to discover that correlation of variables led to a fraudulent payment, using the algorithm. Fraudulent transactions are blocked by systems that employ rule-based reasoning. Professional con artists, on the other hand, can identify when their payments are being denied quickly and move on to a new merchant to continue their scam. Because of the power of ML/AI combined with historical data, fraudsters can be detected and countermeasures could be taken without the need for human intervention thanks to algorithm & rule-based logic changes.

(f) The Future of Automation

From the way people invest their money to automating the borrowing process, the impact of AI is felt powerfully across the payments environment. This is a tremendous advancement for those who have previously been disregarded due to difficult difficulties & infrastructures. Artificial intelligence (AI) has the potential to significantly improve operational efficiency for payment organizations. Examples include reducing processing times and human error, as well as offering user insights & increasing automation. Businesses are reimagining and restructuring their operating models and procedures with the help of AI. For instance, it can help firms' process enormous volumes of data to generate financial documents & satisfy regulatory & compliance requirements, procedures that would ordinarily necessitate large numbers of employees performing tedious data processing jobs.

(g) Intelligent & Logical Decision Making

Investment decisions that are based on data are being supported by AI & Machine Learning. Recent years has seen a rise in the use of quantifiable approaches & innovative methods for evaluating huge data. As the volume and accessibility of data grows, it will have a direct impact on how investors use data analysis to make more educated decisions in the long run. With many important businesses employing Machine Learning and big data analytics to accelerate the loan process, the lending industry has the potential to realize huge operational & strategic efficiencies by implementing Machine Learning. New and cutting-edge statistical modelling techniques could be employed in a wide range of industries from retailing to healthcare, & across the financial services industry as a whole. AI-based tools & algorithms have a long way to go before they take over our financial systems, but the financial sector is already using them in a variety of innovative ways. It is at this point in time when AI is generating disruptive technologies for the customer that AI & financial technology come together & merge. Using AI to improve consumer experience in payment & digital transactions is essential. AI is a great development for customers because significant participants in the payment industry are keeping an eye on it.

1.4 Types of E-Payments & Cycles

AI, block chain, machine learning, & cloud computing are all causing havoc in the payment & settlement industry [2]. Among the most major e-payment types and their cycles can be found below, which were established in the real world of e-business. Individuals & organizations alike rely on electronic payment systems to make online purchases in a safe and convenient manner [12].

(a) Payment with a debit or credit card

The most frequent form of electronic payment is using a credit or debit card. Credit cards, debit cards, charge cards are some of the payment alternatives accessible for online transactions. However, credit cards are the most popular method of payment for internet purchases. In terms of online transactions, Visa & MasterCard are two of the most often used credit cards. When a customer uses his or her credit card to make a purchase, the credit card cycle begins. The transaction's data are entered into the merchant's terminal and relayed to the acquirer. To accept credit cards, the merchant must have a

merchant service agreement in place with its acquirer. Additionally, the agreement stipulates that the acquirer will supply a "acquirer owned terminal" of its own. Before the transaction is sent to the card issuer for authorization & settlement, it is sent to the card schema by the acquirer. In accordance with the requirements of the card scheme, card schemes are companies that administer & oversee the processing & clearing of credit and debit card payment transactions. There are many card systems that are responsible for communicating information about a transaction between the buyer and issuer, as well as returning money to the buyer. An example of a card strategy (Visa, MasterCard, American Express). The transaction was transmitted to the card issuer, as that is the credit card holder's bank, after the card scheme amendment. Fig. 1 depicts a credit card payment cycle, as shown.

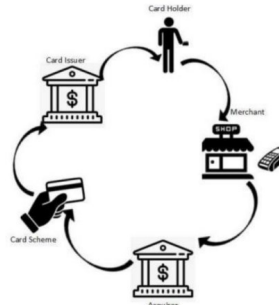


Figure.1 Credit Card Cycle

(b) Mobile Payment

One of the fastest ways to make payments online is to use a credit card or mobile billing information connected to a download of software. You simply want to do this arrangement once, and then immediately make payments through text message requests. This method of payment is the most susceptible to security breaches, notwithstanding its speed. As depicted in figure 2, the mobile payment cycle begins when a consumer uses an application on his phone to pay for goods & services. The customer recharges his application balance and sends a payment request to the service provider over his mobile internet.

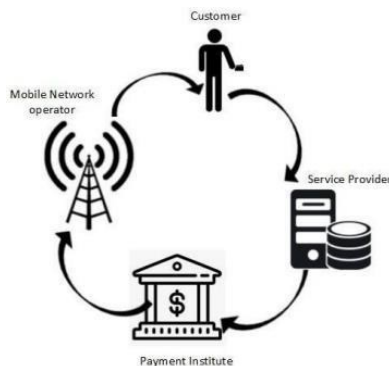


Figure. 2 Mobile Payment Cycle

(c) E-Payment Gateway

A payment gateway connects customers to merchant and service provider networks, allowing them to send and receive money electronically. Providers of electronic payment processing allow consumers to pay through a vast network of agents. As depicted in figure 3, the cycle began when a customer approached one of those merchants & requested payment for a service. As part of the transaction process, the merchant uses an application installed on his terminal to submit e-payment provider payment requests & e-payment supplier sends service provider payments.

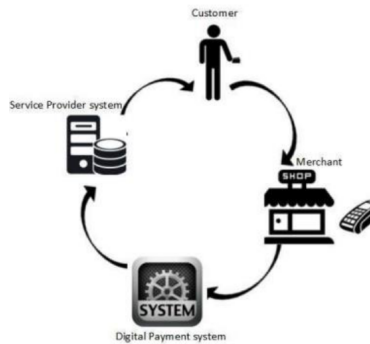


Figure. 3 E-Payment Gateway Cycle

(d) Internet Banking

We can argue that technology has made our lives more convenient. The E-Payments [3] is one of the latest banking, financial, & commercial advancements. It wasn't until the early 1980s that online banking made its debut in New York, the US [5]. You can pay for anything you want with the money in your bank account, making it the safest sort of e-payment method. Using internet banking, you do not require a credit or debit card and only need to enter your bank id & password to accomplish the transactions. There are many ways in which the consumer can pay for goods & services via his mobile banking application or through his banking website, as shown in Figure 4.

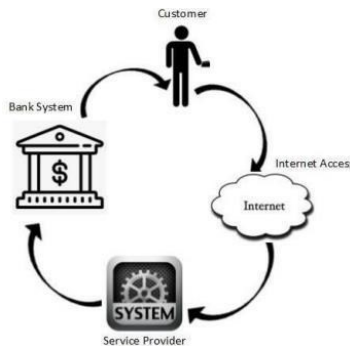


Fig. 4 Internet Banking Cycle

(e) E-Wallet

Prepaid account that keeps track of a user's spending habits [1]. PayPal, Google Pay, & Apple Pay are examples of this type of online payment service. Using prepayments & bank transfers, users can pay for online purchases. More than 200 million people use PayPal on a regular basis. PayPal, in contrast to other e-wallets like Apple Pay, works with any internet-capable device, unlike Apple Pay, that only works with specific smartphone brands. Customers begin the e-wallet cycle when they open a bank account & download their bank's e-wallet application to their mobile devices, as depicted in figure 5. With the use of an e-wallet, a client can pay for goods & services, transfer funds between wallets at the same bank or other financial institutions, receive funds from other e-wallet accounts, & pay their bills.

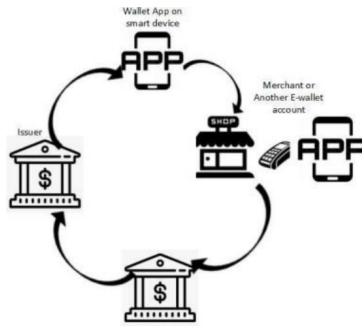


Figure. 5 E-Wallet Cycle

(f) E-Checks

Electronic checks, sometimes known as "E-checks," are becoming common among payment processors. In some cases, you'll need to collect electronic checks from customers. Your bank routing number and account number are entered by the consumer in the online order form. To complete the transaction & transfer the net money into your account, this information is sent to the processor. Electronic checks, or "E-checks," are often required by many payment processing companies. In the online order form, the customer enters your bank routing number & account number. To complete the transaction & deposit your net funds into your account, this information is passed on to the processor for processing. Because e-checks don't work as quickly as credit cards, they have several drawbacks. Because of this, your customers have the option of writing you a bad electronic check. To demonstrate the e-check cycle, see FIGURE 6.

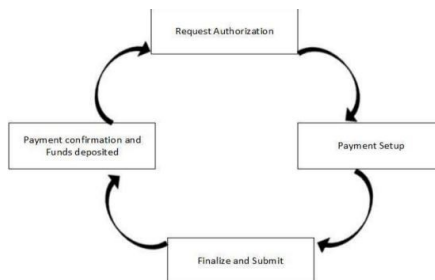


Fig. 6 E-Check Cycle

1.5 Overcomes of Electronic Payment System Problems

E-commerce shoppers are extremely wary of the idea that e-commerce is insecure, especially when it comes to making payments online. An encryption mechanism is typically used by most online payment systems to further enhance security while transmitting sensitive personal and financial information. Online payment fraud is guarded against using a variety of encryption techniques. Online payment transactions require the use of digital signatures to confirm the authenticity of the parties involved.

Determine if the country is classified as a "high risk" one: Orders transported to international destinations necessitate a more thorough examination. If the card or the mailing address is located in an area known for credit card fraud, you should pay greater attention. A Clear Commerce® study found that the top 12 countries for online fraud are Ukraine, Indonesia, Yugoslavia, Lithuania, Egypt, Romania, Bulgaria, Turkey, Russia, Pakistan & Malaysia. Israel also made the list of top 12 countries. As a result, Austria, New Zealand and Taiwan were found to be among the 12 countries with the lowest fraud rates in a survey conducted by the World Economic Forum. IP Geolocation is a service that identifies a user's country of origin. It aids in the maintenance of online payment authentication.

Protection from the risks of the wider internet can be achieved by using a firewall to filter incoming and outgoing traffic according to established criteria. There are three firewall policy actions: Accepted: The firewall allows it.

There was no sign of a failure, and the user was unable to proceed forward. Rejected: The packet was not permitted through, and an attempt was made to notify the sources of the rejection. Firewall policies can be created in two basic ways to reduce external vulnerability while keeping desired machine operation for trusted or particular computers. The following are examples: (a) Using a blacklist; (b) Using a white list

Compare the Country of the Credit Card Issuing Bank with the Country of the Billing Address:. Remember to double-check your invoice's country of origin and billing address. Make that the nation of issue and the country of billing are the same. The fact that minor banks may not have rigorous identification procedures makes this even more critical.

1.6 Benefits of E-Payment Systems

- E-commerce & e-payments are growing increasingly popular with the general population. Taking online payments has become a need for any business in this day and age.
- It's now easier than ever to shop & bank with e-payments. They are helping customers to expand their customer base both domestically and internationally.
- E-payments are more efficient since they are faster.
- It's easy for customers to use e-payments because they are available and convenient at all times.
- There are numerous payment processing solution providers offering various types of solutions, making it simple to link online payment solutions with businesses.
- Clients & merchants alike can feel confident using online payment methods because of their built-in security features & anti-fraud capabilities.
- The advantages of e-payments for foreign transactions are clear, as they are inexpensive, simple and fast. They also tend to be real-time.

2. Related Work

P. C. Lai et al. (2022) During the COVID-19 epidemic, internet usage grew, opening up a new avenue for companies to expand their business horizons. This new channel, however, has its own set of challenges for users. Using machine learning inference, this study aims to examine the relationship between these features and the adoption of e-payment services. E-payment usage can be predicted using an AI-based analytic pipeline that takes into account a variety of dependent variables. Hybrid AI and a tree algorithm helped identify the most significant things in the analysis pipeline, & relationships between them were discovered. The findings show that e-payment system utilization is influenced by factors such as expectations, enabling conditions, user attitudes, & performance expectations. Those under the age of 25 need a gamification strategy to adopt e-payment, while those beyond the age of 40 need social aid [1].

S S Latha. Et al. (2022) (2022) It's been increasingly popular in the last decade to provide visually impaired people with customized e-service applications. Additionally, they face a variety of difficult daily tasks, such as paying for goods or making an online payment. To make e-payment services more accessible to the blind, a new e-service application is discussed in this article review. Using his software, they are able to pay their bills quickly and easily without relying on human assistance. If you're using voice assistance, you'll scan the QR code and then pay. The user can begin the payment process by writing the desired amount and then pinning it to the display. The characters are recognized by the use of image processing tools. Voice help will notify the user that the payment was successful once the transaction is complete [2].

Nadir Kamel Benamara et al. (2021) E-Payment systems have a huge security problem. PINs, passwords and cards are among the many ways in which these systems are protected from illegal users, or "hackers," as they are referred to in the industry. These hackers, on the other hand, may be able to get beyond this defense by using other methods. There are many ways to prevent hackers from getting into the E-payment system, however there are still some cases when an illegal user can get in by taking a genuine user's payment card. Facial biometry has become a highly developed and accurate technology, especially in the recent decade, as AI technologies, such as deep learning, have been adopted for face identification. In order to improve the security of an E-Payment system, we suggest using deep learning-based facial biometry in conjunction with RFID cards. This ensures that a user can only access the E-Payment system if he or she is physically there and using his or her RFID card. Face authentication models that use deep learning were tested on MUCT & CASIA Face-V5 datasets to select the best one for our proposed secure E-Payment system, with top verification rates of 99.90% & 99.26%. There are two versions of this system: the first one uses a personal computer (PC) & second one uses an embedded system (Raspberry Pi 3) [3].

Yiming Li. et al. (2021) This study focuses on e-payment system anomalies in the actual world. In an E-payment system's temporal interaction graph, nodes represent users, & edges represent the multidimensional transaction sequences that connect them. A node classification challenge is used to identify unauthorized users in the E-payment network using recently developed advanced temporal graph representation learning algorithms. E-payment network dynamics may be explained using Graph Temporal Edge Aggregation (GTEA), a representation learning approach for temporal interaction graphs. Instead of aggregating all of the nodes' interactions throughout time, the network's edges are taught to replicate their own unique temporal dynamics. It can model relationships by collecting patterns of interaction between two persons utilizing different traits. Additionally, a self-attention mechanism that focuses attention to significant neighbors while filtering out long-tail noise is incorporated into the architecture. When used to an E-payment network, GTEA can learn to distinguish between varied roles of users by combining interactive temporal dynamics with multi-dimensional relational interdependence in a network. There are three E-payment datasets in which GTEA beats existing state of the art models on node categorization tasks [4].

Dilip Khadke (2020) As a result of the customer analysis, a number of firms are re-evaluating & modifying their products & services. The ease with which products, services, & payments can now be accessed via smartphones and the internet has revolutionized the way consumers shop and pay for things online. Because individuals needed time to become familiar with and trust the new online business, the ecommerce industry began with Cash on Delivery. Following a period of orientation with the company,

the corporation began presenting a variety of online payment options. Debit & credit cards, online banking & digital wallets are just some of the financial instruments made available to consumers thanks to E-Payment. Electronic payments have made it easier for buyers and sellers to deal with each other, but they've also raised questions and concerns about security and privacy, two major concerns for internet users. As a result, cash transactions have declined in popularity. With the return schemes offered by mobile wallet providers like Pay tm, PayPal, Mobikwik, and the likes, enterprises are seeing a huge increase in the number of customers using e-payment methods. Organizations, governments, corporations and individuals can all benefit from e-payments, which allow them to eliminate cash and make cashless payments for a wide range of services. Food & Beverages; Tickets for events, cinema, rail, bus, air, and so forth.; Local Public Transportation (Uber, Ola, Taxi, Rickshaw, etc.); Goods; Services (Apparels, electronics). One of the most popular payment platforms in India is PayTM.com, which processes millions of transactions every day. Founded in 2010, this platform allows users to transfer money in a matter of seconds. It's a service that offers a digital wallet for storing money.. MobiKwik 25 million users are said to be linked to more than 50,000 merchants via this unaffiliated mobile payment network. In 2009, Gurugram was created. It has a digital wallet and mobile payment options. If you want to pay your bills or reload your phone using MobiKwik, you can use your credit card, net banking, or even a cash on delivery service. Recently, MobiKwik has partnered with both major and small-time offline shops, including grocery stores, restaurants, and more. MobiKwik has more than 10 million users worldwide. PAYPAL As an alternative to traditional payment systems, an American company operates in a global online payments system that facilitates online money transfers. PAYPAL is a subsidiary of EBay. PayUMoney Customers may save their cash and utilize it to pay for goods and services through this Gurgaon-based company that provides online payment solutions. Offering one-touch checkout and discounts / cash back offers on every transaction is one way they differentiate themselves from the competition. BHIM The National Payments Corporation of India has developed a smartphone app for this purpose. Payments can be made without a bank account or even the internet, thanks to the Unified Payment Interface (UPI). All it takes is a phone number, an Aadhar card number, a name, or a bank's UPI ID to send or receive money in any language [5].

Nasr et al. (2020) Because of the exponential growth of e-business, e-payments are becoming increasingly important for all online businesses. As a result of electronic payments, it became easier for people to survive. Paying for your purchases has never been more entertaining or convenient thanks to a variety of formats and devices. E-payments must be integrated with e-business for it to be effective. With multiple methods and prospects in the field of electronic commerce, e-payments also confront a number of threats & challenges. that must be addressed in order to find answers. An overview of e-payments possibilities, challenges and various hazards for e-payments is presented in this article, with fraud being the most serious threat to the e-payments industry, resulting in huge losses. E-payments, their benefits, & future of e-payments are all discussed in this study [6] .

Anas Najdawi et al. (2019) As the United Arab Emirates moves toward a knowledge-based economy and e-commerce transaction development, this paper will shed light on the digital transformation of payment methodology in the UAE. The purpose of this article is to assess different established and emerging e-payment technologies & their acceptance especially in the cities with active change-programs toward smart cities. A quantitative analysis based on demographic factors will be used to examine e-payment end-users. In this article, we hope to shed light on the factors that influence the adoption of digital payment processes in a variety of industries, based on a socio-technical approach and matched with the most recent trends in FinTech services [7].

K. Srinivas et al. (2020). (2020). For business intelligence, web usage mining is done to analyse the behavior of users and customers (BI). Organizations are increasingly relying on electronic devices to make payments, so this trend is expanding at a rate that hasn't been seen before. Finding out how your customers use the internet might help you make smarter business decisions. Especially for companies who want to abuse or influence their customers' behavior through the use of ground truth. Web usage mining drew on the expertise of a large number of researchers. In contrast, real-world data sets yield more helpful results. In light of this, we came up with a framework for web usage mining that utilizes an EPUD algorithm. Data from the RBI's electronic payment indicators dataset has been synthesized into server logs that can be used for web usage mining. In our experiments, we discovered that customers use e-payment systems in a certain way, and our algorithm mines the server logs to find out how they do it.

The information in this study sheds light on how different payment indicators use electronic payments in general [8].

Dennis Asante et al. (2019) Many developing countries' economies have benefited greatly from the introduction of electronic payment systems. However, it has gotten increasingly difficult to assess them over time. E-payment systems in Ghana were evaluated in this study using a two-stage multi-criteria decision analysis (MCDA). The contribution scores of several performance criteria for e-payment systems were calculated using the AHP approach. In order to rate the e-payment systems, we used the Probability Linguistic-TOPSIS technique (PL-TOPSIS). We found that cost-effectiveness was the most important of the six metrics used in this study. Performance rankings showed credit/debit card to have a higher score than ATM, online banking and E-zwitch in terms of overall performance. We provide insights into how AHP and PL-TOPSIS methodologies can be used to evaluate the performance of e-payment systems by examining the literature [9].

Rahaf Alhafi et al. (2019) Online shopping is the process of retrieving product details from a retailer's website and then paying for those items with a credit card over the Internet. As a result of entering out credit or debit card information on an electronic purchase order, fraudsters or hackers may be able to access this information. Online purchasing is plagued by identity theft, phishing, & pharming. E-commerce trading has led to a wide range of user-friendly applications around the world. Since online buying and ticket booking have become increasingly popular, new technology has emerged. Customers and banks alike are concerned about Debit or Credit card fraud and personal information protection, especially when transferring money or purchasing online. In this research, a QR Code-based E-Payment & Transaction technique is offered as an alternative. Using the Unified Modeling Language (UML), the proposed study focuses on developing an app for Android-powered smartphones [10].

Selfira et al. (2018) the purpose of this paper is to learn about the differences in the Future Electronics Payment System Model. We discuss various electronic payment systems, security concerns, & future of mobile payments & e-money. The modernization of the payment system through the use of e-money has taken place in a number of countries around the world. Electronic Money is a type of money that does not require paper bills to be exchanged. It serves as a non-cash payment method for merchants, not for the electronic money issuers themselves. Secondary data from the Bank of Indonesia's 2011-2017 Annual Report is used. A comparative method is used in this type of paper. Non parametric Analysis of Variance is the data ANOVA. It turns out, based on these data, that there are considerable variations in payment models. This shows that each payment model has substantial distinctions, & payment system employing e-money is anticipated to develop in the future. The modernization of the payment system through the use of e-money has taken place in a number of countries around the world [11].

Trihastuti Yuniati et al. (2018). [12] There has been a dramatic increase in the number of people purchasing online in recent years. With the ever-growing popularity of online purchasing, debit or credit card theft and personal data protection are key problems.. Online shopping is vulnerable to phishing and identity theft. Personal information such as usernames, passwords, and credit card numbers can be stolen by phishing scams. A credit card payment system based on visual cryptography has been proposed in this paper. For example, visual cryptography is applied to the merchant's registration captcha, the credit card details transmitted to the Card Provider Directory Server via the Merchant Plug-In, & one-time password contained in the Quick Response Code required to approve a payment transaction. E-payment security, particularly in terms of authentication, authorization, & confidentiality, is a primary goal of this approach Using this strategy, the retailer only receives minimal information about the customer's credit card, preventing phishing & identity theft [12].

Siti Aishah Mohamad et al. (2017) An rising number of people around the world now use electronic payment systems (e-payments). E-payment systems, in addition to boosting convenience, also improve efficiency in the delivery of financial services to the "un-bankable" populace, particularly micro-entrepreneurs. Malaysia has seen a dramatic growth in the number of e-payments made per capita, from 14.3 transactions in 2003 to 82 in 2015. Financial institutions, notably microfinance institutions, must play a role in promoting the widespread use of e-payments among small businesses. Micro-enterprises comprise 77% of Malaysia's SME population as of 2011, according to the country's SMEs Development Agency. The introduction of an epayment system can increase financial inclusion by focusing on micro-

enterprises. The purpose of this study is to examine the e-payment services available to microenterprises by analyzing the adoption of Muslim micro-entrepreneurs & making recommendations for the e-payment adoption. For this purpose, the study examines the existing literature on the adoption of e-payments and underlines the relevant challenges, particularly for the micro-entrepreneurs. In this research, the outcomes are intended to add to our understanding of the adoption of digital financial services, notably e-payment, and will help service providers to continually enhance their services.

Verify the authenticity of your credit card by contacting the bank that issued it. The issuing bank can be contacted to validate general account information if an online merchant has any concerns or questions regarding an order. To ensure that the card is not stolen, this is the only way to do it. The Bank Identification Number (BIN) is the first six digits of the credit card number used to identify the issuing bank (BIN).

If you have any doubts, request more identification: When it comes to online shopping, customers are concerned about privacy & speed, but it is necessary to collect enough information about the buyer to verify their identity. The customer's name, credit card number, & expiration date are not sufficient. If a merchant has any doubts, they should call them or ask for a photo ID to be sent [13].

3. Conclusion

Artificial Intelligence (AI) tools & algorithms have taken over our banking institutions. Innovative, creative, & smart ways of using technology are being developed in the financial sector. Disruptive technology for consumers in financial institutions is being created by AI. An important area for successfully integrating AI facilities to promote customer experience is the payment & digital transaction process. For example, PayPal, Amazon's Kindle and MasterCard & Google are among the major AI payment industry firms engaged in a customer-satisfaction-focused approach to payment processing. In this work, we have sought to give an integrated picture of e-payments. We have discussed about their types & returns, obstacles and risks they confront, as well as the future of e-payments. This was done in an effort to present a comprehensive picture to people with an interest in electronic payments.

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