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Improving Tourist Safety and Security with Electronic Card Systems in Ho Chi Minh

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Abstract

Tourism plays a significant role in the global economy, with millions of people traveling to various destinations each year. However, ensuring the safety and security of tourists has become increasingly important in light of emerging threats and challenges. This abstract discusses the potential of electronic card systems as a means to improve tourist safety and security. Traditional methods of ensuring tourist safety, such as physical presence of security personnel and manual documentation processes, have limitations in terms of effectiveness and scalability. Electronic card systems offer a promising solution by leveraging technology to enhance safety measures and streamline security procedures. Electronic card systems can be implemented in various forms, such as smart cards or wearable devices equipped with advanced features. [1] These cards can serve multiple purposes, including identification, access control, and emergency assistance. By incorporating biometric authentication, such as fingerprint or facial recognition, electronic card systems can provide a higher level of security, ensuring that only authorized individuals have access to certain areas or services.

Keywords: technology, application, tourism, digital, safety.

1. Introduction

Ho Chi Minh City, commonly known as Saigon, is a vibrant and popular tourist destination in Vietnam. With its rich history, cultural attractions, and bustling urban environment, the city attracts millions of visitors each year. However, ensuring the safety and security of tourists has become a pressing concern for both local authorities and the tourism industry. In this introduction, we explore the potential benefits of implementing electronic card systems to enhance tourist safety and security in Ho Chi Minh City. The safety and security of tourists are paramount in maintaining a positive tourism experience and fostering trust in a destination. While traditional security measures, such as the presence of law enforcement and security personnel, contribute to maintaining order, they may have limitations in effectively addressing emerging threats and challenges. Therefore, exploring innovative solutions like electronic card systems can provide a more comprehensive and efficient approach to safeguarding tourists. Electronic card systems encompass various technologies, including smart cards and wearable devices, that can be utilized to enhance safety measures and streamline security procedures. These systems offer a range of functionalities, such as identification, access control, and emergency assistance, all of which can contribute to a safer and more secure environment for tourists. By implementing electronic card systems in Ho Chi Minh City, authorities can ensure that tourists have a reliable means of identification, reducing the risk of identity theft or fraud. The cards can be equipped with biometric authentication features such as fingerprint or facial recognition, further enhancing security and preventing unauthorized access to sensitive areas or services. Moreover, electronic card systems enable centralized information management, allowing authorities and tourism operators to access important data in real-time. This includes personal details, travel itineraries, and emergency contact information of tourists. [5] In the event of an emergency or security incident, this information can be readily accessed, enabling a swift and effective response. It also facilitates coordination between various stakeholders, such as law enforcement agencies, medical services, and tourism operators, resulting in a more efficient and coordinated approach to handling emergencies. Additionally, electronic card systems can be integrated with existing surveillance and monitoring systems in Ho Chi Minh City. Real-time tracking of tourists within designated areas can help detect and respond to any suspicious activities promptly. This proactive approach enhances the overall security of tourists and provides a deterrent to potential threats.

2. Literature review

The tourism industry has experienced significant advancements due to the integration of Information and Communication Technologies (ICTs) over the past three decades. The introduction of Computer Reservation Systems (CRSs) in the 1970s, Global Distribution Systems (GDSs) in the late 1980s, and the widespread use of the

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Internet in the late 1990s have revolutionized operational and strategic practices in tourism (Buhalis and Law, 2008). This continuous progress has led to the elimination of intermediaries and the establishment of direct connections between customers and suppliers Romain et al., (2010). As a result, customers now have direct access to a wide range of offerings within the tourism industry. ICTs, especially the Internet, have played a crucial role in transforming the global tourism industry since the 1980s (Buhalis, 2003). Today, the Internet and ICTs are integral to all operational, structural, strategic, and marketing aspects of the industry, facilitating seamless interactions among suppliers, intermediaries, and consumers worldwide Egger and Buhalis, (2008). The significance of ICTs in the tourism industry cannot be overstated. Their effectiveness is rapidly enhancing and improving various sectors of this service industry. The World Tourism Organization (WTO) has reported that countries lacking ICT infrastructure will struggle to keep pace with the tourism growth achieved by nations that have embraced ICT significantly. The travel and tourism industry has emerged as a major global economic contributor, generating over 198 million jobs worldwide and accounting for 10% of the gross national product (GNP) of many countries in 2002. Projections from the World Travel and Tourism Council WTTC, (2005) indicate that this rapidly expanding industry, considered the largest in the world, will create 249 million jobs and contribute 10.6% of the GNP in various countries across the globe Paajarvi, (2004). In summary, the integration of ICTs has revolutionized the tourism industry, enabling direct connections between customers and suppliers and transforming operational and strategic practices. The Internet and ICTs have become fundamental to all aspects of the industry, fostering global interactions and enhancing efficiency. Countries without robust ICT infrastructure risk falling behind in the fast-paced growth of the tourism sector. Furthermore, the travel and tourism industry's substantial economic impact and job creation highlight its significance on a global scale. ICTs have enabled the development of online booking platforms and reservation systems. Travelers can now easily search, compare, and book flights, accommodations, tours, and other travel services through online platforms and websites. This has significantly streamlined the booking process, allowing travelers to make reservations in real-time and reducing the reliance on traditional travel agencies. The proliferation of mobile applications has revolutionized the way travelers access information and services. Travel-specific apps provide real-time updates on flight schedules, hotel availability, local attractions, and navigation assistance. These apps enhance the convenience and personalization of the travel experience, allowing travelers to access relevant information and services directly from their smartphones or tablets. VR and AR technologies have transformed the way travelers explore and experience destinations. [4] Virtual tours and immersive experiences allow travelers to virtually visit attractions, landmarks, and hotels before making their travel decisions. AR applications enhance the on-site experience by providing real-time information and interactive elements, such as virtual tour guides or language translation tools. ICTs have facilitated the implementation of CRM systems in the tourism industry. These systems enable businesses to manage customer data, track interactions, and personalize customer experiences. By understanding individual customer preferences and behaviors, tourism businesses can provide targeted recommendations, personalized offers, and tailored services, fostering customer loyalty and satisfaction.

3. Research Methodology

This research study utilizes a combination of survey data, library resources, and statistical data derived from previous research sources. Additionally, interviews were conducted with pertinent individuals, including employees of tourism departments and other stakeholders. The study focuses on the significance of several key factors, namely convenience, location design, facilities, service quality, and electronic security.

4. Research result and discussion

The survey results on the use of electronic payment cards in tourism reveal significant and notable benefits. Firstly, using electronic payment cards provides convenience and safety for travelers. Instead of carrying large amounts of cash, tourists can easily make payments for various travel services worldwide at card-accepting locations.

Table 1. Categories of e-tourism

Factor	Codes	Variables
	CS1	easily make payments

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Convenience and Safety	CS2	cost saving
	CS3	safety for travelers
Expense control	EC1	effortlessly track
	EC2	manage their expenses
	EC3	detailed transaction records
	EC4	amount spent during the trip
International accessibility	IA1	widely accepted globally
	IA2	make purchases in different countries
	IA3	without the need for currency exchange
Security and insurance	SI1	PIN codes and fingerprint sensors
	SI2	provide complimentary travel insurance or purchase protection

Moreover, using electronic payment cards helps travelers effectively control their expenses. Detailed transaction records on the card statement offer a clear overview of the amount spent during the trip. This enables travelers to manage their budgets more tightly. Furthermore, using electronic payment cards in tourism also brings special rewards and benefits. Many travel-specific electronic payment cards offer promotional programs, reward points, or cashback for cardholders. This provides additional incentives for travelers to use cards for travel-related transactions. Electronic payment cards also offer international accessibility for travelers. With wide acceptance globally, travelers can easily access services and make purchases in different countries without the need for currency exchange. Lastly, using electronic payment cards in tourism provides higher security and insurance benefits. Electronic payment cards often come with security features such as PIN codes and fingerprint sensors, protecting travelers' personal information and minimizing the risk of cash loss. Additionally, many card types provide complimentary travel insurance or purchase protection when used for payments. In summary, the survey results demonstrate that using electronic payment cards in tourism offers significant benefits such as convenience, safety, expense control, rewards, international accessibility, security, and insurance. These findings support the development and widespread application of electronic payment cards in the tourism industry.

Figure 1. E-tourism Satisfaction
Source: Ibrahim Mohamed and Leila Moradi (2011)
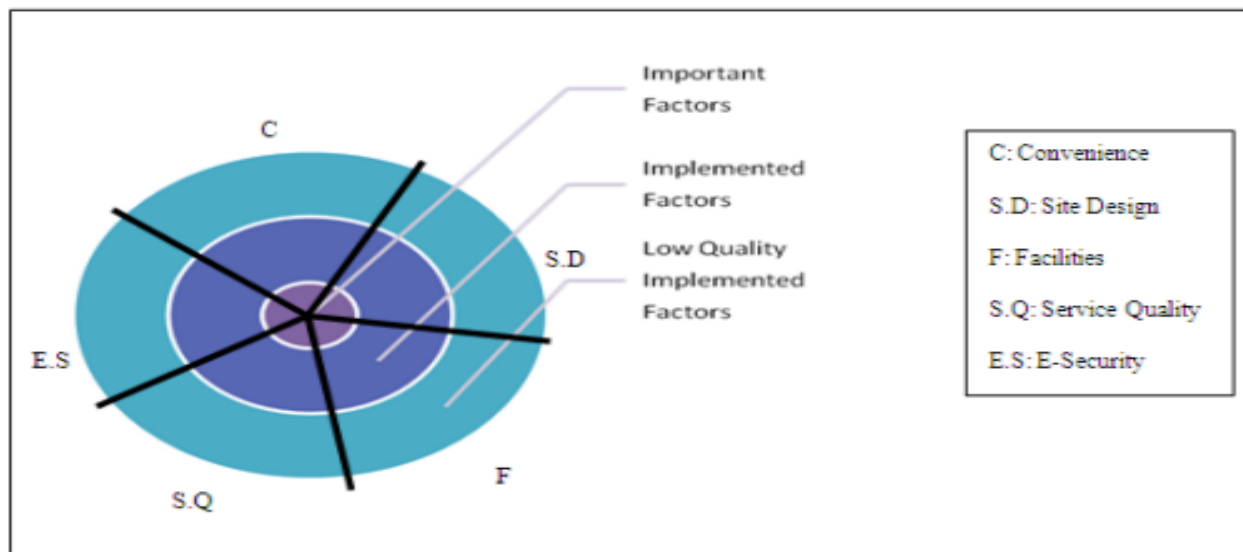
E-tourism satisfaction refers to the level of contentment or fulfillment experienced by individuals when using electronic platforms or digital technologies for their travel-related activities. It focuses on the overall satisfaction of tourists with the electronic services and tools available to them during various stages of their travel journey, including planning, booking, information search, communication, and post-trip experiences
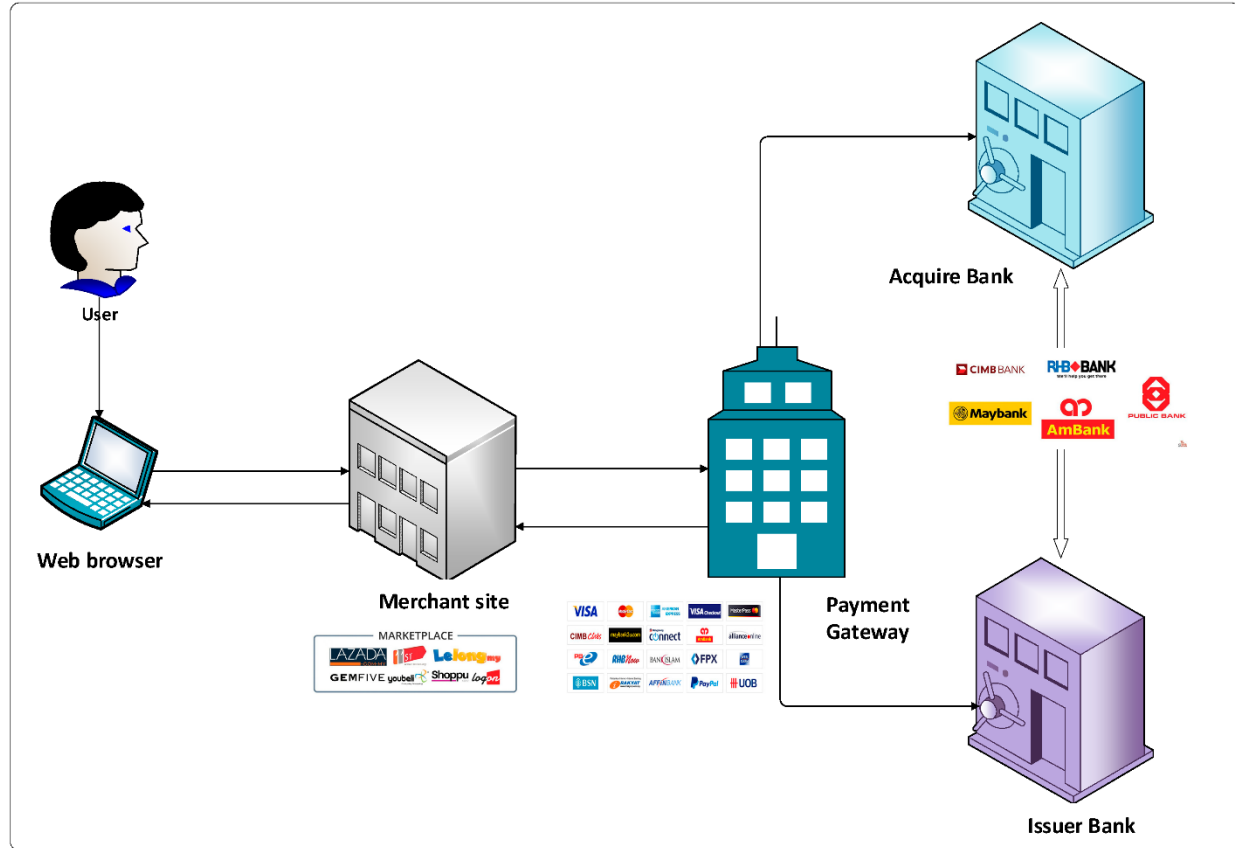

Figure 2. Model of the E-payment system

Source: An Efficient Secure Electronic Payment System for E-Commerce (2020)

The payment system should employ robust encryption techniques to protect sensitive data, such as credit card information, during transmission. Secure Socket Layer (SSL) or Transport Layer Security (TLS) protocols can be used to establish a secure connection between the buyer's device and the payment gateway, ensuring the confidentiality and integrity of the data. To enhance security, the system can utilize tokenization, where sensitive information is replaced with unique tokens. [3] This way, even if the data is intercepted, it will be useless to potential attackers. Implementing two-factor authentication adds an extra layer of security by requiring users to provide two forms of identification for completing a transaction. This can include something the user knows (e.g., password) and something the user possesses (e.g., a unique code sent to their mobile device). The system should incorporate advanced fraud detection mechanisms to identify and prevent fraudulent activities in real-time. This can include monitoring for suspicious transaction patterns, IP geolocation, velocity checks, and integrating machine learning algorithms to identify anomalies and flag potential fraudulent transactions. An efficient payment system should ensure quick and reliable processing of transactions, minimizing delays and providing immediate confirmation to users. Slow or unreliable processing can lead to frustration and potential customer abandonment. A user-friendly interface enhances the overall user experience and encourages smooth navigation through the payment process. Clear instructions, intuitive design, and responsive layouts contribute to user satisfaction and minimize errors during payment.
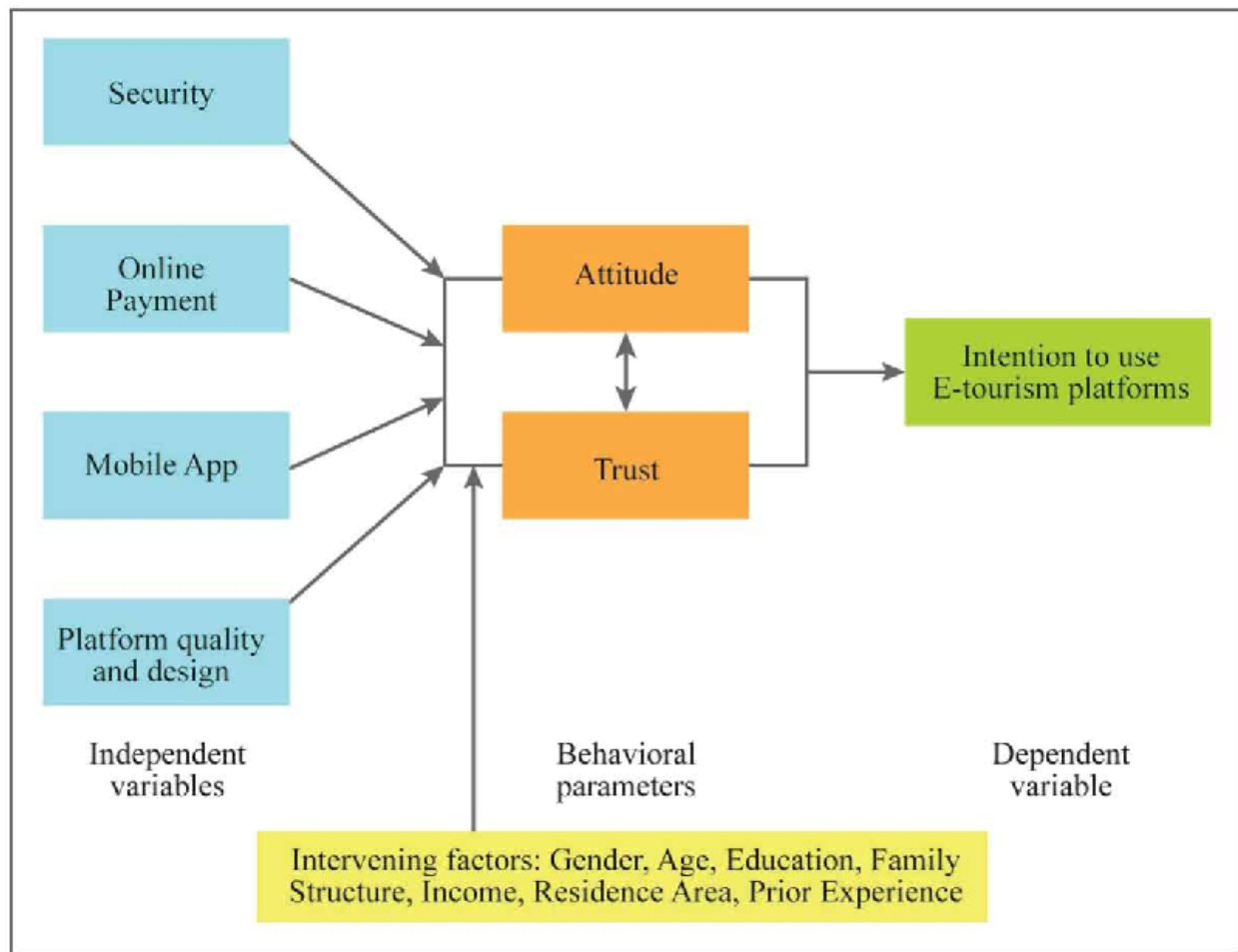
Figure 3. ETAM The conceptual framework

Source: International Journal of Tourism and Hospitality Management in the Digital Age (2021)

The ETAM (Electronic Travel Adoption Model) is a conceptual framework that helps explain and understand the factors influencing the adoption and usage of electronic travel services by consumers. It is specifically designed to analyze the adoption of e-commerce technologies in the tourism and travel industry. This construct pertains to how consumers perceive the usefulness and advantages of utilizing electronic travel services. It encompasses various factors, such as convenience, time savings, access to information, and the ability to easily compare prices and options. Another construct focuses on consumers' perception of the ease and simplicity when using electronic travel services. It includes factors like user-friendliness, intuitive interfaces, clear instructions, and the minimal effort required to complete transactions. [7] The consumer's perception of potential risks associated with electronic travel services is another crucial aspect. These risks may involve concerns regarding security, privacy, fraud, and the reliability of online services. If consumers perceive the risks to outweigh the benefits, it can act as a hindrance to adoption. Trust, a critical construct in the ETAM framework, refers to consumers' belief in the dependability, security, and integrity of electronic travel services and the entities providing them. Trust is established through factors such as reputation, security measures, transparent policies, and positive experiences.

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5. Recommendation

The introduction of electronic access cards in hotels, resorts, and popular tourist attractions will ensure secure access to restricted areas, exclusively permitting authorized individuals such as hotel guests and staff. This stringent control mechanism effectively mitigates the risk of unauthorized entry, thereby bolstering overall security. Secondly, the implementation of smart transportation cards for tourists in public transportation systems, including buses and trains, offers the advantage of convenient and secure travel throughout the city. These cards, loaded with credit that can be easily topped up, facilitate seamless and reliable transportation. Furthermore, a centralized system can monitor card usage and aid in the expedient recovery of lost cards, if necessary. [6] Thirdly, the inclusion of emergency contact information on the electronic cards, specifically the contact numbers for local police, medical services, and tourist helplines, ensures swift access to assistance during emergencies or safety concerns. This provision guarantees that tourists can promptly avail themselves of the necessary support. Moreover, the integration of GPS tracking capabilities into the electronic cards enables tourists to share their precise location with designated authorities or emergency services when required. This feature proves invaluable in efficiently locating lost or distressed tourists, thus enabling timely and effective assistance. In addition, the development of a dedicated mobile application that seamlessly integrates with the electronic card system serves as a comprehensive resource for tourists. This mobile app can provide real-time information on tourist attractions, safety guidelines, emergency alerts, and direct communication channels with local authorities.[2] By enhancing tourists' awareness of safety and security measures, this application contributes to an improved overall safety environment. To safeguard the privacy and security of tourist information stored in the electronic card system, the implementation of robust data management protocols is crucial. Strict access controls and encryption measures should be enforced to prevent unauthorized access or misuse of personal data, ensuring the integrity of the system. Furthermore, conducting public awareness campaigns to educate both tourists and locals about the advantages and utilization of the electronic card system is essential. By highlighting the system's benefits, such as enhanced safety and convenience, wider adoption among tourists can be encouraged. This widespread usage consequently leads to improved overall security levels. Lastly, fostering collaboration between electronic card system providers, local authorities, and law enforcement agencies is paramount. This partnership facilitates prompt responses to security incidents, enables effective monitoring of tourist areas, and encourages the seamless exchange of relevant information. By maintaining a safe environment, this collaborative effort ensures the well-being of tourists. By implementing these comprehensive measures, Ho Chi Minh City can significantly elevate tourist safety and security, providing visitors with an exceptional and secure experience throughout their stay.

6. Conclusion

The implementation of electronic card systems in Ho Chi Minh City offers significant potential for enhancing tourist safety and security. By introducing electronic access cards in hotels, resorts, and popular tourist attractions, authorized access to designated areas can be ensured, preventing unauthorized entry, and bolstering overall security. Additionally, the adoption of smart transportation cards enables convenient and secure travel throughout the city, while GPS tracking capabilities and emergency contact information on the cards facilitate prompt assistance in case of emergencies or safety concerns. Moreover, the development of a dedicated mobile application integrated with the electronic card system provides real-time information, safety tips, emergency alerts, and direct communication channels with local authorities, thereby promoting safety and security awareness among tourists. Robust data management protocols safeguard the privacy and security of tourist information, while public awareness campaigns educate both tourists and locals about the benefits and usage of the system, encouraging wider adoption and improving overall security. Furthermore, fostering collaboration between electronic card system providers, local authorities, and law enforcement agencies enables swift responses to security incidents, effective monitoring of tourist areas, and the sharing of pertinent information, maintaining a safe environment for tourists.

By implementing these comprehensive measures, Ho Chi Minh City can elevate tourist safety and security, offering visitors a secure and enjoyable experience throughout their stay. The integration of electronic card systems serves as a vital step towards a safer and more secure tourism environment in the city

Conflict of interests

None

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Acknowledgement

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