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EVALUATING E-COMMERCE ENGAGEMENT FACTORS IN SAUDI ARABIA: FINANCIAL LOSS, IDENTITY THEFT AND PRIVACY POLICIES

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ABSTRACT

Purpose: The purpose of this study is to investigate the influence of financial loss, identity theft, and privacy protection policies on the willingness of tourists in Saudi Arabia to engage in e-commerce.

Theoretical framework: This study examines Saudi Arabian visitors' use of e-commerce, highlighting the consequences of financial loss, identity theft, and privacy laws. The study employs Smart PLS and structured questionnaires, underpinned by a theoretical framework of trust and security, to uncover heightened fears over online identity theft. Policies protecting privacy become essential, boosting customer confidence and promoting e-commerce. The study adds to the scant amount of information in this field by emphasising the role that regulations play in maintaining transaction security and promoting user confidence.

Design/Methodology/Approach: This study used a quantitative research methodology to examine the relationship between financial loss, identity theft, privacy protection policies, and the willingness to engage in e-commerce in Saudi Arabia. Structured questionnaires were used to gather data, and Smart PLS was used to analyse the results using Structural Equation Modelling (SEM).

Findings: The study reveals that Saudi Arabian tourists express more concern about online identity theft than financial loss. Privacy protection policies play a pivotal role in enhancing their trust and participation in e-commerce, underscoring the importance of regulatory measures for ensuring user confidence and online transaction security.

Research, Practical & Social implications: This study highlights the unique worries that Saudi Arabian internet customers have, prioritising identity theft over money loss. Policies protecting privacy become an important middleman that is essential to fostering trust and promoting e-commerce. The findings encourage more investigation into the fundamental elements influencing user choices in study. Practically speaking, companies may improve tactics by giving strong privacy safeguards top priority. In order to promote a safe and reliable e-commerce environment that benefits customers and the expansion of Saudi Arabia's online market, it is socially vital to advocate for explicit privacy legislation.

Originality/value: This study is a pioneering attempt to investigate Saudi Arabian tourists' e-commerce behaviour. It adds to the scarce body of knowledge in this area by illuminating the importance of privacy protection policies in fostering consumer trust.

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AVALIANDO FATORES DE ENVOLVIMENTO NO COMÉRCIO ELETRÔNICO NA ARÁBIA SAUDITA: PERDAS FINANCEIRAS, ROUBO DE IDENTIDADE E POLÍTICAS DE PRIVACIDADE

RESUMO

Objetivo: O objetivo deste estudo é investigar a influência de perdas financeiras, roubo de identidade e políticas de proteção de privacidade na disposição dos turistas na Arábia Saudita de se envolverem no comércio eletrônico.

Enquadramento teórico: Este estudo examina a utilização do comércio eletrónico pelos visitantes da Arábia Saudita, destacando as consequências da perda financeira, do roubo de identidade e das leis de privacidade. O estudo utiliza Smart PLS e questionários estruturados, sustentados por um quadro teórico de confiança e segurança, para revelar receios acrescidos relativamente ao roubo de identidade online. As políticas que protegem a privacidade tornam-se essenciais, aumentando a confiança dos clientes e promovendo o comércio eletrónico. O estudo contribui para a escassa quantidade de informações neste campo, enfatizando o papel que as regulamentações desempenham na manutenção da segurança das transações e na promoção da confiança do usuário.

Desenho/Metodologia/Abordagem: Este estudo utilizou uma metodologia de pesquisa quantitativa para examinar a relação entre perdas financeiras, roubo de identidade, políticas de proteção de privacidade e a vontade de se envolver no comércio eletrônico na Arábia Saudita. Questionários estruturados foram utilizados para coleta de dados e Smart PLS foi utilizado para analisar os resultados por meio de Modelagem de Equações Estruturais (SEM).

Constatações: O estudo revela que os turistas da Arábia Saudita expressam mais preocupação com o roubo de identidade online do que com perdas financeiras. As políticas de proteção da privacidade desempenham um papel fundamental no aumento da sua confiança e participação no comércio eletrónico, sublinhando a importância das medidas regulamentares para garantir a confiança dos utilizadores e a segurança das transações online.

Implicações de pesquisa, Práticas e Sociais: Este estudo destaca as preocupações únicas que os clientes de Internet da Arábia Saudita têm, priorizando o roubo de identidade em vez da perda de dinheiro. As políticas que protegem a privacidade tornam-se um intermediário importante, essencial para fomentar a confiança e promover o comércio eletrónico. As descobertas incentivam mais investigação sobre os elementos fundamentais que influenciam as escolhas dos usuários em estudo. Na prática, as empresas podem melhorar as táticas dando prioridade máxima às fortes salvaguardas de privacidade. A fim de promover um ambiente de comércio electrónico seguro e fiável que beneficie os clientes e a expansão do mercado online da Arábia Saudita, é socialmente vital defender uma legislação explícita em matéria de privacidade.

Originalidade/Valor: Este estudo é uma tentativa pioneira de investigar o comportamento do comércio eletrônico dos turistas da Arábia Saudita. Contribui para o escasso conhecimento nesta área, iluminando a importância das políticas de proteção da privacidade na promoção da confiança do consumidor.

Palavras-chave: Perda Financeira, Roubo de Identidade, Políticas de Proteção de Privacidade, Turismo, Comércio Eletrônico.

EVALUACIÓN DE LOS FACTORES DE PARTICIPACIÓN EN EL COMERCIO ELECTRÓNICO EN ARABIA SAUDITA: PÉRDIDAS FINANCIERAS, ROBO DE IDENTIDAD Y POLÍTICAS DE PRIVACIDAD

RESUMEN

Propósito: El propósito de este estudio es investigar la influencia de las pérdidas financieras, el robo de identidad y las políticas de protección de la privacidad en la disposición de los turistas en Arabia Saudita a participar en el comercio electrónico.

Marco teórico: Este estudio examina el uso del comercio electrónico por parte de los visitantes de Arabia Saudita, destacando las consecuencias de las pérdidas financieras, el robo de identidad y las leyes de privacidad. El estudio emplea Smart PLS y cuestionarios estructurados, respaldados por un marco teórico de confianza y seguridad, para descubrir temores intensificados sobre el robo de identidad en línea. Las políticas que protegen la privacidad se vuelven esenciales, aumentan la confianza de los clientes y promueven el comercio electrónico. El estudio se suma a la escasa información en este campo al enfatizar el papel que juegan las regulaciones en el mantenimiento de la seguridad de las transacciones y la promoción de la confianza de los usuarios.

Diseño/Metodología/Enfoque: Este estudio utilizó una metodología de investigación cuantitativa para examinar la relación entre pérdidas financieras, robo de identidad, políticas de protección de la privacidad y la voluntad de participar en el comercio electrónico en Arabia Saudita. Se utilizaron cuestionarios estructurados para recopilar datos y Smart PLS para analizar los resultados mediante el modelado de ecuaciones estructurales (SEM).

Hallazgos: El estudio revela que los turistas saudíes expresan más preocupación por el robo de identidad en línea que por las pérdidas financieras. Las políticas de protección de la privacidad desempeñan un papel fundamental a

la hora de mejorar su confianza y participación en el comercio electrónico, lo que subraya la importancia de las medidas regulatorias para garantizar la confianza de los usuarios y la seguridad de las transacciones en línea.
Implicaciones de investigación, prácticas y sociales: este estudio destaca las preocupaciones únicas que tienen los clientes de Internet de Arabia Saudita, priorizando el robo de identidad sobre la pérdida de dinero. Las políticas que protegen la privacidad se convierten en un intermediario importante que es esencial para fomentar la confianza y promover el comercio electrónico. Los hallazgos alientan una mayor investigación sobre los elementos fundamentales que influyen en las elecciones de los usuarios en el estudio. En la práctica, las empresas pueden mejorar sus tácticas dando máxima prioridad a las sólidas salvaguardias de la privacidad. Para promover un entorno de comercio electrónico seguro y confiable que beneficie a los clientes y la expansión del mercado en línea de Arabia Saudita, es socialmente vital abogar por una legislación de privacidad explícita.
Originalidad/valor: este estudio es un intento pionero de investigar el comportamiento del comercio electrónico de los turistas de Arabia Saudita. Se suma al escaso conocimiento en esta área al iluminar la importancia de las políticas de protección de la privacidad para fomentar la confianza del consumidor.

Palabras clave: Pérdida Financiera, El robo de Identidad, Políticas de Protección de Privacidad, Turismo, Comercio Electrónico.

INTRODUCTION

Our everyday routines, including our buying habits, have undergone significant changes as a result of the fast advancement of Information and Communication Technology (ICT) (1). The rise of business-to-consumer (B2C) e-commerce in particular has become a crucial aspect of our life(2). But as e-commerce expands, more and more studies are highlighting the privacy issues people have while doing business with one another online (3-5).

Personal information like names and addresses is frequently requested by online retailers(6). According toJanssen, Brous (7) and Benchaya Gans, Ubacht (8), people have the right to know who is collecting their personal information and how it will be used. Since online buying requires disclosing personal information such as names, email addresses, and credit card numbers, it is inevitable that some personal information will be shared. Concerns over possible intrusions of personal privacy are raised by the widespread use of tourist information as valuable data by e-commerce platforms, particularly online purchasing websites (9, 10).

The capacity of a person to manage the collection, use, and distribution of their personal information is sometimes referred to as information privacy (11, 12). However, because of sophisticated computing systems and expanded data processing capabilities, the widespread usage of the internet has diminished people's control over their personal information (13). Because of this, privacy has grown in importance (14), which has led scholars to focus more on the topic (15). Many academics once believed that privacy remained steady and unchanging over a brief period of time, but specialists are now aware of how complicated the problem is (16).

From an economic standpoint, businesses' capacity to recognise individual visitors and provide them with customised prices is what makes tourist information valuable (17). But when it comes to behavioural privacy, people frequently don't know enough to make judgements that respect their privacy(18). People's decision-making processes are influenced by a number of elements, such as the sensitivity of the data at stake and the discrepancy between perceived and real privacy practises. Researchers have noted that privacy may be utilised unjustly and arbitrarily, rather than presuming that visitors always have the same privacy preferences (19).

It is now critical to comprehend how privacy affects people's behaviour and confidence in using IT services or products, including e-commerce (20). Rapid advancements in the economy, technology, and society during the previous 30 years have raised awareness of information privacy throughout the world and contributed to a steady increase in academic research and the legal framework (21).

In Saudi Arabia, worries over information privacy first surfaced in late 2005 and early 2006(22). Parliamentarians in Saudi Arabia were not made aware of these issues until 2015. Study on information privacy and protection grew as Saudi Arabia's internet usage connected the nation to the rest of the globe. Data protection has grown in importance as a result of the increasing digital advancement that has brought new privacy issues.Internet marketing and other technologies provide the foundation of e-commerce, which is defined as the exchange of goods and services over computer networks (23). The capacity of e-commerce to remove geographical barriers and allow users to engage with suppliers and potential visitors at any time and from any location is what gives it its strength (24).

The development of the internet has benefited companies and tourists alike in many ways, since it allows businesses to sell their goods and allows visitors to make purchases from any location (1). But e-commerce has drawbacks as well. The main ones are related to security and privacy, which worry tourists. Despite the possible advantages, tourists may be reluctant to participate in e-commerce due to the revealing of personal information like as social security numbers, credit card information, and date of birth. A crucial element in the success of e-commerce is guaranteeing the privacy of visitors' personal information (25). However, as e-commerce depends on gathering visitor data to comprehend their preferences, managers have a dilemma when it comes to striking a balance between data collection for increased sales and profits and protecting visitors' privacy.

The studies related to privacy determine the effect of different rewards and risks that tourists accept during their engagement in e-commerce (26, 27). However, till yet none of the

study has considered the perception of tourist related to privacy issue in e-commerce. Therefore, this study identifies two knowledge gaps. The first knowledge gap appears to be no study has been done on considering the impact of privacy protection policy in promoting tourists' confidence to engage in an e-commerce transaction. A researcher addresses this gap by examining whether a privacy protection policy can reduce possible online loss and fear of identity theft, increasing the willingness to engage in e-commerce.

The second knowledge gap is that no previous study has been done intensely considering Saudi Arabia's e-commerce privacy protection policy after launching its remarkable vision of 2030 as a study context. The Saudi government has taken various initiatives to adapt e-commerce as it is considered a national transformation program for them, and it also supports the Saudi Vision of 2030. Yet no studies have examined the perception of tourists of Saudi Arabia on how much e-commerce regulations and laws are implemented to develop a steady e-commerce. Saudi tourists are important stakeholders towards successful e-commerce supporting Saudi Vision 2030, but no comprehension of how they perceive the safety of e-commerce may hinder the national planning from reaching Saudi Vision 2030 without difficulties.

Researchers believe that fair information practices can solve privacy issues by providing tourists control for their personal information and help in building trust (27, 28). Four research objectives that should be addressed. The researcher asserts these objectives as follows:

1. What is the impact of financial loss on willingness to engage in e-commerce by tourists in Saudi Arabia?
2. What is the impact of identity theft on willingness to engage in e-commerce by tourists in Saudi Arabia?
3. What is the Mediating role of privacy protection policy on financial loss and willingness to engage in e-commerce by tourists in Saudi Arabia?
4. What is the Mediating role of privacy protection policy on identity theft and willingness to engage in e-commerce by tourists in Saudi Arabia?

The rest of the paper is structured as follows. The next part reviews some pertinent literature and provides a detailed introduction to a conceptual framework and some hypotheses. Section 4 presents the findings of the paper after section 3 explains the methodology. Section 5 presents the discussion and finally, section 6 concludes with limitations and suggestions for future research work.

THEORETICAL FRAMEWORK

The idea of e-commerce was established in the 1990s with the likelihood of sustained marketable events and aids for numerous companies (29). However, here is a minute of preliminary examination on Cyberspace; not much of the examination was directed to the extent of e-commerce until huge firms converted business in the dot- com bubble era (i.e., 1998 to 2000). From the obliteration made by numerous ineffective "dot.com" firms, the administrators of these companies started to understand that rather than having a seemingly trustworthy idea (30).

In the current era, e-commerce is the most important form of online business. The info detonation and significant network growth have permitted several contemporary civilizations to contact e-services, of which internet purchasing is one of the prime facilities. Compared with the types in the earlier time, the new form of e-commerce faces substantial radical and corporate contests because intensifying e-commerce and the cumulative amount of client necessities and opportunities could alter the existing monetary structures(31).

The evolution of using social media and the internet in Saudi Arabia has remained astonishing. Conferring to a statement by BBC, Saudi Arabia possesses the major social media market among all the Middle East countries. This is because of the higher frequency of cell phone usage. The operators are highly energetic on social media podiums like Snapchat, Twitter, Facebook, and YouTube. The country's social media activities are shaped mostly by political, religious, and cultural factors. These factors take Saudi inhabitants' usage of social media in different backgrounds. This facilitates the users to communicate and interrelate (32).

The entire estimated number of inhabitants of Saudi Arabia in 2022 is 35.84 million. The population has grown at a rate of 1.5%. Saudi Arabia has around 34.84 million internet users. According to Saudi Gazette (2022) report that is based on Communications and Information Technology Commission (CITC) report on the use and penetration of internet in Saudi Arabia, 98% of Saudi Arabia inhabited is using the internet. This is an extraordinary number of internet infiltrations in the country. Saudi Arabia has almost 39.53 million mobile connections. At a growth rate of 5.4%, the active social media users in Saudi Arabia are 29.20 million. 82.3%, 27.66 million are accessing social media through mobile. The internet users through mobile in Saudi Arabia 33.59 million, as shown in Table 2.1 which also illustrate the number of mobile connections in Saudi Arabia (32).

Financial Loss

The psychological concept of loss relates to the upsetting feelings that accompany experiencing a financial setback (33). It's another way of saying that there's a risk that cutting-edge technology will hurt people (26) as it is the worry that one's personal and financial information may be stolen and used in an unethical way, like by a hacker to make purchases on the victim's behalf, for financial gain (33). Despite tremendous development and an optimistic prognosis for future growth in online buying, negative features are increasingly connected with this alternative purchasing technique. Tourists, for example, are concerned that the internet still has very little security regarding using credit cards and giving personal information. The notion that a particular amount of money would be lost or required to make a product perform correctly is known as financial loss. It is also characterized as a possible net loss of money, including visitors' fear of using online credit cards, a substantial barrier to online purchases (34). The literature related to internet banking have revealed that fear of financial loss negatively affects users' behavior to use internet banking (26). Other literature reveals that financial loss negatively affects the usage of e-commerce (OECD, 2022). The studies highlighted that tourists will also not engage in e-commerce if they have a threat of any financial loss. Moreover, the fear of financial loss develops a positive impact on privacy and security (26) as they feel that providing credit card information while doing any e-commerce will increase their risk towards using that and, hence this develops a sense of privacy in keeping the data secure. As a result, the study postulates the following hypotheses.

H_1: Financial loss has a negative association with tourists' willingness to engage in e-commerce

H_2: Financial loss has a positive association with privacy protection policy

Identity Theft

Identity theft, also known as identity fraud, is when a criminal gets essential pieces of personal information, like a user's credit number to misuse (26). Studies have examined the linkage between fear of reputational damage and issues such as risk associated with intentions to engage in e-commerce. Such as, Kumar and Gupta (35)highlighted that identity theft negatively affects the usage of e-commerce. Their study sought to ascertain the influence of users' concerns about identity theft and risk on their online purchasing intentions. This is consistent with the findings of other researchers who have looked at similar topics, such as Gupta, Gupta (36). The study related to internet banking also revealed that identity theft

negatively affects intention to use internet banking (26). Consequently, this research assumes that identity theft will also negatively affect tourists' willingness to engage in e-commerce. Hence, the relevant hypothesis is proposed as follows:

H_3: Identity theft has a negative association with tourists' willingness to engage in e-commerce.

H_4: Identity theft has a positive association with privacy protection policy

Mediating Role Of Privacy Protection Policy

Privacy protection policy by law concerns internet confidentiality, including the right or mandate of private confidentiality regarding the storage, involvement to third parties, and exhibiting data about self through Cyberspace. Confidentiality problems have started expressing from the early stages of significant computer distribution (33). Apparent online identity stealing is misconduct in which a pretender gains major parts of personal information, such as a national card number or some driving license to imitate somebody else. The attained data is then utilized for a particular benefit, often by selling and purchasing someone's individuality or details of an affinity card online to the supreme purchaser (26, 37).

The organization is obedient and observant in imposing the policies and regulations ensured by enforcement. In this study, it is the privacy protection policy (PPP) enforcement can only be effective in altering the tourist's willingness to engage in e-commerce by reducing the effect of online financial loss and fear of identity theft if any mechanism or instrument is available to impose the principles (38). Tourists can rely on this privacy policy to protect themselves and their commerce over the internet. Based on the arguments above, the researcher hypothesizes that a privacy protection policy may support tourists to be more willing to engage in e-commerce commerce by reducing their negative perception of possible financial loss and identity theft.

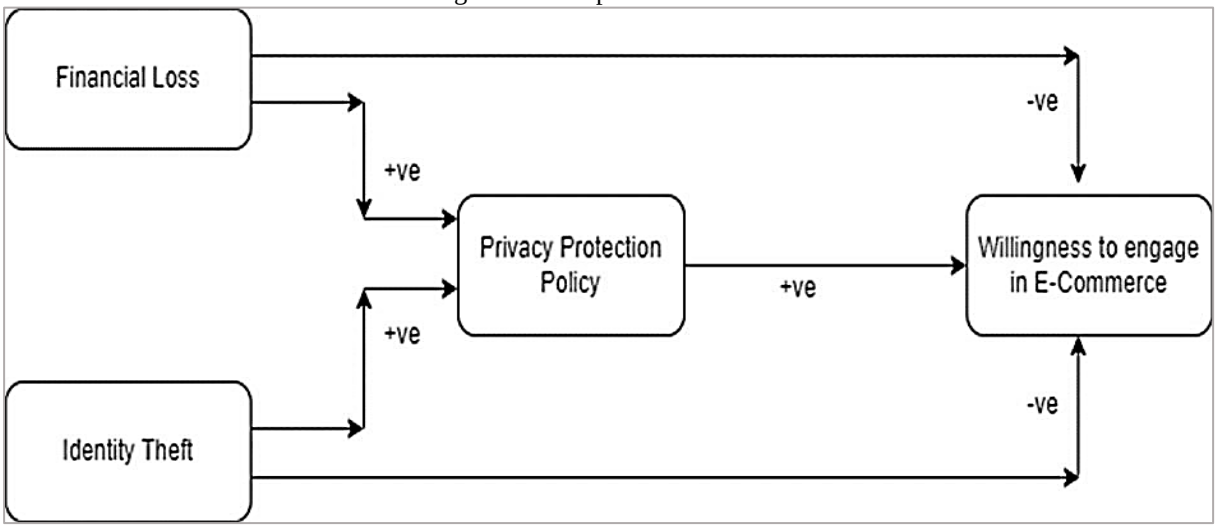
H_5: Tourist high awareness of privacy protection policy positively mediates the relationship between online financial loss and willingness to engage in e- commerce and identity theft and willingness to engage in e- commerce

Research Model

The hypotheses discussed above are depicted in the proposed research model in Figure 1. A plus sign depicts a positive association, while a minus sign depicts a negative association. For instance, financial loss and identity theft negatively associates with tourists' willingness to

engage in e-commerce, while privacy protection policy positively controls positively mediates the relationship between financial loss, identity theft and tourists' willingness to engage in e-commerce.

Figure 1 Conceptual Framework



Source: Authors' creation

METHODOLOGY

This chapter discussed the research methodology applied to test the hypotheses discussed in the previous chapter. Furthermore, in this research study chapter, techniques, including the questionnaire used, were also discussed. Other important elements, including survey instruments, population, and sample, were explained in this research study. Moreover, pilot tests and survey administration were discussed in this chapter.

Research Design

The rigorous quantitative research methodology used in this study was carefully selected to provide a thorough examination and comprehension of the topic.

Data Collection Method

Quantitative analysis is the most appropriate method to analyze studies and interpret relationships (39). Since this study tests the hypothesis about the correlation between financial loss and identity theft and willingness to engage in e- commerce, quantitative analysis is appropriate because it analyses numeric data from the questionnaires.

Population and Sampling

According to Kara (40), "the small group that is observed is known as a sample, and the broader group about which the generalization is made is known as a population." In other words, the sample is a subset of the population. According to Dawadi, Shrestha (41), "population refers to all the members of a certain group. It is the researcher's target group, the group to whom the researcher wishes to generalize the findings of a study." In this study, the population was the potential tourists in Saudi Arabia who had an experience of using internet via its entire means to operate an e-commerce business. Therefore, two criteria must be met for the selected population.

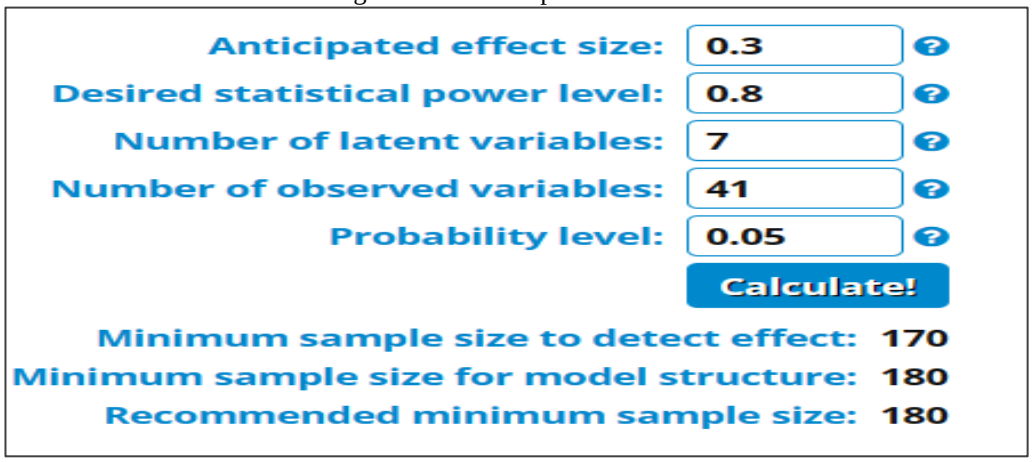
1- Tourists' population: Saudi Gazette (2023) reported that according to Saudi Arabia's Minister of Tourism, total foreign and domestic tourists accounted for 93.5 million during the year 2022 in Saudi Arabia.

2- Internet users: 34.84 million internet users inhabit Saudi Arabia.

Therefore, A-priori Sample Size Calculator for Structural Equation Models is used to compute the right sample size required for the study, given the number of observed and latent variables in the model, the anticipated effect size, and the desired probability and statistical power levels. The calculator should present the minimum sample size required to detect the specified effect(42).

Daniel Soper's calculator (Figure 2) was used to calculate the sample size for a study involving a structural model. The minimum required sample size was 180 with an estimated effect size, latent and observable variables; nevertheless, 335 answers were gathered to satisfy this criterion.

Figure 2: Daniel Soper's calculator



Source: Authors' creation

Questionnaire Design

A questionnaire was opted as the research instrument for quantitative data collection in this study. The development of the questionnaire in this study was designed to investigate the financial loss and identity theft association with the willingness to engage in e-commerce commerce and the mediating role of privacy protection policy by tourist in Saudi Arabia. The questionnaire was designed in a structural form, and it is designed based on the previous literature review regarding financial loss and identity theft's effect on the willingness to engage in e-commerce, relevant to the components of technology threat avoidance theory.

Study Variables

This research paper centres on a number of important elements. The elements being modified or studied to determine their effect include online identity theft and online financial loss, which are regarded as independent variables. The influence of these variables on the dependent variable which is willingness to engage in e-commerce is investigated. Furthermore, the study explores the mediating impact of privacy protection policies and how they could affect the correlation between online identity theft, online financial loss, and e-commerce readiness. The question items listed in the questionnaire of this study are collecting opinion and perspective data. Therefore, rating questions are used in the questionnaire design. A five-point Likert-style rating indicates the participants' level of agreement with a series of statements. Scales are a set of questions or scale items used to measure a construct's strength (43).

Survey Administration

The questionnaire of the study was designed on (Google Consumer Surveys) (GCS). A Facebook advertisement campaign was used to disseminate the link to an online Google Consumer Surveys between September - October 2023 (n = 250). The selected participants must hold a knowledge of e-commerce, and for this the two initial questions were asked before *"Are you an online user?"* with a binary answer of (yes) or (No) *and "If Yes to the first question, approximately, how long do you spend browsing the internet daily?"*

Measurement Model Validation

We utilised the Smart PLS programme to apply Structural Equation Modelling (SEM) for the purpose of analysing and validating our study model. SEM is an effective statistical method that enables us to evaluate intricate correlations between variables(44). Because of its

intuitive interface and capacity to work with small sample sizes, Smart PLS was selected as the perfect tool for our study. The rigour of our study was enhanced by this technique, which offered a strong framework for evaluating the validity and reliability of our measurement models as well as investigating the structural relationships between model elements.

Data Analysis and Findings

The demographic profile of the participants in the survey is displayed in Table 1. Using a Google form published via Facebook, the survey contacted Saudi Arabian respondents. A deliberate attempt was made to collect a variety of viewpoints, as seen by the gender distribution, which is fairly balanced at 55% women and 45% males. A concentration on young adults and those just starting their careers is evident from the age distribution, which reveals that 52.8% of respondents are between the ages of 18 and 34. Over the age of fifty-five, participation steadily declines. Although the sample includes people of several races, including Africans (3.4%), Asians (6.3%), Whites (7.35%), and others (2.1%), 80.84% of respondents identify as Arabs ethnically. 50.13% of respondents had a bachelor's degree or above, followed by those with master's degrees (17.85%) and high school equivalency diplomas or equivalents (17.85%). The most common marital status is married (46.20%), followed by divorced (4.46%), separated (7.08%), widowed (6.82%), single (30.18%), and unreported (5.25%) persons.

Full-time employees (26.25%) and students (27.56%) make up a significant portion of the study's respondents, who come from a variety of job backgrounds. A complete picture of employment possibilities is painted by the contributions of retirees (9.45%), part-timers (13.91%), jobless people (17.32%), and independent contractors (5.51%). When it comes to money, the majority (35.43%) make between $2000 and $4000 annually, with a sizable portion in lower income groups (29.40% making less than $2000). 22.05% of respondents claim earning between $8000 and $10000, while 9.71 percent report earning more than $10000. The study's conclusions are enhanced by this varied demographic makeup.

Table 1: Demographic characteristics of respondents

Category	Sub-category	Frequency (Total = 335)	(%)
Gender	Male	150	44.80
	Female	185	55.20
Age	18 – 24	88	26.30
	25 – 34	82	24.50
	35 – 44	78	23.30
	45 – 55	67	20.00
	Above 55	20	6.00
Ethnicity	Arab	270	80.60
	African	12	3.60
	Asian	22	6.60
	White	25	7.50
	Others	6	1.80
Qualification	Less than high school diploma	11	3.30
	High school diploma or equivalent	63	18.80
	Bachelor	158	47.20
	Master	72	21.50
	Doctorate/MD	20	6.00
	No degree	11	3.30
Marital status	Married	157	46.90
	Divorced	17	5.10
	Separated	23	6.90
	Widowed	25	7.50
	Unmarried	98	29.30
	Don't want to say	15	4.50
Employment status	Full-time employment	91	27.20
	Part-time employment	48	14.30
	Unemployed	60	17.90
	Self-employed	18	5.40
	Student	86	25.70
	Retired	31	9.30
Income	less than 2000 $ (7500 SR)	108	32.20
	2000 – 4000 $	120	35.80
	5000 – 7000 $	6	1.80
	8000 – 10000 $	71	21.20
	more than 10000 $ (more than 37500 SR)	30	9.00
Time Spent on Internet	less than one hour	14	4.00
	From 1 to 3 hours	61	18.00
	From 4 to 6 hours	137	41.00
	From 7 to 9 hours	89	26.00
	More than 9 hours	34	10.00

Source: Authors' creation

Descriptive Analysis

The results of descriptive analysis in Table 2 show that for negative variables of online financial loss and online identity theft, the means of 2.008 and 2.123 are on the lower side of the scale average (3 for a Likert scale ranging from 1 to 5) depicting that level of fear for financial loss and identity theft while using ecommerce and internet is on the lower side as majority of sample had chosen disagree (2) or strongly disagree (1) for the option. However, in comparison it seems that fear of identity theft is greater than fear of financial loss.Similarly, we

can see that mean of willingness to use ecommerce services is 3.857 which indicate a widespread popularity of internet buying and more and more people are tilting towards it including the tourists. For all four scales of Privacy Protection Policy adopted in this study, it can be seen that mean is greater than 3 which depicts those respondents had sufficient information and awareness about privacy protection policies.

Table 2: Descriptive analysis

Variables	Min	Max	Mean	SD	Skewness	SE	Kurtosis	SE
Online Financial Loss	1	5	2.008	0.945	1.494	0.133	1.629	0.266
Online Identity Theft	1	5	2.128	0.985	1.222	0.133	0.814	0.266
Privacy Protection Policy	1	5	3.684	1.086	-0.751	0.133	-0.360	0.266
Privacy Control& Awareness	1	5	3.729	0.977	-0.975	0.133	0.146	0.266
Enforcement of Privacy Policy	1	5	3.757	1.026	-0.993	0.133	0.265	0.266
E-commerce Privacy	1	5	3.788	0.946	-0.925	0.133	0.392	0.266
Willingness to Engage in Ecommerce	1	5	3.857	0.904	-1.015	0.133	0.598	0.266

Source: Authors' creation

Correlation Analysis

Table 3 represents the correlation results which indicate strong positive and negative correlations between the study constructs. First of all we can see that financial loss is strongly correlated with identity theft which is natural because both constructs are closely related. There are many occurrences when online identity theft leads to considerable financial loss as well (45). Both online financial loss and online identity theft are negatively related to measures of Privacy Protection Policy and tourist's Willingness to Engage in Ecommerce services which are in most of the cases near or above 0.5 considered as high. Finally, the correlation between four scales used to measure tourist awareness and perception of Privacy Protection Policy are highly correlated to each other which depicts that they all are measuring one latent construct of privacy protection policy.

Table 3: Correlation analysis

	1	2	3	4	5	6
1. Online Financial Loss	1					
2. Online Identity Theft	.788**	1				
3. Privacy Protection Policy	-.437**	-.425**	1			
4. Privacy Control& Awareness	-.496**	-.479**	.839**	1		
5. Enforcement of Privacy	-.553**	-.513**	.772**	.834**	1	
6. E-commerce Privacy	-.536**	-.501**	.731**	.823**	.828**	1
7. Willingness to Engage in Ecommerce	-.508**	-.502**	.711**	.714**	.658**	.665**

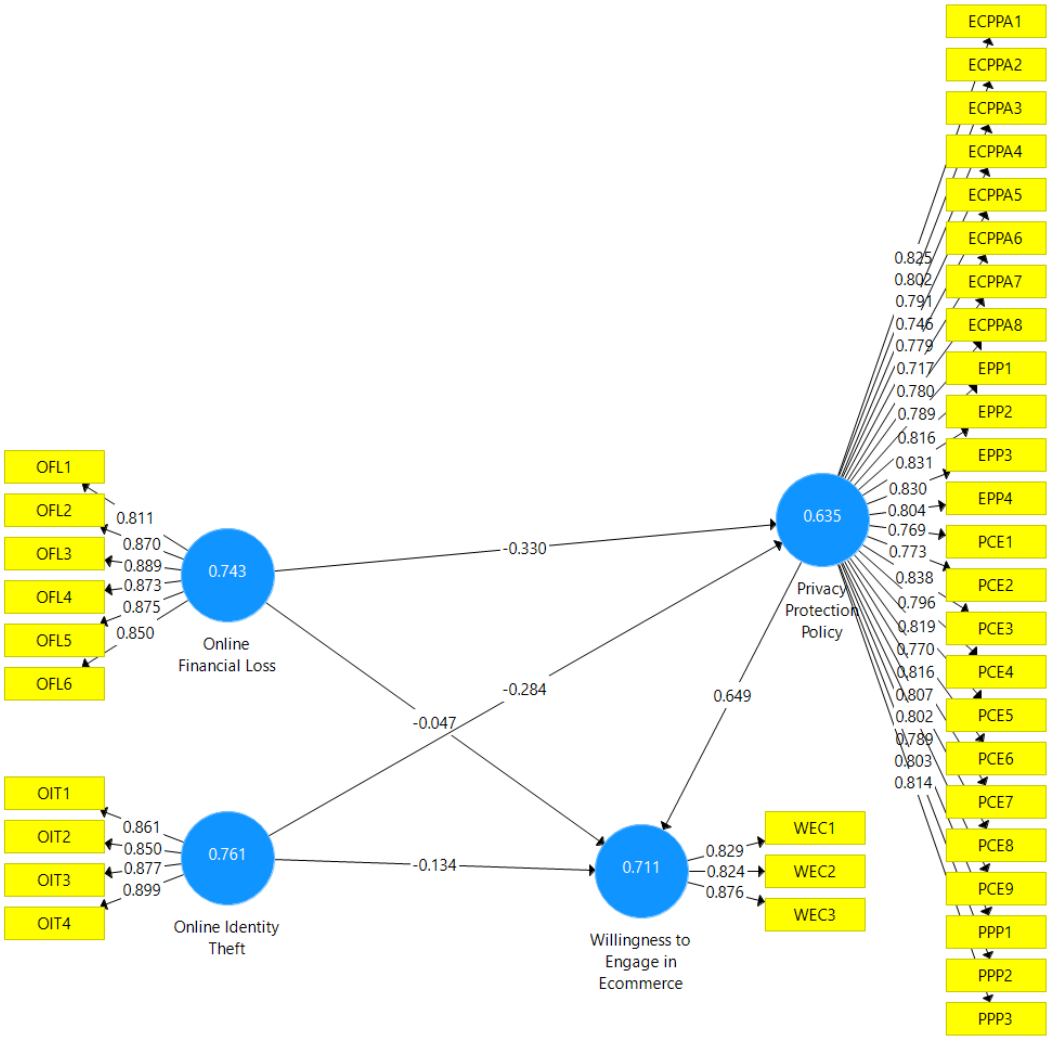
**. Correlation is significant at the 0.01 level (2-tailed)
Source: Authors' creation

Measurement Model Analysis

The study followed the recommended two-step process for conducting PLS-SEM analysis on the study model: First, validation of the measurement model and second, assessment of the structural model. Hair Jr, Sarstedt (46) contend that the validity of the outer model is really established by the soundness of the measuring model.A set of measured items is said to have construct validity when it properly represents the theoretical latent construct that it is intended to assess.Numerous forms of validities can be determined at various points throughout the study. Following the use of appropriate measures, the researcher established the content validity; this was then confirmed by the expert review from the relevant field. During the pilot testing stage, face validity of the survey instruments was established. The PLS algorithm method in the SMART-PLS 4program was used to establish the reliability and two crucial validities, namely convergent and discriminant.A factor weighting system and 300 iterations of the PLS algorithm were used(47).

The framework in this study has four variables. There are two exogenous variables; online financial loss and online identity theft and two endogenous variables, Privacy Protection Policy(mediator) and willingness to engage in e-commerce. All of the constructs were reflective in nature which means that indicators of a constructs are considered to be caused by the latent construct. The arrow directs from the latent construct to the indicator. Because of conceptual overlap between four measures of privacy protection policy, privacy control and effectiveness, enforcement of privacy policy and trustworthiness of E-commerce privacy protection policy were loaded on a single construct of Privacy Protection Policy. Figure 3 shows the measurement model results after running PLS algorithm.

Figure 3: Measurement Model Analysis



Source: Authors'creation

Reliability Analysis

Two criteria were used to assess the reliability of internal consistency. The standard measurement is Cronbach's alpha. The inter-correlation of each indicator of a latent variable serves as the foundation for the assessment of reliability. Recently, composite reliability (CR) has been suggested as an alternate internal consistency measurement method (48). It is regarded as a more accurate measure of reliability because it takes into account the relative magnitude of the outer loadings of the indicator variables. On the other hand, Cronbach's Alpha gives each item the same weight.

The reliabilities for both kinds vary from 0 to 1, with greater numbers indicating stronger reliabilities.The suggested value for Cronbach's alpha and composite reliability is greater than 0.7.Values of CR less than 0.6 are considered unsatisfactory (47).Table 4 lists the Cronbach's

Alpha and CR values for each of the latent constructs used in this study.It shows that all of the constructs had sufficient reliability.

Table 4: Reliability analysis

	Cronbach's Alpha	Composite Reliability
Online Financial Loss	0.931	0.945
Online Identity Theft	0.896	0.927
Privacy Protection Policy	0.975	0.977
Willingness to Engage in Ecommerce	0.797	0.880

Source: Authors' creation

Validity Analysis

Validity analysis is a crucial stage in determining the measurement model's accuracy and reliability. This entails assessing the latent constructs' convergent and discriminant validity as well as that of the relevant indicators.

Convergent Validity

The degree to which many indicators assessing the same underlying construct show a positive association with one another is known as convergent validity. When an indicator doesn't show convergent validity, it should be taken into consideration for elimination until every indication that is still present consistently aligns with the same underlying latent concept. This evaluation often depends on the computation of Average Variance Extracted (AVE) and the study of the outer factor loadings of indicators, also known as indicator reliability(47).

The rule of thumb for indicator loading is that it should preferably be greater than 0.707 (49). As shown in Table 5 all the indicators of this study had loadings greater than the recommended threshold. Similarly, for AVE the minimum recommended threshold is 0.5 (50) which was fulfilled by all of the constructs as well. Therefore, sufficient convergent validity was established. Although the inclusion of three deleted indicators of financial loss did not disturb the convergent validity of online financial loss, they were removed due to issues in discriminant validity which is discussed later on.

Table 5: Convergent validity

Construct	**Indicator**	**Loading**	**AVE**
Online Financial Loss			0.743
	OFL1	0.811	
	OFL2	0.87	
	OFL3	0.889	
	OFL4	0.873	
	OFL5	0.875	
	OFL6	0.85	

Construct	Indicator	Loading	AVE
	OFL7	-	
	OFL8	-	
	OFL9	-	
Online Identity Theft			0.761
	OIT1	0.861	
	OIT2	0.85	
	OIT3	0.877	
	OIT4	0.899	
Privacy Protection Policy			0.635
	PCE1	0.769	
	PCE2	0.773	
	PCE3	0.838	
	PCE4	0.796	
	PCE5	0.819	
	PCE6	0.77	
	PCE7	0.816	
	PCE8	0.807	
	PCE9	0.802	
	PPP1	0.789	
	PPP2	0.803	
	PPP3	0.814	
	ECPPA1	0.825	
	ECPPA2	0.802	
	ECPPA3	0.791	
	ECPPA4	0.746	
	ECPPA5	0.779	
	ECPPA6	0.717	
	ECPPA7	0.78	
	ECPPA8	0.789	
	EPP1	0.816	
	EPP2	0.831	
	EPP3	0.83	
	EPP4	0.804	
Willingness to Engage in Ecommerce			0.711
	WEC1	0.829	
	WEC2	0.824	
	WEC3	0.876	

Source: Authors' creation

Discriminant Validity

Next step after establishing convergent validity is to establish if all the study constructs are discriminant. This type of validity indicates that a construct in the study is distinct from others and measures a different phenomenon (51). Traditionally researchers have used cross-loadings and Fornell-Larcker criteria to assess the discriminant validity (52). However, recently, Henseler, Ringle (53) have introduced another approach to overcome some weaknesses in these two methods. This approach is termed as heterotrait-monotrait ratio (HTMT) of correlations. The current study used all three approaches to determine discriminant validity. The cross-loading values represent the loading of an item across all the constructs. Discriminant validity is established when an indicator loads with highest value on its own latent

construct as compared to the other constructs. The Table 6 indicates the cross loadings. A review of the cross-loading table reveals that although all of the items had highest loadings on their own respective constructs, last three indicators of Financial Loss also had high loadings on Identity Theft which was disturbing the other two criteria of discriminant validity as well. Therefore, these three indicators were removed from the analysis.

Table 6: Cross loadings

	Online Financial Loss	**Online Identity Theft**	**Privacy Protection Policy**	**Willingness to Engage in Ecommerce**
OFL1	**0.811**	0.627	-0.415	-0.378
OFL2	**0.87**	0.627	-0.546	-0.501
OFL3	**0.889**	0.664	-0.498	-0.457
OFL4	**0.873**	0.658	-0.43	-0.425
OFL5	**0.875**	0.64	-0.432	-0.387
OFL6	**0.85**	0.636	-0.454	-0.407
OIT1	0.72	**0.861**	-0.462	-0.433
OIT2	0.589	**0.85**	-0.369	-0.374
OIT3	0.604	**0.877**	-0.457	-0.437
OIT4	0.674	**0.899**	-0.533	-0.523
PCE1	-0.34	-0.381	**0.769**	0.578
PCE2	-0.358	-0.357	**0.773**	0.581
PCE3	-0.459	-0.41	**0.838**	0.614
PCE4	-0.452	-0.415	**0.796**	0.597
PCE5	-0.416	-0.433	**0.819**	0.624
PCE6	-0.355	-0.365	**0.77**	0.585
PCE7	-0.439	-0.435	**0.816**	0.566
PCE8	-0.387	-0.4	**0.807**	0.615
PCE9	-0.455	-0.457	**0.802**	0.632
PPP1	-0.413	-0.395	**0.789**	0.663
PPP2	-0.387	-0.384	**0.803**	0.647
PPP3	-0.382	-0.405	**0.814**	0.664
ECPPA1	-0.399	-0.385	**0.825**	0.594
ECPPA2	-0.396	-0.359	**0.802**	0.575
ECPPA3	-0.447	-0.461	**0.791**	0.563
ECPPA4	-0.432	-0.411	**0.746**	0.47
ECPPA5	-0.486	-0.506	**0.779**	0.568
ECPPA6	-0.441	-0.414	**0.717**	0.571
ECPPA7	-0.448	-0.395	**0.78**	0.542
ECPPA8	-0.504	-0.464	**0.789**	0.6
EPP1	-0.481	-0.434	**0.816**	0.595
EPP2	-0.477	-0.522	**0.831**	0.602
EPP3	-0.48	-0.482	**0.83**	0.62
EPP4	-0.482	-0.418	**0.804**	0.559
WEC1	-0.474	-0.499	0.649	**0.829**
WEC2	-0.35	-0.361	0.555	**0.824**
WEC3	-0.426	-0.426	0.672	**0.876**

Source: Authors' creation

Next we determined the discriminant validity using more traditional method that is the Fornell-Larcker Criterion (52). In this method the square root of AVEs for each construct are compared with the correlation of that construct with other constructs. The discriminant validity

is there if the square root of AVE is greater than inter-construct correlations. In the Table 7 we can see that square root of AVE as shown in the bold diagonal are larger than the correlations depicted under the diagonal. Therefore, discriminant validity was established using this method as well.

Table 7: Fornell-Larcker criterion

	Online Financial Loss	**Online Identity Theft**	**Privacy Protection Policy**	**Willingness to Engage in Ecommerce**
Online Financial Loss	**0.862**			
Online Identity Theft	0.744	**0.872**		
Privacy Protection Policy	-0.541	-0.529	**0.797**	
Willingness to Engage in Ecommerce	-0.498	-0.513	0.746	**0.843**

Source: Authors' creation

Finally, we used HTMT to determine presence of discriminant validity between the constructs. According to Henseler, Ringle (54), the term "HTMT" refers to the proportion of heterotrait-heteromethod (HT) correlation to monotrait-heteromethod (MT) correlation. The mean of all correlations between all indicators for each construct in the model is reflected by the HT correlation. MT correlation denotes the geometric mean of the average of correlations of indicators for the same construct. An alternative name for HTMT is disattenuated correlation. According to a general rule, discriminant validity is indicated by an HTMT score of less than 0.9 and ideally less than 0.85 (47). With the inclusion of all of the items of Financial Loss, the HTMT between Financial loss and Identity Theft was 0.86. However, it reduced to 0.813 after three items of Financial Loss were deleted. As Table 8 shows the discriminant validity was established with this method as well.

Table 8: HTMT scores

	Online Financial Loss	**Online Identity Theft**	**Privacy Protection Policy**
Financial Loss			
Identity Theft	0.813		
Privacy Protection Policy	0.562	0.557	
Willingness to Engage in Ecommerce	0.569	0.594	0.84

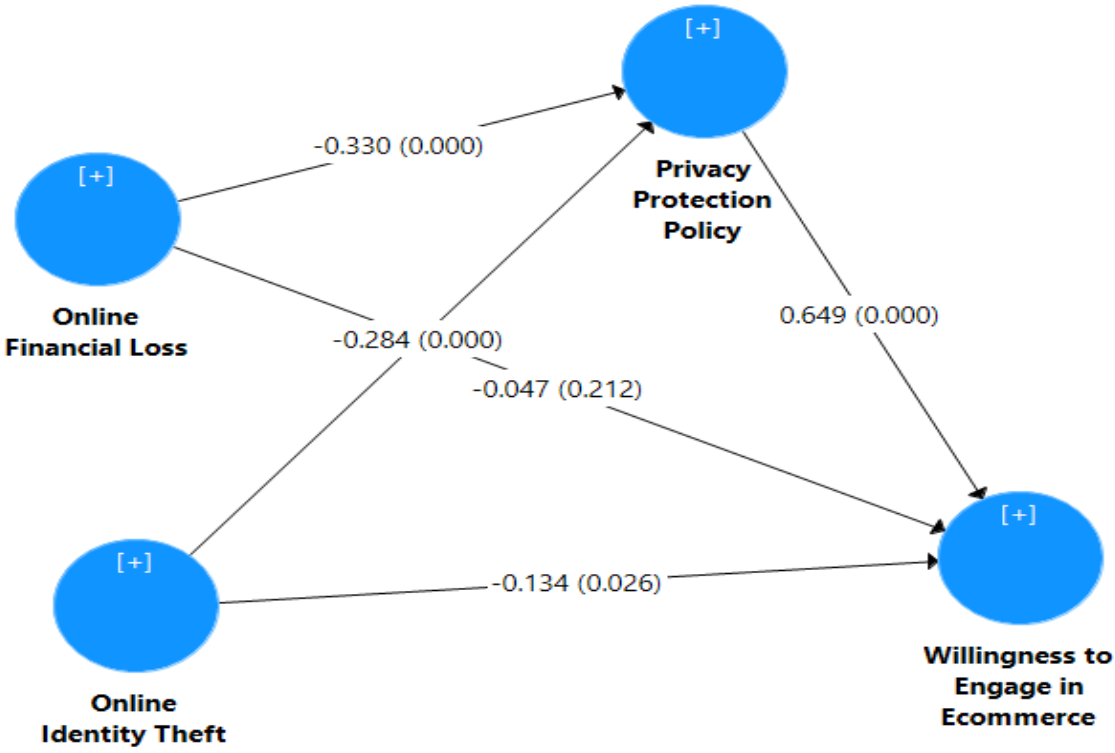
Source: Authors' creation

Structural Model Analysis

The predicted directional linkages between latent constructs are graphically represented in a structural model in structural equation modelling, generally using arrows to denote the anticipated effect of exogenous variables on endogenous variables. After the accuracy of the

measurement model had been confirmed, the next stage was to carefully analyse the structural model based on the following phases(47). Figure 4 shows the diagram for structural model results in SMART PLS 4

Figure 4: Structural equation modeling



Source: Authors' creation

Hypotheses Testing

The proposed links between the research constructs are represented in Table 9 by path coefficients in the PLS-SEM structural model. Five hypotheses were developed for the current study from its four objectives. Four of the hypothesis depicted the direct relationship. In a structural model, the exogenous and endogenous variables were connected one to one, representing the direct impact hypothesis, and a variable that intervened, representing the indirect effect hypothesis.This section will give a summary of the findings related to the interactions between the components in the proposed structural model, highlighting path coefficients and their significance levels within the PLS structural model.These path coefficients are standardised beta valuesfrom +1 to -1, with values near to zero indicating weaker correlations. Depending on the findings of the significance test, which statistically determines if the coefficient is substantially different from zero, a hypothesis is either accepted or rejected.The relevance of path coefficients is tested using a nonparametric bootstrapping

approach because PLS does not presuppose data normality.Since the hypothesis were directional in this study. One-tailed tests with a 5% confidence level were used to determine significance. Significant results are those with a p-value less than or equal to 0.05 and a t value greater than or equal to 1.645.Percentile bootstrap with 5000 subsamples was used to cross-validate the significance of the path coefficients and develop confidence intervals. As they take into consideration biases and skewness within the dataset, these intervals provide improved accuracy when working with non-normally distributed data(47).

Table 9: Hypotheses Testing

Hypothesized Path	Coefficients	T Statistics	P Values	Significance
Financial Loss ->Privacy Protection Policy	-0.33	4.746	0	Yes
Financial Loss ->Willingness to Engage in Ecommerce	-0.047	0.807	0.21	No
Identity Theft ->Privacy Protection Policy	-0.284	3.959	0	Yes
Identity Theft ->Willingness to Engage in Ecommerce	-0.134	1.925	0.027	Yes
Privacy Protection Policy ->Willingness to Engage in Ecommerce	0.649	14.591	0	Yes

Source: Authors' creation

DISCUSSION

It is indisputable that ICT have had a revolutionary and widespread influence on modern society (55). Significant changes have been brought about by ICT, most notably in the way we make purchases(56). This paradigm shift has blurred the boundaries between physical and virtual marketplaces, changing customer behaviour and revolutionising the retail industry(1). The impact of ICT on purchasing experiences is examined in this study, along with its potential consequences for the future of business (1, 2). It explores the changing relationships between online and physical shopping, illuminating the interactions that have changed the retail environment. The study addresses the ramifications for customers and the retail sector, emphasising the necessity for adaptation in the face of this digital revolution (3-5).

In order to meet the objectives of the study, the conceptual model created in section 3 was verified in accordance with the literature review in section 2. This study investigates the complex interplay between e-commerce, identity theft, financial loss, and privacy protection that shapes consumer behaviour in the digital era. In order to help governments and companies meet the expectations of a society that is more linked through digital means, the research aims to offer insightful information about the motives and concerns of contemporary customers. A statistically significant positive link between financial loss and privacy protection policy was found in the study, indicating that those who have suffered financial losses are more likely to

cherish their online privacy. The lack of a link between financial loss and an individual's willingness to engage in e-commerce, however, suggests that other factors have a greater impact on people's attitudes and behaviours towards online purchasing.

Additionally, the study reinforced the notion that identity theft and privacy protection are positively correlated, emphasising the influence of individual experiences on privacy concerns. Additionally, a positive correlation between e-commerce adoption and identity theft was discovered, indicating that victims of identity theft would be more likely to adopt e-commerce as a result of their awareness of the security of online transactions and the significance of identity verification processes. The study also found a significant association between privacy protection and e-commerce readiness to use, highlighting the importance of security and trust in influencing customer behaviour in the online market.

Answers to the Research Questions

What is the impact of financial loss on willingness to engage e-commerce by tourists in Saudi Arabia?

In response to this question,the findings suggest that visitors are not actively embracing e-commerce due to apprehension about potential financial loss brought on by problems like fraudulent transactions or payment errors. This result may appear contradictory since one may anticipate that those who have suffered a financial loss would be more cautious and hence more inclined to look for the protection and transparency that e-commerce platforms can offer. The link between financial loss and e-commerce adoption appears to be more complicated in the case of Saudi Arabian tourists, and it is important to keep in mind that consumer behaviour is impacted by a variety of variables. The non-significant p-value of 0.21 suggests that the findings do not support the hypothesis that suggests a major influence of financial loss on visitors' willingness to engage in e-commerce in Saudi Arabia.

What is the impact of identity theft on willingness to engage in e-commerce by tourists in Saudi Arabia?

Unexpectedly, identity theft makes Saudi visitors more open to doing online business. Victims could be drawn to e-commerce because of its ease and desire for safe transactions. However, there is a negative correlation between identity theft and privacy protection policy. This demonstrates the importance of comprehending and addressing the effect on customer trust in online purchasing (57, 58). The results, which showed a significant p-value of 0.027, were consistent with the hypothesis about the effect of identity theft on visitors' willingness to

participate in e-commerce in Saudi Arabia. This suggests that instances of identity theft have a significant impact on tourists' receptivity to online businesses, underscoring the necessity of strong privacy protection policies to establish and preserve client confidence in this setting.

What is the Mediating role of privacy protection policy on financial loss and willingness to engage in e-commerce by tourists in Saudi Arabia?

The study shows that the desire of Saudi Arabian visitors to participate in e-commerce and financial loss are mediated by privacy protection rules. Tight privacy regulations amplify the beneficial impact of financial loss on online shopping, encouraging travellers to use and trust sites with strong privacy safeguards. To improve customer trust and spur e-commerce growth, legislators and businesses in Saudi Arabia's tourist and e-commerce sectors have to give top priority to robust privacy protection policies.

Customers' opinions on security and privacy have an impact on their views regarding online buying. Studies indicate that security concerns have a detrimental influence on attitudes and preferences for online purchasing, even while some discover no discernible connection between privacy concerns and online shopping perceptions(59-61). People with limited risk tolerance can be put off by perceived privacy and security flaws. Online buying choices are also influenced by shifts in consumers' perceptions and levels of trust in online market places(62). The results, which showed a significant p-value of 0.0, substantially supported the hypothesis about the mediating role of privacy protection policies on financial loss and the willingness of visitors in Saudi Arabia to engage in e-commerce. This emphasises how crucially important strong privacy protection policies are to boosting the beneficial effects of financial loss on online buying, highlighting the necessity of legislative and commercial focus on privacy protections to maintain consumer confidence and foster the expansion of e-commerce(63-64).

What is the Mediating role of privacy protection policy on identity theft and willingness to engage in e-commerce by tourists in Saudi Arabia?

The effect of identity theft on saudi visitors' willingness to engage in online shopping is mitigated by privacy protection policies. Individuals who have been victims of identity theft are more inclined to accept online shopping in the presence of robust privacy regulations. Establishing trust and promoting e-commerce engagement in Saudi Arabia's tourist and e-commerce domains necessitates the effective dissemination of these policies. With a substantial p-value of 0.0, the hypothesis on the mediating influence of privacy protection policies on identity theft and the willingness of visitors in Saudi Arabia to engage in e-commerce is strongly supported. This emphasises how important privacy protection policies are in affecting the link

between identity theft and the willingness to purchase online, underscoring the need of advocating for and putting these laws into practise in order to foster confidence and boost e-commerce in Saudi Arabia.

CONCLUSION

This research has illuminated the variables affecting tourists' inclination to partake in online shopping in Saudi Arabia, with particular attention to financial loss, identity theft, and the moderating effect of privacy protection policies. According to the data, visitors are often unconcerned about these hazards, but privacy protection policies are essential for fostering consumer confidence in e-commerce sites.

The study indicates that although visitors from Saudi Arabia are not overly concerned about financial loss on online purchases, they are more worried about identity theft occurring online. The study also emphasises how important privacy protection policies are in resolving these issues and encouraging tourists to participate in online shopping, with this mediating impact being especially noteworthy. These results highlight how crucial privacy protection policies are to raising Saudi Arabian visitors' levels of confidence and security while making online purchases. All things considered, this study advances knowledge about Saudi Arabia's e-commerce scene and emphasises the need of laws and regulations protecting users' privacy and building confidence in online transactions.The study has limitations due to response bias and limited response alternatives resulting from the use of Likert scales for data collection. Although useful for measuring, quantitative statistics can oversimplify complicated human experiences and lack the nuance of qualitative methods. It may also be difficult to extend the study's conclusions to areas with distinct socio-cultural dynamics and visitor populations due to its exclusive emphasis on Saudi Arabian visitors, which limits its generalizability to a wider range of international situations. The findings of the study provide new directions for investigating the e-commerce uptake and consumer behaviour of Saudi Arabian tourists. The universality of the connections between e-commerce, identity theft, financial loss, and privacy protection may be investigated through cross-cultural comparisons. Studies using a longitudinal design can monitor evolving trends and behaviours across time. Qualitative techniques such as focus groups can explore the variables affecting e-commerce decisions. Education in cyber-security, the effects of legislation, and the influence of new technologies like blockchain and biometrics on online purchasing are some other topics of interest. Comparing countries with comparable geographic areas provides a wider perspective.

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