Vulnerability of Gen-Z to E-Commerce Deception on Consumer's Belief Categories in Online Product Recommendations Systems

Shiraz Parveen, Ramya Krishnaraj

ABSTRACT

Purpose: Despite the convenience of the Online Product Recommendation (OPR) system, concerns persist regarding deception practices in online shopping, especially among consumers from the Generation Z demographic cohort, for which less attention has been given in the previous literature.

Methodology/Approach: The impact of independent variables, namely Perceived Usefulness, Perceived Enjoyment, and Perceived Risk, on Susceptibility to e-commerce fraud among Gen Z consumers has been studied. By conducting a mall intercept survey in four major metropolitan cities in India with a usable sample of 488 responses, the study empirically tested the data using SmartPLS 4.0.

Findings: The study concludes that Perceived Usefulness and Enjoyment positively influence continuous usage intention, while Perceived Deception and Perceived Risk are negatively connected with continuous usage intention. It depicts that the Gen Z consumer's belief categories formed during their early years as digital natives sharpen their alertness to deception practices.

Research Limitation/Implication: The study may not be generalised to represent Gen Z consumers as it collected data only from those who visited malls in the metropolitan cities of India.

Originality/Value of paper: This paper exclusively investigates the interrelation of belief categories to continuous usage intention. Further, the intersection of perceived Deception is proved in light of the E-commerce practices.

Category: Research Paper

Keywords: online product recommendation; belief categories; e-commerce deception; Gen Z consumers; AI-infused OPR website continue usage intention

Research Areas: Management of Technology and Innovation, Quality 4.0.

1 INTRODUCTION

Throughout the last two decades, e-commerce and online transactions have gained immense popularity, but COVID-19 has forced even reluctant online shoppers to engage in e-commerce. A significant advantage e-commerce offers consumers is the low search costs of finding products/services and information (Alba et al., 1997). Despite the benefits, consumers are confused with the overwhelming task of choosing from the numerous alternatives available. To tackle this, external facilitators like Online Product Recommendations (OPR) assist in simplifying the decision-making process. Marketers are integrating recommendation technology into their websites due to the strategic importance of OPR (Dabholkar and Sheng, 2012).

The growth of Internet usage and accessibility for everyone leads to the misuse of technology (Sandywell, 2009; Mark Button, 2017). Among them, the major is the fraud activities involved in e-commerce transactions. Few studies have indicated that online transactions are more prone to fraud than in-person transactions (Reep-van et al., 2018). Over the last decade, there has been a rapid increase in fraudulent activities associated with business-to-consumer (B2C) e-commerce. According to Norton Cyber Safety Insights Report (2021), the number of people affected by cybercrime is approximately 330 million. It is crucial to address fraudulent online sales, electronic funds transfers, identity theft, advance fee schemes, and fraudulent investments to build customer trust (Apau and Koranteng, 2019). The current article observes the complexities of e-commerce deception. Using a survey of Gen Z consumers, this article analyses individuals' perceived behaviours and suggests measures to protect against online shopping fraud and Deception. This article attempts to seek the following research questions:

1. Do the belief categories (Perceived Usefulness, Perceived Enjoyment, and Perceived Risk) of online product recommendations (OPR) influence the continuous intention of Gen Z consumers to use a website?

2. Does the proliferation of Belief categories of OPR deceive Gen Z consumers from e-commerce fraud?

3. How cognizant is Gen Z of e-commerce deception?

The following research objectives are put forth to address the above research questions:

1. To measure the extent of belief categories (Perceived Usefulness, Perceived Enjoyment, and Perceived Risk) on OPR continuous usage intention among Gen Z consumers.

2. To examine the relationship between OPR belief categories and e-commerce deception among Gen Z consumers in the settings of e-commerce platforms.

3. To determine the level of Risk perceived by Gen Z consumers from e-commerce deception practices.

2 THEORETICAL BACKGROUND

2.1 Online Product Recommendations (OPR) and Gen Z Consumers

Online Product Recommendation (OPR) is an emerging technology in Information Systems and Consumer Behaviour study. Artificial Intelligence significantly simplifies product choice for customers. However, customers face a dilemma in which they desire additional information on one hand while simultaneously being overwhelmed by an excess of information on the other (Sheng et al., 2014). Customer's dilemmas leading to purchase discontinuation. External agents like Online Product Recommendations help address this issue in this advanced era. In this study, OPR refers to System-Generated Recommendations (SGR) and Consumer-Generated Recommendations (CGR). System-generated Recommendations are based on previous shopping activities and preferences of consumers where the internet algorithm recommends the most appropriate products accordingly (Maes, Guttman, and Moukas, 1999). Consumer-generated recommendations, such as consumer ratings and reviews, are original experiences or opinions that consumers facilitate to the consumers(Ashraf, Ismawati Jaafar and Sulaiman, 2019a).

The effectiveness of OPR is fully functional when the customers are ready to employ it in their operations. Moreover, the customer's willingness to continue the usage of OPR is crucial as it results from satisfaction and Usefulness of the provided content (Sheng et al., 2014).

This study focuses on Generation Z, which is online shoppers. Generation Z (Zoomers) was born between '1997 and 2012'. Its youngest members are only nine and will not become adults until 2030, while its oldest members are 24. Zoomers, compared to other generations, are more tech-savvy.

Schimmele, Fonberg and Schellenberg (2021) argue that youth prefer to use the internet and social platforms for various purposes compared to older generations. Engaging online can expose young people to an elevated risk of experiencing cyber fraud. Studies by Farrukh, Sadwick and Villasenor (2014); Zhang and Ye (2022); Hango Darcy(2023); Lin, Tunku and Rahman, (2023) discuss cyber victimisation among youth.

2.2 E-commerce Deception

Scholars have been alerting the public for a while now to the dangers of deliberate Deception on the Internet (Grazioli and Jarvenpaa, 2000; Jarvenpaa, 1999; Kauffman et al., 2000). The theory of Deception (Johnson et al., 1993) defines intentional Deception as a purposeful process where an agent, known as the Deceiver, intentionally induces a false representation in another agent, referred to as the Target.

Deception in marketing practice is defined as the intentional inculcation of false information or thoughts in the minds of consumers(Aditya, 2001a). Studies suggest

that engaging in deceptive selling practices has been observed to engender a decrease in the satisfaction of consumers and trust (Ingram et al., 2005; Román and Ruiz, 2005).

In the present study, our attention is directed towards deceptive online practices that can impact consumers' buying choices. The familiarity with online platforms results in a distinct response pattern towards product recommendations among Gen Z. The exposure to technology during their formative years may have fostered a greater trust towards OPR among young consumers. Conversely, they may harbour equal levels of distrust toward such recommendations.

2.3 Theoretical Model

This study draws on five evaluation factors: (1) Perceived Usefulness derives from the Information Systems Continuance Model (Bhattacherjee, 2001a). (2) Perceived Enjoyment is based on flow theory (Csikszentmihalyi, 1998). (3) Perceived Deception is adopted from the deception detection model (Johnson, Grazioh and Jamal, 1993). (4) Perceived Risk is formulated following relevance and rigour, which will yield in the OPR evaluation criteria. (5) Continous Usage Intention of OPR is put forward as per the Expectation-Confirmation theory, which was proposed by Bhattacherjee (2001b).

Figure 1 shows that the proposed research model encompasses Perceived Deception and perceived Risk as social-psychological beliefs, Perceived Usefulness as an Instrumental belief, and perceived Enjoyment as an affective/hedonic belief to elucidate a customer's decision of OPR continuance intention.
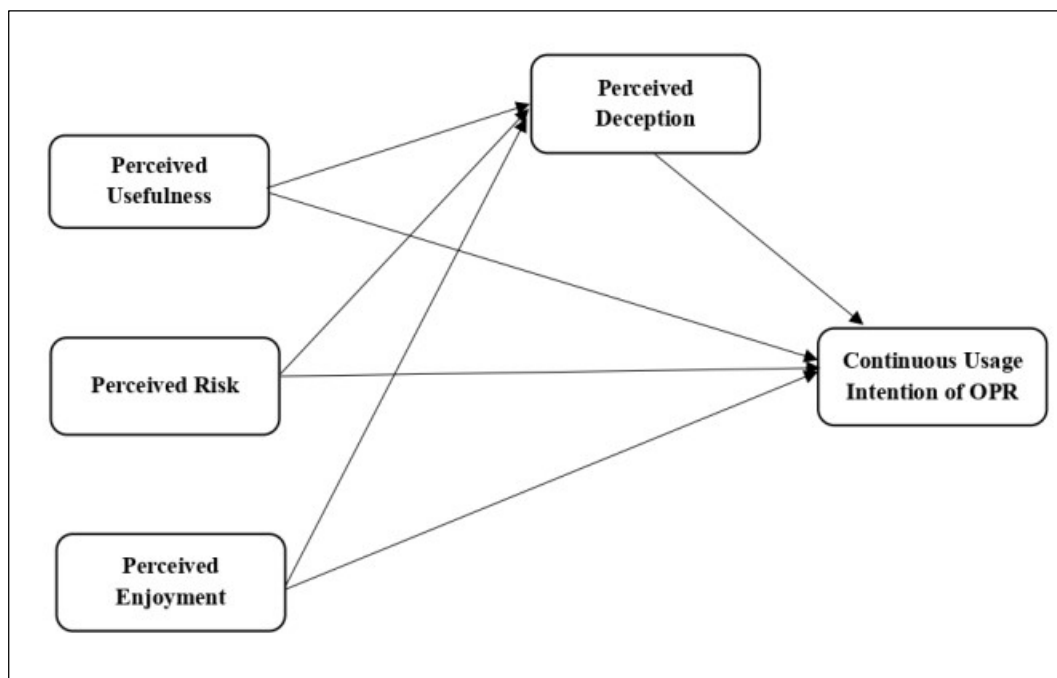

Figure 1 – Research Framework

3   HYPOTHESES

3.1 Perceived Usefulness and Continuous Usage Intention of OPR

Usefulness in the context of OPR pertains to the extent to which a consumer perceives that utilising an OPR would improve their ability to evaluate products(Benlian, Titah and Hess, 2010). OPRs are considered beneficial for consumers in assessing and selecting products from a vast array of options offered on e-commerce platforms (Benlian, Titah and Hess, 2012a).

The substantial impact of Perceived Usefulness (PU) on consumers' intention for continuous usage has been demonstrated in multiple studies within the OPR field (A. Benlian et al., 2012; Bhattacherjee, 2001 a,b; Bhattacherjee et al., 2004; Sheng and Zolfagharian, 2014).

Those customers who perceive OPR to be useful will have a higher intention to continue OPR usage and be more likely to respond to the recommended product positively. Therefore, the higher the Usefulness perceived by the customers, the higher the likelihood of persisting in their intention to utilise the website repeatedly.

H1: Perceived Usefulness positively influences consumers' intention to continue using the Online Product Recommendation (OPR) website.

3.2 Perceived Enjoyment and Continuous Usage Intention of OPR

Perceived Enjoyment may be considered a form of affective response. The subjective evaluation of Enjoyment shapes customers' evaluative perception of Online Product Recommendation (OPR) concerning the extent to which the use of OPR is seen as pleasurable in its own right, regardless of any result that may be foreseen (Xu et al., 2014).

Previous studies have shown that the perception of Enjoyment significantly influences the intention across various aspects, such as customer loyalty to an e-commerce platform (Cyr et al., 2009; Koufaris, 2002). According to previous findings, it is hypothesised that customers' intentions to continue using and make purchases on the Online Product Recommendation (OPR) platform will also be affected by their anticipation of Enjoyment with the OPR.

H2: Perceived Enjoyment positively influences consumers' continuous usage intention of the Online Product Recommendation (OPR) website.

3.3 Perceived Risk and Continuous Usage Intention of OPR

Perceived Risk is the individual's cognitive perception of ambiguity and potential adverse outcomes associated with engaging in a particular activity (Dowling and Staelln, 1994; Grazioli and Jarvenpaa, 2000b)

Previously conducted studies have indicated that consumers' search behaviours and decision outcomes may change the degree of Risk incurred in a purchase(Beatty and

Smith, 1987). Previous research has established the relationship between perceived Risk and Online Product Recommendations (Forsythe and Shi, 2003; Hsu *et al.*, 2008; Saleh and Abushanab, 2010)

Hence, it is hypothesised that users who perceive higher levels of Risk associated with online recommendation systems will have lower intentions to continue using the system over time (Doolin, 2005; Cheng et al., 2012).

H3: Perceived Risk negatively influences consumers' continuous intention to use the online product recommendation (OPR) website.

3.4　Perceived Usefulness, Perceived Enjoyment, Perceived Risk and Perceived Deception

Specific marketing tactics or unscrupulous techniques could potentially deceive Generation Z consumers, leading them to perceive the patterns and routines of specific websites as genuine despite their fraudulent nature. If those patterns and routines they come across in their digital upbringing may make them adopt those marketing tactics subconsciously, it also affects their belief system(Grazioli and Jarvenpaa, 2000c, 2003; Aditya, 2001a). Hence, it is hypothesised that,

H4: In the interaction of OPR, the Perceived Usefulness of the website will negatively influence perceived deception practices.

H5: In the interaction of OPR, Perceived Enjoyment of the website will negatively influence perceived deception practices.

When consumers perceive a product or service as deceptive, their perceived risk increases, decreasing their willingness to purchase or engage with the offering (Forsythe and Shi, 2003).

H6: In the interaction of OPR, the Perceived Risk of the website will positively influence perceived deception practices.

3.5 Perceived Deception and OPR Continuous Usage Intention

OPR continuous usage intention is the dependent variable in the study, representing consumers' likelihood of encountering online deceptions that influence their decision to continue using a website. Manipulation in the content and presentation of the website can draw attention to certain areas, promote comparisons, make strong recommendations, and instil a sense of urgency in users to make immediate purchases.

Deceptive techniques by online providers can lead to unrealistic expectations, impacting user intention (Johnson et al., 2001). Therefore, online providers must provide accurate and transparent information to align consumer expectations with the reality of their products or services. Consequently, we proposed that:

H7: Perceived Deception in online product recommendation (OPR) negatively influences users' OPR continuous usage intention.

4   RESEARCH METHODOLOGY

4.1 Survey Instrument

The research model presented in Figure 1 was tested via a Purposive sampling method through which data was collected. A survey questionnaire adapted from prior literature based on customers' variables and demographic factors is framed and validated by an expert panel (comprising four members, including two academicians and two online customers). Pretesting (involving five academicians) and pilot testing (involving 50 e-commerce customers) were conducted. Measures for Perceived Usefulness are taken from Benbasat and Wang (2005). Perceived enjoyment measures were adopted from the studies of J. Xu, Benbasat and Cenfetelli (2014). Perceived Risk was adopted from the experimental studies of Jarvenpaa et al. (2000b). Perceived Deception measures were based on Román's (2010) studies. The dependent variable OPR continuous usage intention was adopted from the studies of A. Benlian et al. (2012).

All survey items are measured using a 5-point Likert scale anchored by "1 for strongly disagree" and "5 for strongly agree". Screening questions are incorporated to ascertain Gen Z demographic cohorts and those currently using OPR.

4.2 Sample

Those born between 1997 and 2012 (Gen Z) were chosen for the study as they represent the online consumer population (Gefen, Karahanna and Straub, 2003). Young consumers prioritise online reviews and recommendations over traditional methods. Kelly, Kerr and Drennan (2010) emphasise the significance of OPR in their decision-making process.

4.3 Descriptive Statistics

The e-commerce revolution occurred mainly in urban areas of developing countries like India. A survey was conducted in four major metropolitan cities: Delhi, Kolkata, Kochi, and Ahmedabad. These cities were chosen to represent different regions of India: North, East, South, and West. Primary data was collected from 512 participants through online and offline methods. A mall intercept survey was used to gather the desired sample, using a structured questionnaire using traditional (pen and paper) and digital (mobile phones, tablets) methods. The survey was conducted in major shopping malls in each city, as the 'Mall culture' is popular among the youth.

Among 512 respondents, 24 were excluded from the dataset because of non-response, incomplete data, or did not use Recommendation systems, resulting in a usable sample of 488 responses. In terms of sample size, it is recommended to have an adequate number that is five to ten times the number of measurement items (Joseph F. Hair et al., 2010). This study fulfils the criteria of a sufficient sample size.

Table 1 – Descriptive Statistics

Variable		Frequency (Percentage)
Age	18 - 20 Years	144 (29.5)
	21 - 24 Years	344 (70.5)
Gender	Male	99 (20.3)
	Female	389 (79.7)
Marital Status	Married	230 (47.1)
	Unmarried	258 (52.9)
Nature of family	Joint family	243 (49.8)
	Nuclear family	245 (50.2)
Education Qualification	School Level	73 (15.0)
	Under Graduate	299 (61.3)
	Post Graduate	116 (23.8)
Monthly Income of the family	Below Rs. 20,000	131 (26.8)
	Rs. 20,001 – Rs. 40,000	227 (46.5)
	Rs. 40,001 – Rs. 60,000	130 (26.6)
Size of Residence Area	Rural	88 (18.0)
	Semi-Urban	81 (16.6)
	Urban	150 (30.7)
	Metropolitan	169 (34.6)
		Weighted Mean (Standard Deviation)
Involvement with Buying Online*		2.37 (0.647)
How long have you been buying online?**		2.81 (0.952)
Frequency of browsing/day***		2.69 (1.074)
Products purchased in last three months through online ****		2.46 (0.789)
Purchasing through OPR*****		2.27 (0.880)

*Anchored at 1= "Low" and 3 = "High" ** Anchored at 1= "Less than 1 year" and 6 = "More than 12 years", *** Anchored at 1= "Less than 1 hour" and 4 = "I am always online", **** Anchored at 1= "1-5" and 5 = "More than 20 ", ***** Anchored at 1= " Maybe " and 3 = "Yes"

Table 1 shows the Respondents' demographic characteristics. The demographic results indicated that 70.5% of respondents come under the age group of 21-24 years, 79.7 % were Female, 52.9% were Unmarried, 50.2% belonged to a nuclear family, 61.3% had Undergraduate degree, 46.5% respondents had a family monthly income of Rs. 20,001 – Rs. 40,000 and 34.6 % were residing in Metropolitan Cities. On average, respondents have been involved with buying online on a medium level; they have been buying online for over 1 to 3 years and spend 1 to 2 hours browsing e-commerce sites daily. Further, the mean value shows respondents have purchased

through OPR (mean = 2.27, SD = 0.880) and, on average, 6-10 products have been purchased online over the last three months.

5 DATA ANALYSIS AND RESULTS

Data was analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software (Ringle et al., 2022). PLS-SEM is a methodology for Structural Equation Modeling that emphasises forecasting when estimating statistical models and strives to provide causal justifications (Sarstedt et al., 2022; Wold, 1982).

5.1 Common Method Variance (CMV) Analysis

For addressing measurement bias in statistical analysis, a Common Method Variance (CMV)/ Common Method Bias (CMB) analysis is carried out using Variance Inflation Factor (VIF) values from the inner model in SmartPLS 4.0 software. The study results show VIF values below 3.33, indicating the absence of Common Method Variance (CMV) (Kock, 2015) and suggesting that CMB is unlikely to be an issue in this study.

5.2 Measurement Model

The study is based on a reflective measurement model, highlighting the importance of assessing internal consistency reliability. Composite Reliability (rho_C), the key measure in PLS-SEM, has all values exceeding '.70' (Refer Table 2). Cronbach's alpha also assesses internal consistency reliability and all values are above '.70'. Some researchers suggest using rho A as a more consistent reliability coefficient, which typically falls between Cronbach's alpha and composite reliability. Our study confirms this approach as a suitable compromise between the two measures(Dijkstra and Schermelleh-Engel, 2014; Dijkstra and Henseler, 2015). The results of the measurement model are presented below,

Table 2 – Results of the measurement model

Variables	Cronbach's Alpha α	rho_A	Composite Reliability (rho_C)	AVE
PU	0.747	0.752	0.841	0.570
PR	0.713	0.736	0.824	0.543
PE	0.761	0.762	0.839	0.511
PD	0.729	0.73	0.830	0.550
CUI	0.803	0.826	0.858	0.503

Note: PU – Perceived Usefulness, PR – Perceived Risk, PE – Perceived Enjoyment, PD – Perceived Deception, CUI – Continuous Usage Intention.

The study assessed discriminant validity using the Fornell-Larcker Criterion by comparing AVE square roots with inter-construct correlations. AVE square roots are higher than inter-construct correlations, indicating strong discriminant validity for the construct (Henseler, Ringle and Sarstedt, 2015; Hair et al., 2019), shown in Tab. 3.

Table 3 – Discriminant Validity

	CUI	PD	PE	PR	PU
CUI	**0.709**				
PD	0.592	**0.742**			
PE	0.505	0.537	**0.715**		
PR	0.489	0.379	0.325	**0.737**	
PU	0.725	0.510	0.468	0.511	**0.755**

Notes: The square root of the average variance extracted (AVE), denoted by the diagonal elements in bold font, must exceed the inter-construct correlations (off-diagonal elements) to ensure adequate discriminant validity.

PU – Perceived Usefulness, PR – Perceived Risk, PE – Perceived Enjoyment, PD – Perceived Deception, CUI – Continuous Usage Intention.

5.3 Structural Model

Hypotheses testing is done using PLS. The PLS results are depicted in Fig 2 and Table 4.

Table 4 – Hypotheses Results

Hypotheses & Relationships	B	SD	T	P	Results
H1: PU -> CUI	0.505***	0.060	8.478	0.000	Supported
H2: PE-> CUI	0.106***	0.041	2.606	0.009	Supported
H3: PR-> CUI	0.107***	0.032	3.363	0.001	Supported
H4: PU-> PD	-0.277***	0.045	-6.100	0.000	Supported
H5: PE-> PD	-0.370***	0.044	-8.325	0.000	Supported
H6: PR-> PD	0.117**	0.048	2.425	0.015	Supported
H7: PD -> CUI	-0.237***	0.039	-6.071	0.000	Supported

Notes: B – Beta Coefficient, SD – Standard Deviation, T is t – statistics, P is p – values

PU – Perceived Usefulness, PR – Perceived Risk, PE – Perceived Enjoyment, PD – Perceived Deception, CUI – Continuous Usage Intention.

***$p < 0.001$, **$p < 0.01$.

First, the results show a significant positive influence on Continuous Usage Intention of OPR by Perceived Usefulness (b = 0.505, $p < 0.001$), Perceived Enjoyment (b = 0.106, $p < 0.001$), and Perceived Risk (b = 0.107, $p < 0.001$). Hence,

H1, H2 and H3 are supported. Secondly, a crucial negative influence of Perceived Usefulness (b = - 0.277, p < 0.001) and Perceived Enjoyment (b = - 0.370, p < 0.001) on Perceived Deception was shown. So, H4 and H5 are supported. Consequently, Perceived Risk (b = 0.117, p < 0.01) significantly influences Perceived Deception. Hence, H6 is also supported. Third, the results also show that Perceived Deception (b = - 0.237, p < 0.001) negatively influences the Continuous Usage Intention of OPR. Therefore, H7 is supported. The accepted threshold of 0.10 for exploratory power (R^2) is satisfied in this study by Perceived Deception (<0.38) and Continuous Usage Intention (<0.61) (Falk and Miller, 1992).
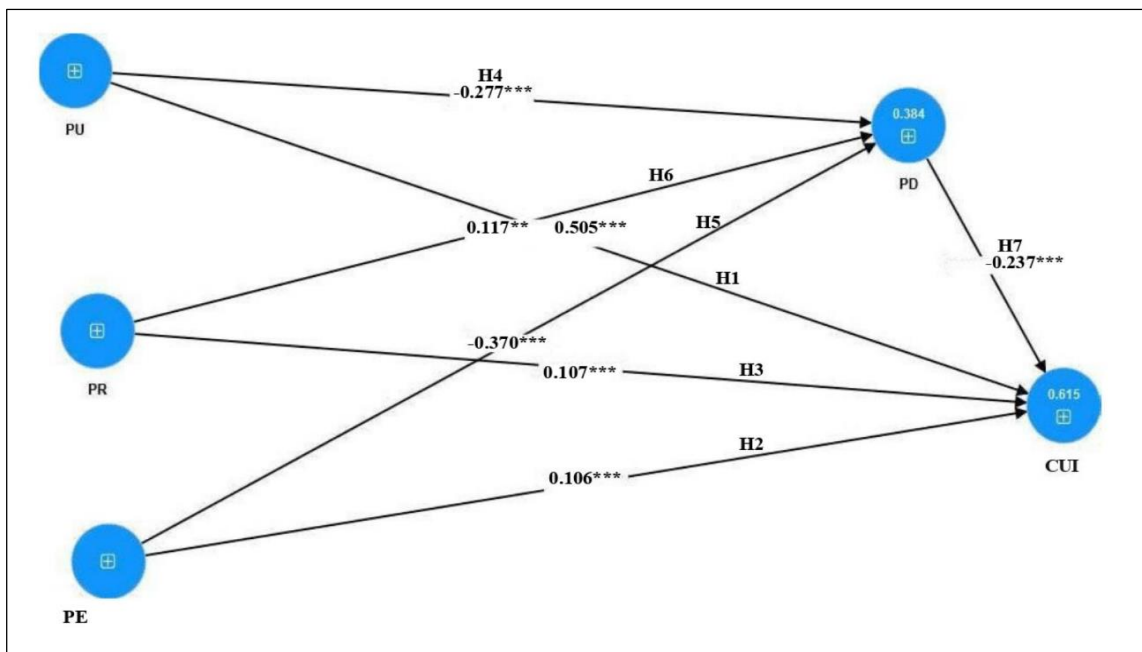

Figure 2 – Hypotheses Result

***p < 0.001, **p < 0.01.

6 CONCLUSION

6.1 Discussion of the Findings

The study has several implications on belief categories that influence Generation Z's usage of the OPR website. By focusing on the criticality of deceptive practices on the intention to use the website continuously, this is the first research study to analyse many concepts together, to the best of the author's knowledge.

Results indicate the positive influence of Perceived Usefulness and Enjoyment on Gen Z consumers' intention to use the OPR website. Gen Z, being tech-savvy, finds satisfaction in the Usefulness and Enjoyment of e-commerce websites. Previous research supports the idea that customers who find OPR useful are more likely to continue usage and respond positively to recommended products (A. Benlian et al.,

2012; Bhattacherjee, 2001b; Bhattacherjee et al., 2004; Sheng and Zolfagharian, 2014).

The younger generation distinguishes itself from older age groups through their adeptness in financial management and mindful consumption habits. Concerns regarding online security are prevalent among Gen Z individuals, who are vigilant about privacy threats and unauthorised data aggregation (Schimmele, Fonberg and Schellenberg, 2021). Risk perception exerts a detrimental impact on individuals' intention to continue their usage of online platforms. These findings validate the previous studies conducted by Doolin (2005), Forsythe and Shi (2003). Even though Gen Z is skilled in technology, there is a wide range of risk perceptions in online interactions. Due to digital literacy education, certain individuals strongly understand privacy and security risks.

Conversely, some may underestimate these risks because they feel invincible in the digital world. Individuals who underestimate online risks are more likely to be deceived by scams. Consequently, those with greater risk awareness may be more cautious but still vulnerable to sophisticated scams.

Gen Z places a high value on perceived Usefulness over mere efficiency, incorporating factors such as social benefit and the connectivity provided by digital platforms. Despite their strong appreciation for these factors of OPR, they may sometimes fail to consider potential risks when enticed by promises of social connection or educational opportunities. This generation actively seeks Enjoyment and amusement, preferring immersive online experiences that may make them susceptible to deceptive techniques such as gamified scams or phishing. Their engagement with entertaining content can diminish their ability to evaluate risks critically.

Finally, we posit that perceived Deception negatively impacts users' intention to continue using an OPR website. In circumstances where individuals experience Deception, manipulative information, or fraudulent activities from a website, like any other generation cohorts, Gen Z's trust level is negotiated, leading to a decreased likelihood of interacting with the site in the future.

6.2   Practical Implications

The COVID-19 pandemic has set the stage for a rise in online consumer shopping, leading to a notable surge in fraudulent activities (Federal Trade Commission, n.d.). Despite the considerable prevalence of fraud within consumer settings, the lack of scholarly investigations into this issue is surprising (Van Wilsem, 2013).

This research focuses on Gen Z's intention to keep using OPR websites. Gen Z cohorts need immediate attention due to their boundless access to the wealth of information and choices. They expect nothing but transparency, authenticity, and robust principles. Brands and marketers need to communicate transparently. Effective communication on appropriate platforms in an authentic way is essential to connect with this generation.

Another essential thing to consider is the relative frugality of this generation, which is much less impulsive than it appears. Various studies show that over 70% of Gen Z prioritise financial security (Rosenbaum, Russell-Bennett, and Contreras-Ramírez, 2022). So, they will focus on saving and budgeting their money wisely while doing banking transactions. They must be careful about the latest technological advancements and their loopholes in privacy infringement.

Digital literacy is crucial in preventing fraud. The study demands a critical need to educate consumers about fraudulent tactics and prevention strategies. Awareness campaigns are recommended for this purpose.

In developing countries, the law related to e-commerce fraud is still in its preliminary stages, leaving customers with few options to proceed with legal actions and criminal prosecutions (Button, 2017). It is essential to provide legal protection under new regulations.

Analysing Gen Z's purchasing habits and preferences is essential. They are future consumers whose vision and perspectives radically transform consumption patterns. They will continue to influence online and offline retail. Creating value-added hybrid experiences is a significant challenge that needs to be implemented among e-commerce websites.

6.3 Theoretical Implications

This study illustrates the value of integrating various theoretical frameworks, such as the Information systems continuance model, flow theory, model of deception detection, and recommendation and acceptance literature. By amalgamating diverse frameworks' perspectives, the research offers extensive insight into the core mechanisms influencing users' behaviours and intentions within the online marketplace.

One of the critical limitations of this study is its sampling, which focuses on Gen Z consumers at malls in the metropolitan area, which limits generalizability. Furthermore, surveys should be conducted outside the metro area for diverse representation. Online surveys and virtual focus groups should also be considered.

The findings of this research propose numerous paths for future investigations, such as delving into additional factors that might impact users' perceptions and actions in OPR systems, investigating potential moderators and mediators of the recognised relationships, and scrutinising cross-cultural differences in users' responses to online Deception. By tackling these research areas, upcoming studies can further progress theoretical comprehension of online consumer behaviour and implement efficient interventions and strategies in e-commerce environments.

REFERENCES

Aditya, R.N., 2001a. The psychology of deception in marketing: A conceptual framework for research and practice', *Psychology & Marketing*, 18(7), pp. 735–761. https://doi.org/https://doi.org/10.1002/mar.1028.

Alba, J. *et al.,*1997. *Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces*, *Journal of Marketing*. http://www.shopfido.com.

Apau, R. and Koranteng, F.N., 2019. Impact of cybercrime and trust on the use of e-commerce technologies: An application of the theory of planned behavior, *International Journal of Cyber Criminology*, 13(2), pp. 228–254. https://doi.org/10.5281/zenodo.3697886.

Ashraf, M., Ismawati Jaafar, N. and Sulaiman, A., 2019. System- vs. consumer-generated recommendations: affective and social-psychological effects on purchase intention', *Behaviour and Information Technology*, 38(12), pp. 1259–1272. https://doi.org/10.1080/0144929X.2019.1583285.

Beatty, S.E. and Smith, S.M., 1987. External Search Effort: An Investigation Across Several Product Categories, *Journal of Consumer Research*, 14(1), pp. 83–95. http://www.jstor.org/stable/2489245.

Benbasat, I. and Wang, W., 2005. Trust In and Adoption of Online Recommendation Agents, *Journal of the Association for Information Systems*, 6(3), pp. 72–101. https://doi.org/10.17705/1jais.00065.

Benlian, A., Titah, R. and Hess, T., 2012a. Differential Effects of Provider Recommendations and Consumer Reviews in E-Commerce Transactions: An Experimental Study, *Journal of Management Information Systems*, 29, pp. 237–272. https://doi.org/10.2307/41713875.

Benlian, A., T.R., & H.T., 2010. Provider-vs. user-generated recommendations on e-commerce websites–comparing cognitive, affective and relational effects. In: *ICIS 2010 Proceedings*.

Bhattacherjee, A. 2001a. An empirical analysis of the antecedents of electronic commerce service continuance, *Decision Support Systems*, 32(2), pp. 201–214. https://doi.org/10.1016/S0167-9236(01)00111-7.

Bhattacherjee, A., 2001b. Understanding Information Systems Continuance: An Expectation-Confirmation Model, *MIS Quarterly*, 25, pp. 351–370https://doi.org/10.2307/3250921.

Bhattacherjee, A. *et al.,* 2004. *Understanding Changes in Belief and Attitude toward Information Technology Usage: A Theoretical Model and Longitudinal Test, MIS Quarterly*.

Black, W.C., Babin, B.J. and Anderson, R.E., 2010. *Multivariate data analysis: A global perspective*. Chester: Pearson.

Bong, X.L., 2023. *A study of awareness of cyber scams and cybersecurity among university students in Malaysia*. Universiti Tunku Abdul Rahman. Available at: http://eprints.utar.edu.my/5842/ [Accessed 23.07.2024].

Button, M. and Cross, C., 2017. Cyber frauds, scams and their victims. Routledge.

Cheng, S.Y. *et al.,* 2012. Predicting intention to purchase on group buying website in Taiwan: Virtual community, critical mass and risk, *Online Information Review*, pp. 698–712. https://doi.org/10.1108/14684521211275984.

Csikszentmihalyi, M., 1998. Finding Flow: The Psychology of Engagement With Everyday Life, in, p. 144.

Cyr, D., Head, M. and Ivanov, A., 2009. Perceived interactivity leading to e-loyalty: Development of a model for cognitive-affective user responses, *International Journal of Human-Computer Studies*, 67(10), pp. 850–869. https://doi.org/10.1016/j.ijhcs.2009.07.004.

Dabholkar, P.A. and Sheng, X., 2012 Consumer participation in using online recommendation agents: Effects on satisfaction, trust, and purchase intentions, *Service Industries Journal*, 32(9), pp. 1433–1449. https://doi.org/10.1080/02642069.2011.624596.

Dijkstra, T.K. and Schermelleh-Engel, K., 2014. Consistent partial least squares for nonlinear structural equation models. Psychometrika, 79, pp.585-604.

Dijkstra, T.K. and Henseler, J., 2015. Consistent partial least squares path modeling. MIS quarterly, 39(2), pp.297-316.

Doolin, B., Dillon, S., Thompson, F. and Corner, J.L., 2005. Perceived risk, the Internet shopping experience and online purchasing behavior: A New Zealand perspective. *Journal of Global Information Management*, 13(2), pp.66-88.

Dowling, G.R. and Staelln, R., 1994. *A Model of Perceived Risk and Intended Risk-handling Activity*. http://jcr.oxfordjournals.org/.

Falk, R.F. and Miller, N.B., 1992. *A primer for soft modeling. A primer for soft modeling*. Akron, OH, US: University of Akron Press.

Farrukh, A., Sadwick, R. and Villasenor, J., 2014. Youth Internet Safety: Risks, Responses, and Research Recommendations, *The Brookings Institution.* [Preprint]. Available at: http://eprints.utar.edu.my/5842/ [Accessed 23 June 2024].

Federal Trade Commission (no date) *Facts about fraud from the FTC – and what it means for your business*, *Federal Trade Commission*. Available et https://www.ftc.gov/business-guidance/blog/2024/02/facts-about-fraud-ftc-what-it-means-your-business [Accessed: 22 April 2024].

Forsythe, S.M. and Shi, B., 2003. Consumer patronage and risk perceptions in Internet shopping, *Journal of Business Research*, 56(11), pp. 867–875.: https://doi.org/10.1016/S0148-2963(01)00273-9.

Gefen, D., Karahanna, E. and Straub, D.W., 2003. Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, pp.51-90.

Grazioli, S. and Jarvenpaa, S.L., 2000b. Perils of Internet fraud: An empirical investigation of deception and trust with experienced Internet consumers. *IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans*, 30(4), pp.395-410. https://doi.org/10.1109/3468.852434.

Grazioli, S. and Jarvenpaa, S.L., 2003. Deceived: Under target online. *Communications of the ACM*, 46(12), pp.196-205.

Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, C.M., 2019. When to use and how to report the results of PLS-SEM, *European Business Review*. Emerald Group Publishing Ltd., pp. 2–24. https://doi.org/10.1108/EBR-11-2018-0203.

Hango Darcy.,2023. *Online harms faced by youth and young adults: The prevalence and nature of cybervictimization*. Statistics Canada. Available at: www.statcan.gc.ca [Accessed 23 July 2024].

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C., 1998. Multivariate data analysis prentice hall. Upper Saddle River, NJ, 730.

Henseler, J., Ringle, C.M. and Sarstedt, M., 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling, *Journal of the Academy of Marketing Science*, 43(1), pp. 115–135. https://doi.org/10.1007/s11747-014-0403-8.

Hsu, H.Y., Chen, W.Y., Weng, C.S. and Lin, S.P., 2008. Risk-reduction strategies for internet shopping of search goods and experience goods. In PICMET'08-2008 Portland International Conference on Management of Engineering & Technology (pp. 1052-1059). IEEE.

Ingram, R., Skinner, S.J. and Taylor, V.A., 2005. Consumers' evaluation of unethical marketing behaviors: The role of customer commitment, *Journal of Business Ethics*, 62(3), pp. 237–252. https://doi.org/10.1007/s10551-005-1899-0.

Jarvenpaa, S.L. and Grazioli, S., 1999. Surfing among sharks: how to gain trust in Cyberspace. Financial Times, Mastering Information Management, 7, pp.2-3.

Jarvenpaa, S.L., Tractinsky, N. and Vitale, M., 2000a. Article in Information Technology and Management, *Information Technology and Management*, 1, pp. 45–71. https://doi.org/10.1023/A:1019104520776.

Jarvenpaa, S.L. and Grazioli, S., 1999. Surfing among sharks: how to gain trust in Cyberspace. Financial Times, Mastering Information Management, 7, pp.2-3.

Johnson, P.E., Grazioli, S., Jamal, K. and Berryman, R.G., 2001. Detecting deception: Adversarial problem solving in a low base-rate world. *Cognitive Science*, 25(3), pp.355-392.

Johnson, P.E., Grazioli, S. and Jamal, K., 1993. Fraud detection: Intentionality and deception in cognition. Accounting, *Organisations and Society*, 18(5), pp.467-488.

Kauffman, R. and Wood, C., 2000. Follow the leader? Strategic pricing in e-commerce.

Kelly, L., Kerr, G. and Drennan, J., 2010. Avoidance of Advertising in Social Networking Sites, *Journal of Interactive Advertising*, 10(2), pp. 16–27. https://doi.org/10.1080/15252019.2010.10722167.

Kock, N., 2015. Common method bias in PLS-SEM: A full collinearity assessment approach, *International Journal of e-Collaboration*, 11(4), pp. 1–10. https://doi.org/10.4018/ijec.2015100101.

Koufaris, M., 2002. Applying the Technology Acceptance Model and flow theory to online Consumer Behavior, *Information Systems Research*, 13(2), pp. 205–223. https://doi.org/10.1287/isre.13.2.205.83.

Maes, P., Guttman, R.H. and Moukas, A.G., 1999. Agents that buy and sell. Communications of the ACM, 42(3), pp.81-ff.

Norton Cyber Safety Insights Report., 2021.

Reep-van den Bergh, C.M.M. and Junger, M., 2018. Victims of cybercrime in Europe: a review of victim surveys, *Crime Science*, 7(1). https://doi.org/10.1186/s40163-018-0079-3.

Ringle, C.M., Wende, S. and Becker, J.M., 2022. SmartPLS 4. Oststeinbek: SmartPLS GmbH.

Román, S., 2010. Relational Consequences of Perceived Deception in Online Shopping: The Moderating Roles of Type of Product, Consumer's Attitude Toward the Internet and Consumer's Demographics, *Journal of Business Ethics*, 95(3), pp. 373–391. https://doi.org/10.1007/s10551-010-0365-9.

Román, S. and Ruiz, S., 2005. Relationship outcomes of perceived ethical sales behavior: The customer's perspective, *Journal of Business Research*, 58(4), pp. 439–445. https://doi.org/10.1016/j.jbusres.2003.07.002.

Rosenbaum, M.S., Russell-Bennett, R. and Contreras-Ramírez, G., 2022. Research priorities in the new service marketplace, *Journal of Services Marketing*, 36(8), pp. 1009–1014. https://doi.org/10.1108/JSM-06-2022-0190.

Saleh, Z.I. and Abushanab, E., 2010. The role of risk related knowledge in the diffusion of internet innovations, *Journal of Information and Knowledge Management*, 9(1), pp. 31–40. https://doi.org/10.1142/S0219649210002474.

Sandywell, B., 2009. *On the globalisation of crime: The Internet and new criminality*. Edited by In Y. Jewkes and M. Yar. Routledge.

Marko, S., Ringle, Ch.M., Hair, J.F., 2022. Partial Least Squares Structural Equation Modeling, in M. and V.A. Homburg Christian and Klarmann (ed.)

Handbook of Market Research. Cham: Springer International Publishing, pp. 587–632. https://doi.org/10.1007/978-3-319-57413-4_15.

Schimmele, C., Fonberg, J. and Schellenberg, G., 2021. Canadians' assessments of social media in their lives. *Economic and Social Reports*. https://doi.org/10.25318/36280001202100300004-eng.

Sheng, X., Li, J. and Zolfagharian, M.A., 2014. Consumer initial acceptance and continued use of recommendation agents: Literature review and proposed conceptual framework. International Journal of Electronic Marketing and Retailing, 6(2), pp.112-127.

Sheng, X. and Zolfagharian, M., 2014.Consumer participation in online product recommendation services: Augmenting the technology acceptance model', *Journal of Services Marketing*, 28(6), pp. 460–470. https://doi.org/10.1108/JSM-04-2013-0098.

Van Wilsem, J., 2013. Hacking and Harassment-Do They Have Something in Common? Comparing Risk Factors for Online Victimisation, *Journal of Contemporary Criminal Justice*, 29(4), pp. 437–453. https://doi.org/10.1177/1043986213507402.

Wold, H., 1982. Models for knowledge. The making of statisticians, pp.189-212.

Xu, J., Benbasat, I. and Cenfetelli, R.T., 2014. The nature and consequences of trade-off transparency in the context of recommendation agents. MIS Quarterly, 38(2), pp.379-406.https://doi.org/10.2307/26634931.

Yoshida, K., Tsuda, K., Kurahashi, S. and Azuma, H., 2013. Mining Online Shopping Frauds--A Non-Data Mining Approach. International Journal of e-Education, e-Business, e-Management and e-Learning, 3(5), p.365. https://doi.org/10.7763/ijeeee.2013.v3.260.

Zhang, Z. and Ye, Z., 2022. The role of social-psychological factors of victimity on victimisation of online fraud in China, *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.1030670.

ABOUT THE AUTHORS

Shiraz Parveen [0009-0006-8127-9307] (S.P) – Doctoral Candidate, Department of Business Administration at Avinashilingam Institute for Home Science and Higher Education for Women, India, e-mail: 21phbaf003@avinuty.ac.in.

Ramya Krishnaraj [0000-0001-8564-4355] (R.K.) – Assistant Professor, Department of Business Administration at Avinashilingam Institute for Home Science and Higher Education for Women, India, e-mail: ramya_mba@avinuty.ac.in.

AUTHOR CONTRIBUTIONS

Conceptualisation, R. K. and S.P.; Methodology, R. K.; Software, S.P.; Validation, R. K.; Formal analysis, R. K. and S.P.; Investigation S.P.; Original draft preparation, S.P.; Review and editing, R. K.; Supervision, R. K.

CONFLICTS OF INTEREST

The authors declare no conflict of interest. The funders had no role in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.