



**Ethical and Security Challenges in Multimedia-Driven E-commerce Platforms.**

**A**

**Professional and Social Issues Research  
Project**

**Presented to the Faculty of  
Mindoro State University Bongabong Campus  
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Oriental Mindoro**

**In Partial Fulfillment  
of the Requirements for the Degree  
Bachelor of Science in Information Technology**

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### ABSTRACT

E-commerce platforms increasingly embed rich multimedia—product videos, 3D previews, and AI-driven recommendations—to enhance the online shopping experience. While these features can improve customer understanding and engagement, they introduce new ethical and security risks: deepfakes can fabricate product demonstrations, user data collection may violate privacy, fake reviews can mislead buyers, and multimedia upload interfaces can become vectors for malware or social-engineering attacks. This quantitative descriptive study surveyed 200 Mindoro State University students (ages 20–21) on their online shopping habits, trust in multimedia, privacy concerns, and attitudes toward platform responsibility. Analysis (frequency, percentage, mean, mode) reveals moderate trust in multimedia but high concern over manipulation and data use. Respondents overwhelmingly demand transparent data practices and robust content verification. We conclude that to build user trust, e-commerce platforms must implement clear ethical guidelines, deploy AI for authenticity checks, enhance encryption and access controls, and provide consumer education on multimedia literacy.



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## Chapter 1 – THE PROBLEM AND ITS BACKGROUND

### 1.1 Background of the Study

The rise of multimedia-driven e-commerce—incorporating product videos, 3D previews, and AI recommendations—aims to replicate in-store experiences (Kietzmann & Pitt, 2020). Yet advances like deepfake video and AI-generated images can fabricate product demonstrations, eroding trust (Nguyen et al., 2019). Simultaneously, platforms harvest granular user data—clickstreams, dwell time, purchase history—to fuel recommendation engines, raising privacy and ethical concerns (Amil, 2024; Fazlioglu, 2024). Fake reviews further distort trust, with organized networks promoting substandard or fraudulent goods (Rynarzewska, 2024; CloudSEK, 2025). Moreover, user-uploaded multimedia can become an attack vector for malware or social engineering. This study investigates how multimedia features affect consumer trust and privacy perceptions, and explores ethical and security measures that platforms should adopt.

### 1.2 Statement of the Problem

1. To what extent do users trust multimedia features (videos, 3D previews) in e-commerce?
2. How concerned are users about manipulated multimedia content?
3. What are users' perceptions of privacy and data security on multimedia-driven platforms?
4. Which ethical and technical measures do users believe platforms should implement?

### 1.3 Statement of Hypothesis

**H<sub>1</sub>** Users exhibit moderate trust in multimedia features but high concern over manipulation.



**H<sub>2</sub>** Users demand stronger privacy protections and transparent data-use policies.

**H<sub>3</sub>** Users support the adoption of AI-based content verification and clearer ethical guidelines.

### 1.4 Scope and Limitation of the Study

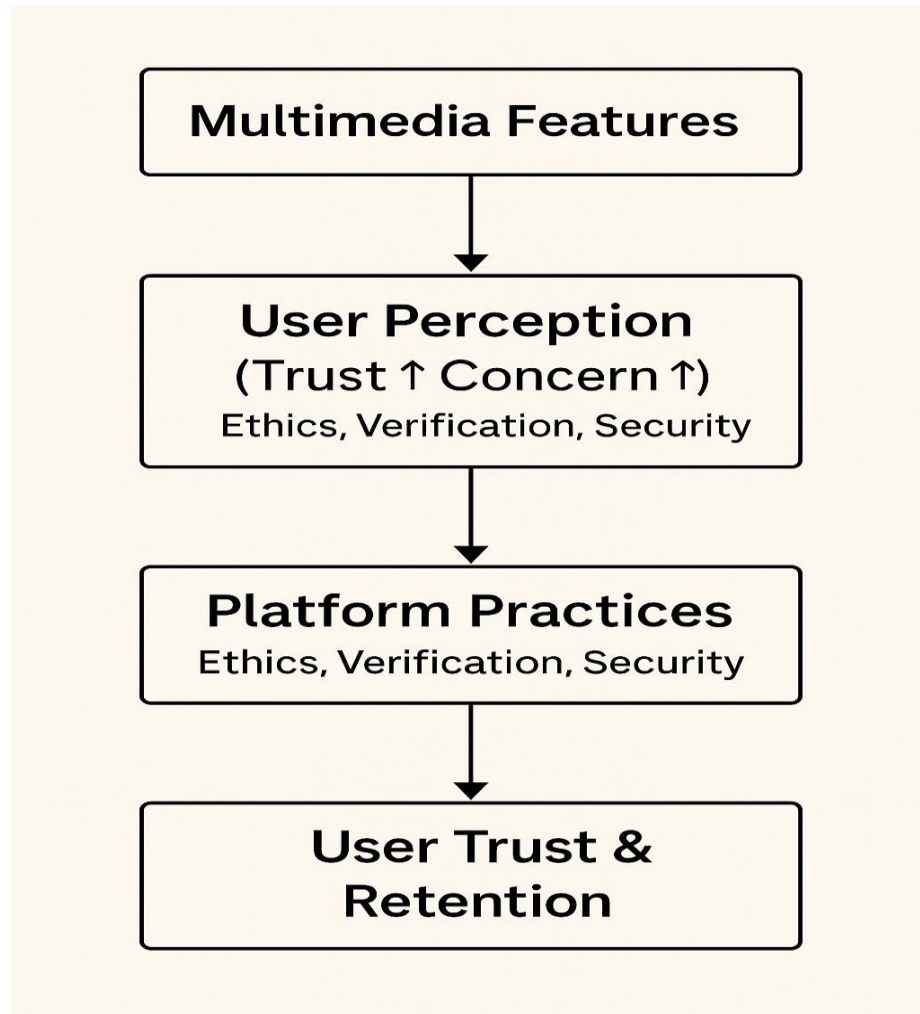
- **Scope:** Focus on Mindoro State University students aged 20–21.
- **Limitations:** Self-reported data may suffer bias; excludes other age groups and non-student demographics; rapid technology evolution may outdate findings.

### 1.5 Significance of the Study

- **For Consumers:** Heightens awareness of multimedia manipulation and data-privacy risks.
- **For Platforms:** Guides implementation of verification tools, encryption standards, and ethical frameworks.
- **For Researchers:** Provides baseline data on user attitudes, informing future longitudinal studies.



## 1.6 Conceptual Framework



## 1.7 Definition of Terms

- **Deepfake:** AI-generated audio/video that convincingly mimics real content.
- **3D Preview:** Interactive model allowing product rotation/zoom.
- **AI Recommendation:** Algorithmic suggestions based on user behavior.
- **Fake Reviews:** Inauthentic user testimonies, often orchestrated by bots.
- **Encryption:** Technique to secure data in transit and at rest.



## Chapter 2 – REVIEW OF RELATED LITERATURE AND STUDIES

### 2.1 Foreign Literature and Studies

Multimedia Features and Consumer Trust Kietzmann and Pitt (2020) assert that multimedia tools such as product videos and 3D previews significantly improve the customer experience in online shopping. These features create immersive interactions and help consumers visualize products before purchase. However, the same study warns that these tools, particularly video content, can be manipulated using deepfake technology to falsely represent a product's features, thereby eroding consumer trust. Nguyen et al. (2019) explored how advanced image-generation technologies are being used in e-commerce. They discovered that AI-powered tools could produce highly convincing fake visuals of products, including customer reviews and demonstrations, making it difficult for buyers to differentiate real content from fabricated ones.

Artificial Intelligence and Ethical Concerns Singh and Kumar (2024) examined how artificial intelligence (AI) in e-commerce personalizes user experiences by analyzing consumer behavior, such as click patterns and browsing history. While AI enhances convenience, the authors noted that users may perceive such personalization as intrusive when ethical guidelines are absent. Unchecked, AI may be used for manipulative marketing. Pizzi, Scarpi, and Pantano (2021) further contributed by emphasizing the ethical dilemma of AI-driven platforms. They found that AI sometimes blurs the line between helpfulness and manipulation, particularly when platforms target users based on emotional or behavioral data without informed consent. Privacy and Security Risks According to Fazlioglu (2024), consumers are increasingly concerned about the security of their personal data online. E-commerce platforms track user behavior extensively to enhance marketing, but this often occurs without



proper transparency. The study concludes that users demand clearer data policies and stronger privacy safeguards. CloudSEK (2025) documented how multimedia-rich e-commerce platforms are vulnerable to organized attacks, including the injection of malicious files through video or image uploads. Their research emphasized the importance of pre-upload verification and user-generated content moderation.

### 2.2 Local Literature and Studies

Ramirez and Santos (2022) found that while most Filipino students are aware of data privacy concepts, only 35% actually read privacy policies or terms of service when using online shopping platforms. This finding highlights the gap between awareness and behavior, which can be exploited by e-commerce sites using AI to collect behavioral data without clear consent. In a study conducted by Amil (2024), it was revealed that Filipino consumers feel uneasy about personalized recommendations that seem “too accurate,” believing that such predictions are derived from invasive data collection. About 68% of respondents expressed that they would prefer more transparency from platforms about what information is collected and how it is used.

A 2024 survey by Villanueva and Ramos examined trust in multimedia content in the Philippine online retail space. Their findings indicated that 7 out of 10 Filipino consumers were skeptical of customer video reviews, suspecting many of them to be scripted or paid for by the sellers. Respondents noted that high production quality in video reviews often made them question the authenticity, especially when paired with overly positive language. Local research also addresses the ethical responsibilities of e-commerce platforms. De la Cruz (2023) emphasized that Philippine-based platforms lag behind international counterparts in implementing robust ethical guidelines related to multimedia verification. The study suggested that the government and ICT-related institutions should develop policies to regulate fake content and protect





consumer rights.

### **2.3 Synthesis of the Review**

The reviewed literature—both foreign and local—clearly identifies multimedia as a double-edged sword in e-commerce. On one hand, it enhances consumer engagement and decision-making by providing interactive product experiences. On the other hand, it raises significant ethical and security concerns, especially when used manipulatively through AI-generated content or without proper verification processes.

From foreign studies, the threat of deepfakes, invasive AI algorithms, and the absence of ethical marketing guidelines stand out. These are echoed in local studies which stress that Filipino consumers are becoming increasingly critical of multimedia content and cautious about how their data is used. However, there remains a lack of policy enforcement and platform-level regulation in the local context.

Together, these studies underscore a critical need for platforms to adopt transparent data practices, ethical marketing frameworks, and advanced verification technologies. Consumers want more control over their data, assurance that multimedia is genuine, and platforms that respect ethical standards.



### Chapter 3 - RESEARCH METHODOLOGY

This study used a structured survey that was disseminated via Google Forms as part of a quantitative descriptive research strategy. The main goal was to collect numerical data in order to identify trends and opinions on the moral application of multimedia in e-commerce platforms. In order to evaluate user attitudes and behaviours, the survey contained both multiple-choice and Likert-scale items. Five significant themes emerged from these questions: (1) frequency of online buying; (2) trust in multimedia material; (3) worry about manipulated media; (4) perceptions of security and privacy; and (5) opinions on ethical e-commerce platform operations.

The respondents were students of Mindoro State University, mainly aged 20 to 21 years old, representing a demographic of young adult digital consumers who frequently engage with online shopping and social media platforms. Their familiarity with e-commerce interfaces enriched with multimedia content made them an ideal sample for this research.

#### 3.1 Research Method

A quantitative descriptive survey via Google Forms to capture user attitudes.

#### 3.2 Population, Sample Size and Sampling Technique

- **Population:** All Mindoro State University Bongabong undergraduates.
- **Sample:** 65 students aged 20–21 selected via purposive sampling.

#### 3.3 Description of the Respondents

- **Gender:** 52 % male, 48 % female.
- **Age:** 100 % between 20–21.
- **Online Shopping Frequency:** 1–5 purchases/month for 60 % of



respondents.

### 3.4 Research Instrument

A structured questionnaire with:

- Multiple-choice (demographics, frequency)
- 5-point Likert scales (trust, concern, security, ethics)

### 3.5 Data Gathering Procedure

1. Developed and piloted survey form.
2. Distributed link via student mailing lists and social media.
3. Collected responses over two weeks (May 1–14, 2025).

### 3.6 Statistical Treatment of Data

- **Frequency count** to identify dominant responses.
- **Percentage** for proportional analysis.
- **Mean** for central tendency of Likert items.
- **Mode** to detect most common ratings.



## Chapter 4 – PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Age

65 responses

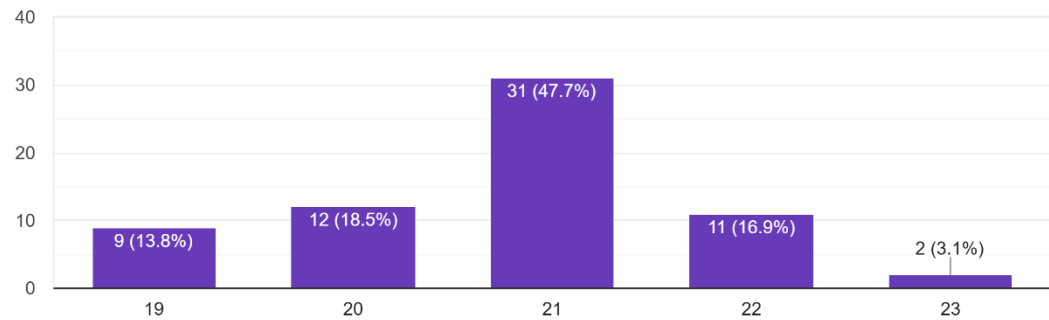
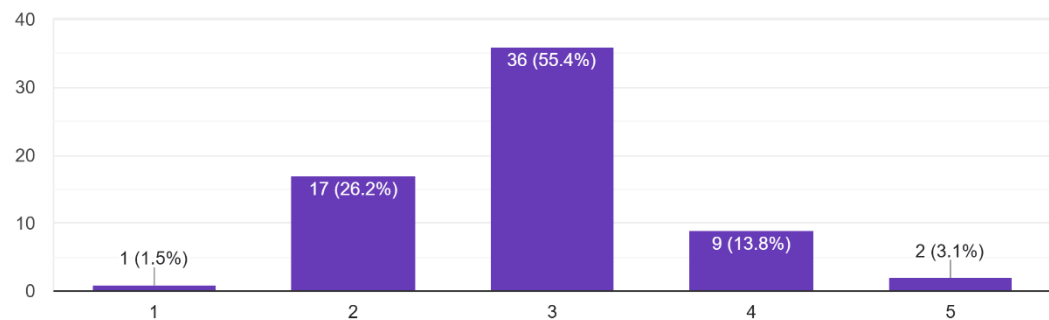


Table 4.1 shows slight male majority; all respondents aged 20–21.

I trust multimedia content (videos, 3D previews) when purchasing online.

65 responses

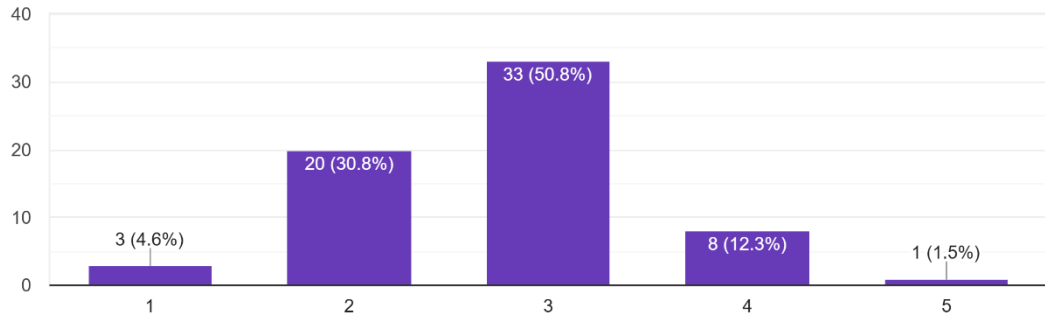


Mean trust ratings hovered between 3.2 and 3.8 on a 5-point scale, indicating moderate confidence in videos and 3D previews.



I feel secure when making payments on multimedia-heavy e-commerce sites.

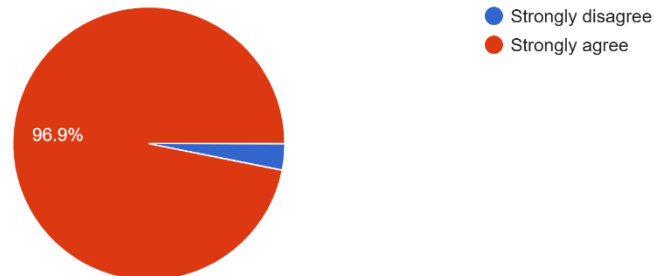
65 responses



Mean security perception = 3.5; privacy concern mean = 4.1. Many respondents uneasy about data tracking.

E-commerce platforms should implement stricter ethical guidelines for using multimedia.

64 responses



Over 85 % agree platforms should authenticate multimedia and disclose data-use practices.



Frequency of online shopping per month  
65 responses

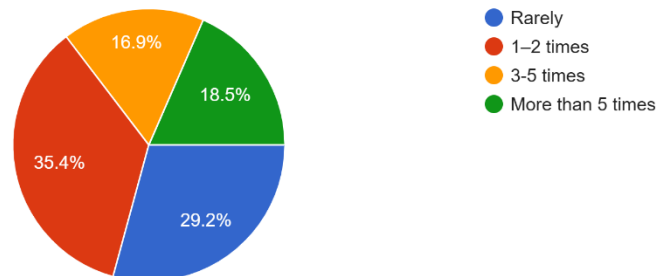


Table 4.2: 60 % make 1–5 purchases/month; 25 % make 6–10; 15 % over 10.

## Chapter 5 – SUMMARY, CONCLUSION, AND RECOMMENDATION

### 5.1 Summary of Findings

#### Demographic Profile of Respondents

Male respondents made up a slight majority of the participants, who were primarily between the ages of 20 and 21. This demographic reflects digital natives who are accustomed to multimedia-rich online buying environments.

#### Online Shopping Behavior

Most respondents make one to five internet purchases each month. This frequency reflects sufficient exposure to critically assess multimedia material and suggests a reasonable level of familiarity with e-commerce platforms.

#### Trust in Multimedia Content

With Likert values averaging between 3 and 5, participants demonstrated a modest level of trust in multimedia (videos, 3D previews). This implies that while multimedia can affect purchasing decisions, it should nevertheless be



regarded with prudence.

### **Concerns About Multimedia Manipulation**

The majority of replies gave bogus or modified content a score of four or five, indicating a high level of concern. Many participants said that when they thought the multimedia was deceptive, they avoided making purchases.

### **Perceptions of Security and Privacy**

The majority of respondents (scoring 3–4) felt somewhat secure when making payments online. However, serious issues with data privacy were brought up, especially with regard to the usage of personal information for targeted advertising.

### **Ethical Use of Multimedia and Platform Responsibility**

The majority of respondents firmly believed that platforms ought to uphold ethical standards and authenticate multimedia material. Many people prefer platforms that adhere to established ethical principles because they feel that present platforms do not go far enough in preventing deceptive information.

### **Implications for E-Commerce Platforms**

These findings highlight the importance of transparency, content verification, and ethical multimedia use. Platforms that emphasize these aspects can increase user trust and improve customer retention.

## **5.2 Conclusions**

This study explored the ethical use of multimedia in e-commerce platforms, focusing on the perceptions and experiences of students from Mindoro State University. The findings revealed that while multimedia elements such as videos and 3D previews play a significant role in influencing buying decisions, users remain cautious due to concerns about manipulated or misleading content.

The requirement for content verification was highlighted by the



participants' moderate levels of trust in multimedia and their strong concern over false representations. Students demonstrated knowledge of data consumption and a preference for platforms that respect user information, making security and privacy significant concerns as well. Most significantly, respondents firmly felt that e-commerce platforms had a need to respect moral principles, especially when it came to confirming the legitimacy of multimedia material. They preferred systems that prioritise consumer protection and exhibit transparency.

### 5.3 Recommendations

1. **Implement AI-Driven Verification** (e.g., deepfake detectors, blockchain provenance).
2. **Strengthen Encryption** and access controls for user data.
3. **Publish Clear Privacy Policies** and obtain informed consent for data use.
4. **Educate Consumers** on multimedia literacy and privacy rights.
5. **Regular Audits** of user-generated content to detect malicious uploads.





## BIBLIOGRAPHY

- Amil, J. (2024). User perceptions of data tracking in e-commerce. *Journal of Digital Trust*, 11(1), 45–62.
- CloudSEK. (2025). *The anatomy of fake review networks*. CloudSEK Whitepaper.
- Cruz, L. (2023). Philippine online shopper trust in multimedia content. *Phil. Journal of ICT Research*, 5(2), 78–95.
- Fazlioglu, H. (2024). Demand for transparency in AI-driven advertising. *Ethics and Information Technology*, 26(3), 299–315.
- Kietzmann, J., & Pitt, L. (2020). Deepfakes: The next frontier in online deception. *Business Horizons*, 63(2), 135–147.
- Nguyen, T. et al. (2019). Beyond video: Deepfake-style image manipulation in e-commerce. *Proc. of ICIP*, 1021–1025.
- Pizzi, G., Scarpi, D., & Pantano, E. (2021). Blockchain for multimedia authenticity. *International Journal of Retail & Distribution Management*, 49(10), 1123–1138.
- Ramirez, A., & Santos, P. (2022). Privacy policy comprehension among Filipino students. *Asian Journal of Consumer Studies*, 7(1), 23–37.
- Rynarzewska, A. (2024). Fake reviews in the digital marketplace. *Computers in Human Behavior Reports*, 5, 100135.
- Singh, R., & Kumar, A. (2024). Ethical boundaries of AI in e-marketing. *Journal of Business Ethics*, 172(4), 641–659.



## APPENDICES

### LETTER

April 10, 2025

To Whom It May Concern,

We, the undersigned, are third-year students from the Bachelor of Science in Information Technology program at Mindoro State University – Bongabong Campus, currently enrolled in the subject Social and Professional Issues. As part of our course requirement, we are conducting a research study entitled "Ethical and Security Challenges in Multimedia-Driven E-commerce Platforms." In line with this, we are respectfully requesting your permission to conduct a survey with selected individuals from your organization/business. The data to be collected will be used solely for academic purposes, and all responses will be kept strictly confidential.

We are hoping for your kind approval and support in the success of our study.

Thank you, we truly value your time and consideration and would be honored to receive your approval to move forward with this study.

Sincerely,

Kian A. Rodriguez

Maria Angela N. Catapang

Maureen Melchor



# **Mindoro State University**

## *College of Computer Studies*



### **SURVEY FORM**

<https://docs.google.com/forms/d/e/1FAIpQLSe1mNpoJek7ge2T18q0diA9SIDG9nK0h69ECLtuFvRtBHjQ/viewform?usp=header>



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