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Research Paper

Implications of Deepfake To Laguna University Students' Trust In Media

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ABSTRACT
The study titled ―The Implications of Deepfake on Laguna University Student's Trust in Media aimed to examine the Implication of Deepfake on the perception of the students' in how they trust the media. Deepfakes (Deep learning AI fakes) present a risk regarding people's trust in the media they consume, as they can easily fool people into believing fabricated videos.
The four (4) specific objectives were:
(1) To assess the demographic profile among Laguna University students in terms of program, age, and year level; (2) To determine which the level of awareness in deepfake content influences the trust in various forms of media; (3) To recognize if there is a significant relationship between the level of awareness and the trust of Laguna University students on deepfake and; (4) To plan a strategy and approaches for the Laguna University students to determine deepfake media from true media.

The study is a quantitative study that was conducted by administering a short questionnaire via Google Forms. The respondents were Laguna University students of all programs, blocks, and year levels. The questionnaire included statements about their level of awareness, examples of deepfakes to determine their believability, and lastly, statements about trustworthiness.

Moreover, the results show that the respondents are moderately aware of deepfakes on media platforms, need help discerning between real and fake, and agree that deepfakes impact the trustworthiness of media. Lastly, the researchers recommend that future researchers use the qualitative method for a different perspective and conduct similar research outside the campus to compare and contrast the findings.

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I. INTRODCUTION

Over the years, technological advancement has become the center of the digital age. One such field is artificial intelligence, a form of technology. This term is often used for creating systems that mimic human-like intellectual abilities, like reasoning, understanding meaning, making generalizations, and learning from past experiences. The concern with Deepfakes and the constant development of this technology is that it becomes increasingly difficult for people to determine reality from fiction, making it easier to manipulate the uninformed.

Barney and Wigmore (2023) define deepfakes as "A type of artificial intelligence used to create convincing images, audio and video hoaxes. The term describes the technology and the resulting fake content and is a portmanteau of deep learning and fake." Since its inception, Deepfake technology has become more prevalent, such as through applications like ReFace, where one can effectively swap their or other people's faces with those of celebrities on video and vice versa. It was initially used simply for entertainment but has become somewhat malicious over time.

The ethical implications of using AI, particularly in deepfake technology, have become a considerable concern (Jaiman, 2020). Trust in the use of AI, especially in deepfake technology, depends on the responsible development and deployment of these tools. (Hubert, 2021).

Deepfake apps have rapidly gained popularity, showcasing the astonishing capabilities of artificial intelligence in manipulating visual content. Examples of such apps include Akool, Face App, ReFace.AI, and Colab (Sha, 2023).

These applications employ advanced algorithms to seamlessly swap faces, alter expressions, and generate realistic videos. Users can find various options, from web-based platforms to downloadable software. While some deepfake apps require a monetary investment for enhanced features and superior results, there are also free alternatives that maintain a high level of quality. The accessibility of these apps has transcended geographical boundaries, and indeed, they are available here in the Philippines, contributing to the widespread adoption of this cutting-edge technology.

However, according to Civils Daily (2023), Deepfake technology presents a dual-edged sword with both positive and negative implications. On the positive side, it can revolutionize the entertainment industry, offering filmmakers and content creators innovative tools for realistic special effects and storytelling. On the negative side, the ability to create compelling and manipulative fake content raises severe concerns about misinformation, privacy infringement, and potential misuse for malicious purposes. It could be exploited to generate false narratives, deceive individuals, or even damage reputations. The technology's proficiency in mimicking voices and facial expressions amplifies the risk of identity theft and cyber threats (Terranova Security, 2023). In conclusion, finding the right balance between using deepfake technology for positive innovation and dealing with its adverse effects is a crucial challenge for developers and regulators.

By doing this study, the researchers determined whether or not Laguna University students can differentiate deepfakes from true media. The results of this study can benefit Laguna University and its students by providing precautions against deepfakes in media platforms, most especially in media news. Moreover, the results of this study can help future researchers with similar studies.

II. MATERIALS AND METHOD(S)

The researchers utilized a quantitative method of research. Quantitative research helps the researchers generalize the results from a sample group to an entire group. A quantitative research method was applicable since this study involves a large population. This study also used a Pearson r correlation coefficient. This is to determine how much variation is caused by the independent variable about the dependent variable. Since the study's objective is to assess the respondents' level of awareness and trust and see if the two variations are related, this approach was useful to the study. The study was conducted at Laguna University. The researchers gathered respondents regardless of their program, age, and year level. The researchers' respondents are Laguna University students during the Second Semester of the Academic Year 2023-2024, with a total population of 4,555. Using Slovin's formula, with a margin of error of 5%, the researchers now have 368 total respondents. The researchers then determine the total number of respondents in each department of Laguna University. There is a total of 13 programs this Academic Year 2022-2023. The researchers used a survey questionnaire, checkboxes, and multiple choices as the research instrument to get the appropriate data. The questionnaire that was administered was the same throughout all departments. A total of four (4) parts were used in the questionnaire.

Part I was the respondents' program. In this part, the collected data were the respondents' program, age, and year level;

Part II measured the respondents' level of awareness of deepfake to determine the scale of their understanding of the statements provided. The instrument used in this part was a Likert scale.

Part III was about the believability of deepfakes in the users' perception. It was a test in which the respondents were given six (6) videos that were less than ten (10) seconds to watch. The videos contained deepfake and non-deep-fake media, and the respondents needed to compare and determine whether they were fake.

Part IV was about users' trust in the media. Its purpose is to see if the respondents will trust the media platforms after answering the part II and part III tests. The instrument used in this part is a Likert scale.

The researchers coordinated with the presidents of each block to help distribute the questionnaire via messenger to randomly selected students. They also went around the campus to look for respondents while the questionnaire was still from the Google Form. In the Google form, the questionnaire's content consisted of

scales, checkboxes, and multiple choices as the research instrument. Afterward, the researchers handed over the data gathered to an expert statistician for them to process and analyze.

The questionnaire was available in Google Forms and distributed through Messenger, Facebook, and QR codes. An expert validated the questions formulated by the researchers.

The data from various survey questionnaires were presented for statistical analysis and interpretation.
The data were encoded as ranks or scores from specific survey questionnaires with different classifying categories. The following statistical treatments were employed to summarize the data to obtain a valid and reliable interpretation. The researchers converted the frequencies into percentages to identify the total number of observations to be represented. Therefore, the researchers obtained the results using the Likert Scale.

Likert scale is a rating system used in the questionnaire. It is designed to measure people's attitudes, opinions, or perceptions. Subjects for the Likert scale range of possible responses to a specific question or statement; responses typically include "strongly agree," "agree," "somewhat agree," "disagree," and "strongly disagree." (Jamieson, 2024)

This study also used a Pearson r correlation coefficient. This helped to determine how much variation is caused by the independent variable to the dependent variable. The Pearson correlation coefficient (r) is the most common way of measuring a linear correlation. It is a number between –1 and 1 that measures the strength and direction of the relationship between two variables (Turney, 2022).

III. RESULTS

This section presents an analysis of data, results, and interpretation of the study findings from the survey questionnaire. This chapter is subdivided into sections pertinent to the program, age and year level of the student, level of awareness in deepfake, correlation of the variables, believability of deepfake to the users' perception, and trust of users in the media.

The 368 randomized Laguna University students were divided into 13 programs using stratified random sampling. The researchers computed the percentage of each program to fairly determine the respondents of each program depending on its population. Here is the table showing how many respondents per program answered the questionnaire.

Table 1.
Number of Respondents per Program

PROGRAM	**No. of Respondents**
Bachelor of Arts in Communication (BAC)	24
Diploma I Midwifery (MID)	4
Bachelor of Science in Entrepreneurship (BSE)	53
Bachelor of Science in Tourism Management (BSTM)	36
Bachelor of Science in Mechanical Engineering (BSME)	38
Bachelor of Science in Information Technology (BSIT)	62
Bachelor of Secondary Education (BSED)	34
Bachelor of Science in Computer Science (BSCS)	24
Bachelor of Science in Accounting Information Systems (BSAIS)	31
Bachelor of Science in Accountancy (BSA)	15
Bachelor of Arts in Psychology (BA Psy)	13
Bachelor of Elementary Education (BEED)	19
Bachelor of Science in Psychology (BS Psy)	15
TOTAL	**368**

The next table shows the breakdown of respondents in terms of their socio-demographics specifically, age.

Table 2.
Age of Respondents

AGE	No. of Respondents
18 years old	30
19 years old	65
20 years old	77
21 years old	80
22 years old	74
23 years old	29
24 and up years old	13
TOTAL	**368**

Table 3 below shows the breakdown of respondents in terms of their socio-demographics, specifically, the year level. One hundred and thirteen (113) came from the first-year level, while ninety-one (91) came from the second-year level, seventy-five (75) came from the third-year level, and lastly, eighty-nine came from the fourth-year level, for a total of 368 respondents.

Table 3.
Year Levels of Respondents

YEAR LEVEL	No. of Respondents
First Year	113
Second Year	91
Third Year	75
Fourth Year	89
TOTAL	**368**

The next table shows the results of Laguna University students' Level of Awareness of Deepfake in terms of its program. This concludes that Laguna University students' level of awareness of Deepfake is at the grand mean of 3.89 and is Moderately Aware. These findings implied that most Laguna University Students are aware of Deepfake and its appearances on all media outlets.

Table 4.
Level of Awareness of Laguna University students on Deepfake (by program)

PROGRAM	MEAN	SD	INTERPRET
BAC	3.86	1.07	Moderately Aware
MID	2.77	1.02	Somewhat Aware
BSE	4.04	1.05	Moderately Aware
BSTM	3.84	0.98	Moderately Aware
BSME	3.90	1.14	Moderately Aware
BSIT	3.92	1.16	Moderately Aware
BSED	3.99	1.26	Moderately Aware
BSCS	4.35	0.99	Extremely Aware
BSAIS	3.82	1.27	Moderately Aware
BSA	3.98	1.12	Moderately Aware
BA Psy	3.33	1.37	Somewhat Aware
BEED	3.55	1.04	Moderately Aware
BS Psy	3.78	1.17	Moderately Aware
MEAN	**3.8938**	**1.15**	**Moderately Aware**

The following table presents the result of Laguna University students' Level of Awareness of Deepfake in terms of age. The age brackets the researchers gathered is eighteen (18) to twenty-four (24) years old and older.

Table 5.
Level of Awareness of Laguna University students on Deepfake (by age)

AGE	MEAN	SD	INTERPRET
18	4.07	*1.07*	Moderately Aware
19	4.08	*1.04*	Moderately Aware
20	3.84	*1.14*	Moderately Aware
21	3.88	*1.22*	Moderately Aware
22	3.83	*1.20*	Moderately Aware
23	3.60	*1.14*	Moderately Aware
24	3.93	*1.03*	Moderately Aware
MEAN	**3.8938**	***1.15***	**Moderately Aware**

Table 6 shows the Level of Awareness of Laguna University Students on Deepfake in terms of year level. All year levels show that they are moderately aware of the appearance of Deepfake in the media.

Table 6.
Level of Awareness of Laguna University students on Deepfake (by year level)

YEAR LEVEL	MEAN	*SD*	INTERPRET
First Year	3.85	*1.19*	Moderately Aware
Second Year	3.93	*1.14*	Moderately Aware
Third Year	3.89	*1.12*	Moderately Aware
Fourth Year	3.92	*1.12*	Moderately Aware
GRAND MEAN	**3.8938**	***1.15***	**Moderately Aware**

Table 7 presents the Trust of Laguna University students in Media results. Based on the results, most programs agree that Deepfake affects the trust of Laguna University students.

Table 7.
Trustworthiness of Laguna University Students on Media

PROGRAM	MEAN	*SD*	INTERPRET
BAC	3.95	*0.89*	Agree
MID	3.25	*0.84*	Somewhat Agree
BSE	4.00	*0.99*	Agree
BSTM	4.02	*0.90*	Agree
BSME	4.02	*1.08*	Agree
BSIT	3.85	*1.05*	Agree
BSED	4.15	*1.15*	Agree
BSCS	4.23	*0.87*	Strongly Agree
BSIS	4.08	*0.90*	Agree
BSA	4.08	*0.92*	Agree
BA Psy	3.90	*1.19*	Agree
BEED	3.51	*1.06*	Agree
BS Psy	3.88	*1.02*	Agree
GRAND MEAN	**3.92**	***1.02***	**Agree**

Table 8 presents the result on Trust of Laguna University students on Media in terms of age.

Table 8.
Trustworthiness of Laguna University students in Media (by age)

STATEMENT	MEAN	*SD*	INTERPRET
18 years old	4.03	*1.01*	Agree
19 years old	4.06	*0.91*	Agree
20 years old	3.91	*1.06*	Agree
21 years old	3.99	*1.06*	Agree
22 years old	3.97	*1.00*	Agree
23 years old	3.80	*1.03*	Agree
GRAND MEAN	**3.9734**	***1.02***	**Agree**

Lastly, Table 9 presents the results on the Trust of Laguna University students in Media in terms of year level. All year levels show that they agree that trust is affected when it comes to encountering deepfake content across media.

Table 9.
Trustworthiness of Laguna University students in Media (by year level)

STATEMENT	MEAN	*SD*	INTERPRETATION
First Year	3.91	*1.06*	Agree
Second Year	3.99	*0.98*	Agree
Third Year	4.03	*1.04*	Agree
Fourth Year	3.99	*1.00*	Agree
GRAND MEAN	**3.9734**	***1.02***	**Agree**

The researchers also concluded that there is a correlation between the level of awareness of deepfake and trust in the use of media of 368 randomly selected individuals within Laguna University.
Based on the data, there is a significant correlation between the level of awareness of deepfake and trust in the use of media.

According to Maddox (2024), Through correlational studies, researchers can discover if changes in one variable cause changes in another. Correlational research is beneficial when exploring concepts that cannot be manipulated within an experiment due to ethical reasons, practicality, or other factors.

IV. DISCUSSIONS

The results revealed that the selected Laguna University respondents are moderately aware of the widespread deepfake. The respondents agree that upon seeing deepfake media, their trust in media will be affected because of how real deepfake media seems to be. However, upon further conduction, the researchers also held a survey questionnaire where the respondents had to compare two individual short videos, not longer than 10 seconds, and determine which was authentic and which was not. According to the statistical findings, the results indicate that Laguna University students need help discerning between real and deepfake media, with only 11% of them being correct, making the deepfake contents 89% believable.

The findings resonate with the study conducted by George (2023), whose research highlights critical reasons for the urgency of change in media platforms' content management methods. The lack of widespread awareness about deepfakes, the rapid spread of false information, and existing policies that prohibit deepfakes necessitate a shift in approach. The proposal advocates for integrating automated deepfake detectors into the current moderation systems of platforms like Twitter, Reddit, and Facebook. By combining human moderators' nuanced decision-making abilities with AI's proficiency in detecting deepfakes, a more robust defense against the manipulation of information is envisioned.

Scholars and researchers have extensively discussed the potential misuse of deepfake technology. The ability to create realistic but fabricated content raises ethical concerns, including the spread of misinformation, political manipulation, and damage to individuals' reputations. Despite the best efforts to avoid being a victim of deepfakes, with the help of the advancement of technology, it becomes challenging to disseminate the truth. However, having the proper knowledge on how to see real from not will help individuals from falling victim to the spread of misinformation from deepfake media.

TO CONCLUDE

In an era dominated by digital media and rapidly evolving technology, the proliferation of deepfake content presents a multifaceted challenge to media consumers worldwide. Against this backdrop, a comprehensive understanding of deepfake technology and its implications is essential, particularly among academic communities such as Laguna University. This explores the level of awareness and trust of Laguna University students regarding deepfake technology, as outlined in a series of statements.

The results collectively suggest that Laguna University students exhibit a commendable level of awareness regarding deepfake technology and its implications on media trust. Their recognition of Deepfake's influence on trust underscores the necessity of addressing and mitigating its impact to maintain credibility in media sources. Moreover, the correlation between awareness and trust highlights the critical role of fostering awareness in shaping perceptions and trust among students when encountering content affected by deepfake technology. However, the challenge lies in discerning the authenticity of content, indicating a crucial need for

enhanced media literacy education to effectively navigate the complexities of distinguishing real from fake in contemporary digital environments.

By delving into these findings, we aim to explain the critical role of media literacy education in empowering individuals to navigate the complexities of today's digital landscapes with discernment and resilience.

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