

Fact, fake, or false: Determining millennials' susceptibility to media effects on disaster information

Marinella Jane Estopar Apinan, Ma. Sheanell Torres De Pedro *, Jonamie Basquez Samosino and Rolando Lachica Langurayan Jr

College of Management, Capiz State University, Roxas City, 5800 Capiz, Philippines.

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Abstract

The widespread use of digital media platforms and the increasing presence of artificial intelligence-generated online content have transformed how disaster-related information is accessed, interpreted, and shared, raising concerns regarding millennials' susceptibility to media effects. This study aimed to determine the level of millennials' susceptibility to media effects in terms of dispositional, developmental, and social factors and identify whether respondents' profile variables influence susceptibility to media effects on disaster information. A quantitative cross-sectional research design was employed using quota purposive sampling, with 307 millennial respondents exposed to disaster-related content through various digital media platforms. Data were gathered using a validated and reliability-tested researcher-developed questionnaire. Data were analyzed using descriptive statistics and regression analysis to determine the influence of profile variables on susceptibility. Findings revealed that millennials exhibit a high level of susceptibility to media effects on disaster-related information. Social factors obtained the highest influence, indicating the strong role of peer interaction, social validation, and online engagement in shaping perceptions and responses to disaster content. Regression results showed that age and educational attainment significantly influence susceptibility, while gender, frequency of media use, and reasons for social media use do not. Facebook was widely used but not a significant predictor, whereas X (Twitter) and YouTube significantly influence susceptibility due to updates and visual content. Overall, susceptibility is shaped by cognitive, developmental, and social processes within digital environments. The findings emphasize the need to strengthen media literacy, critical thinking, and fact-checking skills to reduce vulnerability to misinformation and artificial intelligence-generated content in disaster contexts.

Keywords: Millennials; Susceptibility; Media Effects; Disaster Information; Misinformation; Artificial Intelligence (Ai)-Generated Content

1. Introduction

The rapid development of digital media has played a huge role in changing the way that information about disaster events can be disseminated in modern times [1,2]. Through the use of social media sites, online news providers, and digital communication networks, people can obtain current information about any disaster event [1]. Digital media is important in disaster communication since it facilitates faster dissemination of warning messages, updates, and public advisories [1,2]. However, despite these advantages, digital platforms have also become channels for the widespread circulation of misinformation, fake news, manipulated visuals, and artificial intelligence (AI)-generated disaster-related content that may negatively influence public understanding and response during emergencies [3–7]. The increasing accessibility of artificial intelligence technologies has further intensified the production of highly realistic but misleading content, making it more difficult for individuals to distinguish factual information from fabricated or false disaster-related information [3–5].

* Corresponding author: Sheanell Torres De Pedro

The spread of disaster misinformation through digital platforms has become a growing concern because misleading information may create confusion, fear, panic, and inappropriate public responses during crisis situations [6,7]. Emotional and sensationalized disaster content often spreads rapidly online due to repeated sharing, engagement, and algorithmic amplification [6,8]. As digital media continues to evolve as a primary source of information, the ability of individuals to critically evaluate and verify online content becomes increasingly important [10–13]. Several studies emphasized that exposure to misinformation is influenced not only by media content itself but also by individual susceptibility factors such as emotional tendencies, cognitive processing, social interactions, digital literacy, and media consumption behavior [9–13]. Millennials are among the most active users of digital and social media platforms, making them highly exposed to disaster-related information encountered online [14,15]. Although millennials are generally considered technologically adept, previous studies suggest that frequent social media use does not necessarily guarantee strong information verification and critical evaluation skills [12,13]. Individual reactions to media content may vary depending on dispositional, developmental, and social characteristics that influence how information is interpreted, believed, and shared [9].

This study is anchored on the Differential Susceptibility to Media Effects Model by Patti M. Valkenburg and Jochen Peter, which explains that media effects differ according to individuals' susceptibility factors [9]. The theory suggests that personal dispositions, developmental characteristics, and social contexts significantly influence how individuals process and respond to media exposure [9]. Despite the growing literature on misinformation, fake news, and media effects, limited studies have specifically examined millennials' susceptibility to disaster-related misinformation within the Philippine context, particularly in relation to artificial intelligence (AI)-generated content and disaster communication [3,4,6].

Most existing studies focus on general misinformation exposure and online behavior, while only a few studies explore how susceptibility factors affect millennials' interpretation of disaster-related information. Moreover, limited local studies have examined the influence of respondents' profile variables on susceptibility to media effects during disaster situations. Thus, this study aimed to determine the level of millennials' susceptibility to media effects on disaster information in Roxas City, Capiz, specifically in terms of dispositional, developmental, and social factors. It also sought to determine whether respondents' profile variables significantly influence their level of susceptibility to media effects on disaster information. The study hypothesized that there is no significant influence between the respondents' profile and their level of susceptibility to media effects on disaster information.

2. Materials and Methods

The research design employed in this study was quantitative descriptive-regressional using a cross-sectional survey approach. This design was appropriate because the researchers aimed to determine the level of millennials' susceptibility to media effects on disaster information and examine whether respondents' profile variables significantly influenced their susceptibility level. According to Creswell and Creswell [16], a cross-sectional design allows researchers to gather data at a single point in time to identify prevailing patterns, trends, and relationships among variables. The study also utilized quantitative methods since the data gathered were numerical in nature and required statistical analysis to measure and interpret respondents' susceptibility to media effects on disaster information [16].

The respondents of the study consisted of 307 millennials living in Roxas City, Capiz, aged 30 to 45 years old. According to the definition, millennials are people who were born from 1981 to 1996 [14]. A non-probability sampling method was used, which is quota purposive sampling. This allowed for the selection of those who met the criteria, including active use of social media or digital platforms and prior exposure to disaster-related information [18]. The target population is based on the 2015 data provided by PhilAtlas, where there were 31,759 millennials in Roxas City [19].

The main tool for data collection involved the use of a researcher-made questionnaire, which had been validated and tested for reliability. This questionnaire had been developed under the supervision of the thesis adviser while undergoing content validity through expert panel members. Testing for reliability involved pilot testing of the tool on 30 respondents who did not participate in the main survey. Reliability test results through Cronbach's alpha showed that the reliability coefficient was 0.815.

The researchers obtained the necessary consent and proceeded with the data collection process by using an online questionnaire through Google Forms. The survey was disseminated through direct messages and emails to selected respondents only to guarantee that only those who are eligible can participate and avoid any unauthorized use of the survey. The purpose of the study was explained to the participants, and their answers were assured of confidentiality and privacy. After data collection, the gathered data were compiled, tabulated, and statistically analyzed [16].

3. Results and Discussion

3.1. Level of Millennials' Susceptibility to Media Effects on Disaster Information as a Whole and in terms of Dispositional, Developmental, and Social Factors

3.1.1. As a Whole

The results obtained from the study showed that there was a grand mean score of 3.80 with a standard deviation of 0.67, which is defined as "High Susceptibility." In essence, this implies that millennials are very susceptible to media effects on disaster information from the dispositional, developmental, and social perspectives. From the results obtained, it can be seen that the interpretation of disaster information by millennials is affected by emotions and digital literacy.

Among the three dimensions, social factors yielded the highest mean score of 3.99, showing that peer pressure, social groups, and social validation have an important role in how millennials perceive disaster information. The second category with respect to mean score is developmental factors, which had a mean score of 3.72, implying that digital literacy and reasoning play an important role in how millennials evaluate online information. On the other hand, dispositional factors scored the least of all three categories, which had a mean score of 3.69.

The findings support the Differential Susceptibility to Media Effects Model (DSMM) of Valkenburg and Peter [9], which posits that media effects are influenced by dispositional, developmental, and contextual factors. Generally, the study results emphasize the need for improving media literacy and critical thinking skills to mitigate vulnerability to fake news amid disaster scenarios.

3.1.2. Dispositional, Developmental, and Social Factors

From the results, it was found that the millennial generation is characterized by high susceptibility to the impact of media on disaster information in terms of dispositional, developmental, and social variables. In the context of dispositional variables, the mean score of 3.69 shows that the emotions, beliefs, experiences, and cognition of individuals affect their interpretation of disaster information. The highest-rated indicator showed that past disaster experiences strongly affect reactions to disaster news, suggesting that prior exposure to disasters heightens emotional sensitivity and influences judgment. This is supported by the findings of Starbird et al. [20], who stressed the importance of emotional reactions during disasters, which influence how individuals receive and disseminate information. On the other hand, the quickest reaction to disaster information with little prior evaluation received the least mean score, although the result was categorized as having high susceptibility. This suggests that millennials may still be acting impulsively in response to disaster information.

For developmental factors, the findings yielded an overall mean score of 3.72, also interpreted as high susceptibility. This suggests that although millennials possess digital literacy, technological familiarity, and analytical abilities, these competencies do not entirely protect them from media influence. The highest-rated indicator revealed that respondents experience mixed emotions regarding fact, fake, and false disaster-related information, indicating difficulty in distinguishing credible information from misleading content. This finding aligns with Wineburg and McGrew [21], who noted that individuals frequently struggle to critically evaluate online information without effective verification practices. The results further revealed that millennials attempt to verify information by checking multiple sources and evaluating credibility before accepting disaster-related content. However, emotional intensity, urgency, and information overload may still affect judgment and reduce careful analysis during disaster situations.

Meanwhile, social factors obtained the highest overall mean score of 3.99, indicating that millennials are greatly influenced by peer interactions, online engagement, and social environments when interpreting disaster-related information. Among the indicators, engagement with online platforms received the highest mean score and was interpreted as very high susceptibility. This suggests that sharing, commenting, reacting, and repeated exposure to online content strongly shape how millennials understand and respond to disaster information. The findings support the Social Influence Theory of Kelman (1958). Similarly, Muchnik et al. [22] emphasized that online social endorsement significantly affects perceptions of credibility. Overall, the findings imply that while digital platforms facilitate rapid communication and disaster awareness, they also increase vulnerability to misinformation, emotional influence, and uncritical information sharing.

Table 1 Level of Millennials' Susceptibility to Media Effects on Disaster Information as a Whole and in terms of Dispositional Factors, Developmental Factors, and Social Factors

Variables	Mean	SD	Verbal Interpretation
Dispositional Factors			
I easily believe disaster information that I see in the media.	3.55	1.348	High Susceptibility
I react quickly to disaster news without thinking much about it first.	3.44	1.249	High Susceptibility
My past experiences with disasters affect how I respond to disaster news.	4.05	1.003	High Susceptibility
I pay attention to details when reading and watching disaster information.	3.85	1.055	High Susceptibility
I carefully look for details before trusting disaster-related information.	3.84	1.125	High Susceptibility
Total	3.69		High Susceptibility
Developmental Factors			
I have the knowledge to identify reliable online disaster information.	3.72	1.150	High Susceptibility
I cross-check disaster news using credible sources.	3.69	1.181	High Susceptibility
I recognize misleading disaster information.	3.69	1.122	High Susceptibility
I have the skill to evaluate whether a disaster-related source is credible.	3.69	1.156	High Susceptibility
I check first the reliability of disaster information posted online.	3.73	1.159	High Susceptibility
I have mixed emotions on fact, fake, and false information related to disaster.	4.05	.959	High Susceptibility
I consider different perspectives before believing disaster news.	3.94	1.029	High Susceptibility
I share disaster information along with its possible consequences.	3.85	.982	High Susceptibility
I am confident in using online platforms to verify disaster information.	3.83	1.046	High Susceptibility
I know how to use online tools to check the credibility of disaster news.	3.79	1.171	High Susceptibility
I have the skill to find accurate disaster information online.	3.66	1.197	High Susceptibility
I compare disaster news from different online sources before believing it.	3.79	1.137	High Susceptibility
I can tell whether an online disaster source is reliable.	3.73	1.169	High Susceptibility
Total	3.72		High Susceptibility
Social Factors			
I rely on friends and family to decide if disaster information is trustworthy.	3.74	1.196	High Susceptibility
I depend on others' opinions before sharing disaster-related news.	3.66	1.180	High Susceptibility
I share disaster news when people in my social circle believe it is true.	3.66	1.088	High Susceptibility
Discussions with peers shape how I understand disaster events.	3.87	.980	High Susceptibility
Trending topics online influence how I judge disaster information.	3.97	1.003	High Susceptibility
I feel pressured to share disaster news when many others are sharing it.	3.85	1.088	High Susceptibility
Social expectations affect whether I verify disaster information before sharing it.	3.77	1.037	High Susceptibility
I adjust my reaction to disaster information based on what most people accept.	3.76	1.059	High Susceptibility
The type of online platforms used influences the disaster information I believe.	4.03	.914	High Susceptibility

Frequent media use increases my exposure to disaster-related content.	4.08	.915	High Susceptibility
I am more likely to believe disaster information when I see it repeatedly.	4.04	.980	High Susceptibility
My engagement with online platforms affects how I interpret disaster news.	4.24	.956	Very High Susceptibility
Total	3.99		High Susceptibility
Grand Mean	3.80		High Susceptibility

Legend: 4.21-5.00 = Very High; 3.41- 4.20 = High; 2.61- 3.40 = Moderate; 1.81- 2.60 = Low; 1.00- 1.80 = Very Low Source: Data from the researchers.

3.2. Influence of Respondents' Profile on their Level of Susceptibility to Media Effects on Disaster Information

The regression analysis revealed that susceptibility to media effects on disaster information was influenced only by selected respondent characteristics. Age showed a significant but weak positive effect, indicating that even small differences within the millennial group affected how disaster-related information was processed. Likewise, highest educational attainment significantly influenced susceptibility, suggesting that individuals with lower educational levels were more vulnerable due to limited critical thinking and media literacy skills [21].

In contrast, gender did not significantly affect susceptibility, indicating that males and females experienced similar levels of exposure to and influence from disaster-related media content. For social media platforms, X (Twitter) and YouTube emerged as significant predictors, showing that platform features such as real-time updates and emotionally engaging content increased susceptibility. This supported findings that fast-spreading and visually driven content heightened misinformation risk [6].

Meanwhile, Facebook, Instagram, frequency of media use, and reasons for using social media were not significant predictors, suggesting that susceptibility was shaped more by how information was presented and processed rather than by how often it was accessed. Overall, the findings indicated that susceptibility was mainly driven by age, education, and platform type. Thus, the null hypothesis was rejected, confirming a significant relationship between respondents' profile and susceptibility level.

Table 2 Influence of Respondents' Profiles on the Level of Susceptibility to Media Effects on Disaster Information

Variable	Beta	t-value	Sig. / P-value	Remarks
Age	.125	-2.263	.024	s
Gender	.030	-.566	.572	ns
Highest Educational Attainment	.142	-2.470	.014	s
Social Media Platform Used:				
Facebook	.035	.652	.515	ns
Instagram	.031	.461	.645	ns
TikTok	.022	.368	.712	ns
X (Twitter)	.338	-4.935	<.001	s
Youtube	.293	5.154	<.001	s
Frequency of Media Use	.023	-.430	.667	ns
Reason for Using social media	.015	-.280	.780	ns

Legend: p-value < 0.05 alpha = significant; p-value > 0.05 alpha = not significant Source: Data from the research

4. Conclusion

This study highlights that digital media substantially affects the manner millennials use, interpret and share disaster related information. The group of people is vulnerable to the consequences of media as they perceive information on disasters influenced by social media platforms and its accuracy and credibility. Digital technology, especially social

media sites, is crucial when it comes to getting exposed to information and assessing the accuracy and credibility of information presented. Misinformation created by artificial intelligence in the form of fake photos, videos, and texts has further complicated the process of differentiating between real and fake information. The results show that demographic and educational characteristics have an effect on the interpretation and evaluation of disaster information but not the general media use that makes people vulnerable to misinformation. In particular, some platforms such as X (Twitter), YouTube, designed for quick sharing and provision of visual content may affect users' perception more strongly and serve as tools for spreading misinformation. Therefore, the conclusion about the need to promote media literacy and improve the capacity of fact checking and critical thinking among millennials should be emphasized.

Compliance with ethical standards

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Disclosure of conflict of interest

The author states that no competing interests influenced the outcomes of this research.

Statement of ethical approval

The study was conducted in adherence to the ethical guidelines and the Data Privacy Act of 2012 due to the voluntary and informed consent of all the participants and the application of anonymity codes to ensure their privacy throughout the process of storing the data. Although AI software like Grammarly and Quillwort were applied to assist with corrections and paraphrasing, all the authors have reviewed the data and are responsible for the output of this paper.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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