



## INFORMATION INTEGRATION OF ENVIRONMENTAL PRESERVATION MESSAGES TO THE STUDENTS AS YOUNG GENERATIONS IN GORONTALO CITY

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### ABSTRACT

This study analyzes three problems, knowledge, behavior, and media habits, to collect information about environmental preservation. The purpose is to form a strategy for a safe environment based on the data obtained and described. The theory used in this research is integration information theory. The research population is young generations in UNG, and the sample is active students from the Department of Communication at UNG. This study uses a combination of closed and open questionnaires. The results of the research show that the level of knowledge is sufficient. Regarding behavior, students still disagree on several things, such as bringing tumblers to campus. On the other hand, students are supportive if campuses hold open green spaces, create learning curricula about environmental communication, and make policies related to green campuses. Media habits show that students consume more information from social media and entertainment, so environmental preservation information must be included. Therefore, advice was given to the government in Gorontalo to involve young people in preservation programs; mass media, which is more neutral in reporting about the environment; and universities that are starting to improve regarding environmental preservation.

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## INTRODUCTION

Environmental problems are multidimensional problems that involve various groups. The information regarding ecological or environmental problems is also included in the urgent issues to be analyzed. In Indonesia, several mass media have reported on environmental problems. Unfortunately, what was raised was issued unrelated to the environment. One of them is the example of the beach reclamation case in Jakarta, where the negative impacts of reclamation were ignored. The media tends to raise political and legal issues related to the ownership and power of the reclamation island (Reynaldi & Humeira, 2021). At the same time, the analysis of state of the art about SGDs news, where the results of the framing analysis show that information about SGDs does not highlight the causes of climate change and impacts on development but rather ceremonial news (Wijayanto & Nurhajati, 2019).

The problems of environmental damage can be caused by several things, first, caused by nature, such as natural disasters that often hit Indonesia (Yulianto et al., 2021). On the other hand, environmental problems are also caused by human behavior itself. Humans lack a sense of concern for protecting the natural surroundings. Humans act out environmental destruction on land, such as logging forests and burning forests, and at sea, such as destroying coral reef ecosystems. The result impacts human losses, lack of clean water, drought and erosion, and biodiversity (Shivanna, 2022; Tzanakakis, Paranychianakis, & Angelakis, 2020).

With the widespread issue of climate change, which is detrimental to various parties, especially food and agriculture, which are related to the survival of humanity (Calicioglu, Flammini, Bracco, Bellù,



& Sims, [2019](#)). Environmental issues are becoming increasingly important for the whole world. More and more problems threaten human life, such as the depletion of the ozone layer, water pollution, and soil pollution (Yuliana & Pantawis, [2022](#)). Environmental issues concern the public, especially the millennial generation, who will receive the impact of this ecological damage in the future. Environmental issues are now a global concern (Lodeiro, Capelo-Martínez, Santos, & Oliveira, [2021](#)) and are a key consideration that directs consumer preferences and policy-making (Ogiemwonyi & Harun, [2020](#)).

Widodo's (2016) hypothesis is true; in the following decades, people began to experience drought and the difficulty of clean water (Widodo, [2016](#)). For example, in several villages in East Java, droughts often occur, causing a shortage of clean water. The strategy implemented by the local government is to build reservoirs to collect rainwater, utilize the potential of the soil, and drill wells to meet the local community's clean water needs (Purnomo, Halik, & Dhokhikah, [2021](#)). Unfortunately, using drilled wells, which is the solution, creates new problems—making a hole in the ground that is too deep and too big, so that it continues with other environmental hazards, where these hazards will have an impact on the welfare of human life (Sari, Karo, Kurniawati, Harry, & Fernando, [2022](#)).

In the Mongabay.com article, it is written that Indonesia is a country that has a high risk of climate change, which will harm development in Indonesia, including in the Province of Gorontalo. The development will falter and bring potential losses to regional income per year (Paino, [2016](#)). Climate change is also a threat to Gorontalo Province because the damage is caused by natural factors and the lack of public awareness of protecting the environment. This statement was also supported by the words of the Regent of Gorontalo Regency, namely Nelson Pomalingo. The Regent of Gorontalo Regency said that Gorontalo Province is a disaster-prone area in Indonesia. On the other hand, the lack of public awareness will further exacerbate environmental damage, ranging from drought, floods and lack of clean water, which is caused by a lack of public awareness in Gorontalo Province (Dunggio & Wunarlan, [2013](#); Paino, [2016](#)).

Based on the guidebook from the Central Regional Disaster Management Agency (BPBD), an event can be considered a disaster if it creates hazard, vulnerability, and risk. Therefore, to prevent these hazards, vulnerabilities and risks, agents of change are needed to implement changes (Tim Penulis Bakornas, [2007](#)). To implement these changes, at least the younger generation knows what actions cause environmental damage, know about climate change, and things that are likely to bring danger, vulnerability, and risk. Knowledge will change attitudes, then positive behaviour to make changes (Rohman, Rukiyati, & Purwastuti, [2014](#)), including changes in preserving the environment.

In overcoming environmental problems, young people have the potential to be agents of change in overcoming environmental problems. As Chandra (2021) said, the younger generations should be agents of change in protecting nature. The reason is that more and more human selfish traits grow, and humans often take advantage of the environment arbitrarily. Therefore, the younger generation, as a generation that has the potential to take action for change, is the generation that is highly expected to make positive changes to the environment (Chandra, [2021](#)). The statement on involving young people in controlling climate change was also approved by the Minister of Environment and Forestry, where the minister said that the involvement of young people in the environment is very important, given the drastic climate change from year to year. The younger generation can think about the impacts that will occur in the following years and then implement them in making and implementing those policies (KLHK, [2020](#)).

Based on the description above, the researcher raises research related to the younger generation's knowledge regarding environmental change. The young generation in question is the young generation, namely the generation born in the period 1997 to 2012. The active students studying at Universitas Negeri Gorontalo (UNG) are also in the scope of young generations, which can become the population in this study. What is more, the results of previous studies state that generation who

was born on 1997 until 2005 has a capability as potential leader and a generation that drives change in the future, is drowned by technology. Technology makes young generation traumatic, depressed, and has poor mental health for the future (Bass, [2023](#)). These findings form concerns for the younger generation, who will continue to improve the environment in the future. Before designing changes in the future, the younger generation must first know environmental preservation. Environmental preservation includes what causes the environment to become damaged, then how to process or protect the environment from destruction and damage (KLHK, [2021](#)).

This study uses information integration theory. This theory focuses on how communicators collect and organize information about other people, objects, situations and ideas to form attitudes (Littlejohn, Foss, & Oetzel, [2016](#); Morissan, [2018](#)). In this elaboration, the information known by the Department of Communication students, especially about the environment, will shape students' attitudes toward preserving the environment. The knowledge gained by students will then lead to an inner response. This response will form an attitude toward the already known object, so it can be concluded that good knowledge will also lead to a good attitude (Nofiyanti, Rengganis W, & Lusina, [2015](#)). If students' knowledge of environmental preservation is included in a good level of knowledge, then the attitude of students to preserving the environment is also considered good. On the other hand, even though knowledge is good, attitudes do not go well. Other factors can influence these attitudes, such as the environment, culture, customs, and experience (Alfikrie, Akbar, & Anggreini, [2021](#)).

This study aims to find out about the level of knowledge of students at UNG related to the environment, to know the students' attitudes at UNG, and to find out the media habits of students at UNG in finding out information about the environment. After analyzing these three problems, this study intends to create a model related to the level of knowledge, attitudes, and media habit. The model is adapted to one of the communication theories, namely information integration. Meanwhile, this study hypothesizes that the knowledge of students at UNG is relatively high regarding environmental preservation, the students' attitudes at UNG support preservation and conservation, and media habits that help to understand environmental protection.

## RESEARCH METHOD

This study used a quantitative approach with a cross-sectional design, where each research subject was conducted from May to July 2023 to collect data in the field, process data, and write up the research results. The place for this research is located at Universitas Negeri Gorontalo. The population in this study were active students at Universitas Negeri Gorontalo (UNG). The sample selection technique is a probability sample with a multi-stage cluster sample stage. The sample selection was made because the student population at UNG was too large. In addition, in the process, sample selection also makes costs more efficient, faster, and more resource-efficient in data search (Priadana & Sunarsi, [2021](#)). This sampling technique is used for populations whose nature can be mapped into several groups, such as church congregations, students at universities in one city, etc (Morissan, [2019](#)). The first stage takes clusters from the faculties to be addressed, and the second stage takes majors from the intended faculties. The following chart for sampling in this study shown in **Figure 1**.

Judging from the number of active students at Universitas Negeri Gorontalo (UNG), the students selected were students of classes 2019, 2020, 2021, and 2022 because these students were in semesters 2, 4, 6, and 8. Unlike student batches of 2016, 2017 and 2018, which were dominated by students who had graduated, the sample selection in this study was active students in the four batches. The following is a selection of samples from students in the 2019, 2020, 2021 and 2022 classes with an error rate of 10%. Based on calculations using the Slovin formula per class, it was found that the sample of active students in class 2019 was 44 people, active students in class 2020 were 41 people, active students in class 2021 were 53 people, and active students in class 2022 were 54. The total sample in this study was 192 people.

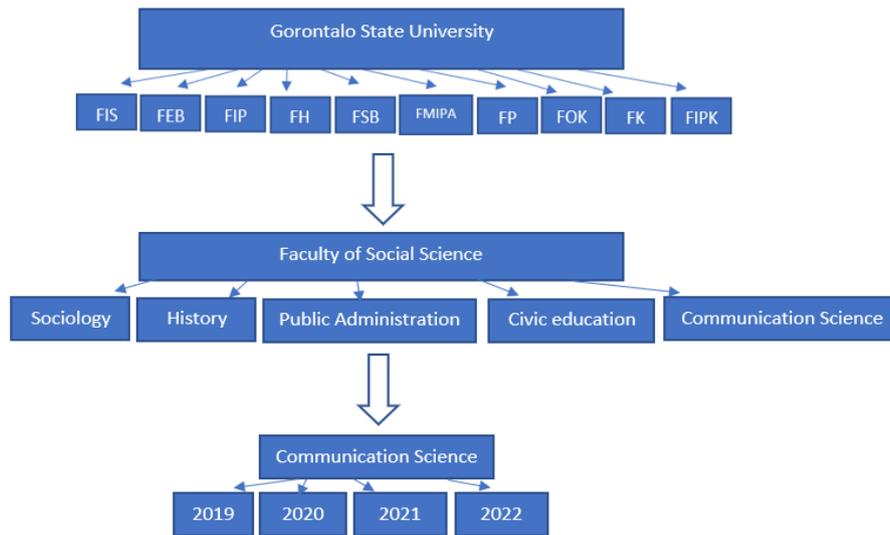


Figure 1. Determination of the sample using a multi-stage cluster sample

The questionnaire distributed to the sample in the field is mixed. For knowledge questions, the questionnaire given is an open questionnaire. Students can answer questions about knowledge without being limited by closed questions. Each answer will be given a score so that an assessment of the level of knowledge will be measured by the Norm Reference Assessment (PAN) formula. The results of the open questionnaire show that the highest knowledge score is 36, while the lowest is 0. The following describes the highest and lowest score thresholds according to the PAN formula:

Table 1. Norm Reference Assessment (PAN) formula

Norm	Category	Score
$M + 1,8 SDi < x$ $= 12,08 + 1,8 (6) < x$ $= 12,08 + 10,8 < x$ $= 22,88 < x$ $\sim 23 < x$	<b>Very high score</b>  x is a score above 23, so the score starts at 23.01	23,01 – 36
$M + 0,6 SDi < x \leq M + 1,8 SDi$ $= 12,08 + 0,6 (6) < x \leq 23$ $= 12,08 + 3,6 < x \leq 23$ $= 15,68 < x \leq 23$ $\sim 16 < x \leq 23$	<b>High score</b>  x is above 16, so the score starts from 16.01	16,01 – 23
$M - 0,6 SDi < x \leq M + 0,6 SDi$ $= 12,08 - 0,6 (6) < x \leq 16$ $= 12,08 - 3,6 < x \leq 16$ $= 8,38 < x \leq 16$ $\sim 8 < x \leq 16$	<b>Sufficient</b>  x is above 8, so the score starts from 8.01	8,01 – 16
$M - 1,8 SDi < x < M - 0,6 SDi$ $= 12,08 - 1,8(6) < x < 8$ $= 12,08 - 10,08 < x < 8$ $\sim 2 < x < 8$	<b>Low</b>  x is a score above 2, so the score starts from 2.01.	2,01 – 8
$x \geq M - 1,8 SDi$  $x \geq 2$	<b>Very low</b>  The scale of a very low score is 0, so the minimum value of x is 0.	0 – 2

Information:

- M = Mean (it is known from table that the mean is 12.08)
- $SDi = (\frac{1}{2}) (\frac{1}{3})$  (maximum value – minimum value)
- = (0.5) (0.333) (36-0) = 5.998 ~ 6
- Maximum value = 36
- Minimum value = 0

Meanwhile, questions about attitudes and media habits are closed questions. The attitude scale consists of five ordinal scales. The questions used in this attitude variable are closed questionnaire questions. The closed questions show the attitude of students who do not preserve the environment, the attitude of students who do not preserve the environment, the attitude of students who quite preserving the environment, the attitude of students who care about the environment, and the attitude of students who care about the environment. The five scales will be used as measuring material for the 19 questions given to the Department of Communication at UNG students. Media habit is an individual's behavior in using mass media and social media to seek and receive environmental information. The first step in finding the media habit scale is finding the range. The range is obtained from the maximum value minus the minimum value so that the range can be used to create a scale on the distributed questionnaire.

**RESULT**

Based on the 192 respondents, who filled out the questionnaire, the research respondents were dominated by female. The number of female students is 61 percent of the 192 respondents. Meanwhile, male respondents only comprised 39 percent of the 192 respondents. For the age category, most respondents at 19 years old. In the second place, the highest number are students aged 21 years. Meanwhile, there are students as respondents, aged 20 years, 22 years, 18 years and 23 years. They are listed as Department of Communication students in the 2019, 2020, 2021 and 2022 batches.

**Knowledge of Environment Preservation**

Questionnaires about knowledge distribution show that students can give a maximum of five answers for each question. If the respondent gives one answer, then the score is one. The results of the elaboration of student answers related to knowledge about environmental preservation are as follows:

**Table 2. Description of the questionnaire and answers about the knowledge of the respondents**

Statements	Answers						Total
	0	1	2	3	4	5	
Respondents gave examples of environmental damage.	7	105	37	25	12	6	192
Respondents gave examples of human actions that cause damage to the environment.	3	119	44	14	9	3	192
Respondents gave examples of natural disasters that damage the environment.	12	94	33	29	13	11	192
Respondents gave examples of human impacts that damage marine life.	49	87	30	18	6	2	192
Respondents gave examples of non-renewable natural resources	21	77	36	34	19	5	192
Respondents gave examples of renewable natural resources	20	73	38	38	18	5	192
Respondents gave examples of technology humans use that can potentially damage the environment.	60	90	22	9	10	1	192
Respondents gave examples of human efforts to overcome environmental damage.	25	94	37	21	10	5	192

For the first question, which is an example of environmental damage, most students answered floods (94 people), followed by landslides (62 people), garbage and waste (39 people), forest fires (20 people), tree felling (20 people), pollution (19 people), drought (15 people), and river pollution (14

people). Respondents also answered various environmental damages, although only one person answered, such as marine exploitation, abrasion, rising environmental temperatures, global warming, damage from mining, etc. It shows that respondents can understand what environmental damage means, even though seven people did not answer the questions from this questionnaire.

The second question is that respondents gave examples of human actions that impact environmental damage. Most of the answers given by respondents were human actions in the form of littering (134 people), logging trees and forests (72 people), burning forests (18 people), polluting rivers (12 people), using motorized vehicles (11 people), not sorting organic and inorganic waste (7 people), polluting the sea by throwing garbage in the sea (9 people) and burning garbage (8 people). Other answers are infrastructure development that does not pay attention to the environment, smoking, buying fashion clothes, hunting animals, bombing fish at sea, not saving water, and not carrying a goody bag when shopping. Three respondents still need to answer this questionnaire. The findings show that respondents can understand human actions that impact environmental damage, even though three people did not answer the question.

The third question asked about examples of natural disasters that damaged the environment; the most answered were floods (103 people), followed by earthquakes (60 people), landslides (57 people), Mount Meletus (40 people), tsunami (40 people), strong winds (17 people), forest fires (9 people), and storms (9 people). Other answers given by respondents were abrasion, global warming, water pollution, sea pollution, soil pollution, and drought. In this question, a total of 12 people did not answer the question, so it was assumed that they did not know the answer to the example of a natural disaster that damaged the environment on the fourth question, which is a question about examples of impacts caused by humans when destroying marine life.

The most frequent answers were answers to throwing garbage in the sea (53 people), marine pollution (33 people), fishing with bombs (27 people), illegal fishing (21 people), fish and coral bombing (20 people), destroying marine habitats (13 people), illegal coral reef harvesting (12 people), cutting down mangroves (12 people), waste from mining (8 people), and tourism that has the potential to damage coral reefs (4 people). Several other individuals answered about infrastructure development on the coast, construction of power plants on the coast, and not sorting waste resulting in the disposal of inorganic waste into the sea. On this question, 49 people did not answer, which shows that knowledge about damage at sea still needs to be more widely understood as environmental damage on land.

For the fifth query, namely questions about examples of non-renewable resources, the most answers were oil (99 people), followed by coal (87 people), and natural gas (54 people). In addition, the answers in the form of nickel (33 people), gold (31 people), and silver (31 people) were in the next sequence. Several respondents answered nuclear, copper, iron ore, metals, minerals, tin, and bronze. To this question, 21 respondents answered that they did not know. The sixth question relates to renewable resources. The results of the findings in this field show that the most answers given by respondents were water (129 people).

The next answers that have a fairly large number are sunlight (62 people), wind (43 people), plants (41 people), air (36 people), and soil (27 people). Several other respondents answered that biomass and geothermal are renewable resources. Meanwhile, for respondents who did not know or did not answer, there were 20 people.

The seventh question in this questionnaire concerns examples of technology humans use and how technology or modernization can potentially damage the environment. The results of filling out open questionnaires by 192 respondents showed that the most answers were vehicles (84 people). The next answers are air conditioners (22 people), factory construction (19 people), smartphones (14

people), mine waste (9 people), and nuclear (9 people). Several other respondents answered that the PLTU was a modernization of steam power that damaged the environment. Some also answered that electricity, bioenergy, refrigerators, plastic, internet, aerosols, chemical fertilizers, and food waste are forms of modernization that damage the environment. A total of 60 respondents did not answer or did not know the answer to this question. It shows that many respondents need help understanding what technology and forms of modernization that are encourage environmental destruction.

Meanwhile, the eighth question exemplifies human efforts to overcome environmental damage. The results of the questionnaire answered by 192 students were not littering (91 people), reforestation (42 people), community awareness (22 people), restrictions on vehicle use (19 people), walking (12 people), river cleaning (12 people), and providing education to the community (11 people). The rest of the answers were waste recycling, reducing plastic, drafting government regulations, limiting the management of natural resources, and stopping illegal logging. On this question a total of 25 people did not know or did not fill out the questionnaire in the answer column for this question.

After describing the knowledge described above, the next step is to calculate the level of knowledge of students from Department of Communication in UNG about environmental preservation. Environmental preservation includes what causes the environment to become damaged, then how to process or protect the environment from destruction and damage (KLHK, 2020). From the level of answers described by 192 respondents and the calculation of answers based on the formula of PAN, it can be concluded that sufficient levels dominate the level of student knowledge.

**Table 3. The results of measuring the level of student knowledge about environmental preservation**

Levels of Knowledge	Score	Total respondents	Percentage
Very high	23,01 – 36	20 respondents	10%
High	16,01 – 23	29 respondents	15%
Sufficient	8,01 – 16	79 respondents	41%
Low	2,01 – 8	62 respondents	32%
Very low	0 – 2	2 respondents	1%
Total		192 respondents	100 %

The research findings show that very high knowledge is obtained by 20 UNG Communications students. Meanwhile, 29 students got high scores for knowledge, 62 for low level, and 2 for very low level. The most dominant is sufficient knowledge, namely 79 students of Department of Communication.

**Behavior**

The questionnaire about behavior distributed is a closed question. With closed questions, the questionnaire has five answers provided by the researcher, namely very inappropriate (VI), inappropriate (I), moderately appropriate (MA), appropriate (A), and very appropriate (VA). Of the 19 questions given to 192 respondents, the following are the answers from the respondents:

**Table 4. The description of the questionnaire and answers about the attitude of the respondents**

Statements	Answers					Total
	VI	I	MA	A	VA	
Respondents agreed to turn off lights that were not used	8	16	54	69	45	192
Respondents agreed to turn off fans that were not used	15	16	57	58	46	192
Respondents agreed to dispose of trash in its place	4	6	51	85	46	192
Respondents agreed to separate organic and inorganic waste	21	40	78	42	11	192

Statements	Answers					Total
	VI	I	MA	A	VA	
Respondents agreed to water-saving measures	6	14	57	63	52	192
Respondents agreed to turn off the tap water when individuals wash their hands with soap.	8	19	65	55	45	192
Respondents agreed to walk from one faculty to another (not using a motorcycle)	17	41	77	32	25	192
Respondents agreed to walk to buy food and photocopies instead of using motorbikes.	22	43	68	42	17	192
Respondents agreed to reduce the use of paper.	7	8	58	40	79	192
Respondents agree that the university is friendly to the environment.	25	66	72	24	5	192
Respondents agree if the university makes an environmental preservation policy.	4	10	50	32	96	192
Respondents agreed with the university's provision of environmentally friendly facilities and technology.	2	5	48	26	111	192
Respondents agreed that universities should have education and curriculum about environmental preservation.	2	6	52	73	59	192
Respondents agreed to bring a Tumbler to campus.	20	78	44	29	21	192
Respondents agreed to bring stenciled straws to campus	48	74	40	22	8	192
Respondents agreed to bring their spoons, so they do not use plastic spoons	47	69	42	16	18	192
Respondents are willing to pay more for plastic from convenience stores	25	75	58	21	13	192
Respondents are willing to use a goody bag for shopping	25	75	78	9	5	192
Respondents agreed to eat all their food because they did not want to add to food waste.	2	6	51	50	83	192
<b>Total</b>	<b>308</b>	<b>667</b>	<b>1100</b>	<b>788</b>	<b>785</b>	<b>3684</b>

The results of the elaboration above illustrate that more respondents consider that they are quite suitable in implementing attitudes to preserve the environment. From the description above, students are still not very suitable for reducing plastic spoons and plastic straws. It can be seen from the number of respondents (48 and 47 people) who considered themselves not following the statement "agreed to bring their straws and spoons". On the other hand, respondents agreed that universities should start implementing a green campus by providing education about environmental preservation and climate change, providing environmentally friendly facilities and technology, and making environmental conservation policies.

## Media Habits

Media habit is a habitual pattern of using media that can be explained by the frequency or time a person consumes media (Gushevinalti, Adeni, & Arrianie, 2014). Media habit is a way of consuming media audiences. The rise of social media has given audiences various choices so they can choose what they want to consume (Podkalicka, 2019). Based on this understanding, data related to the media consumed by students of the Department of Communication Studies at UNG, as well as the duration, frequency, and content consumed, is described as follows:

**Table 5. The description of the questionnaire answered by respondents related to media habits**

Types of mass media	Number
Newspaper	17 respondents
Radio	7 respondents
Television	41 respondents
Social media & online media	192 respondents

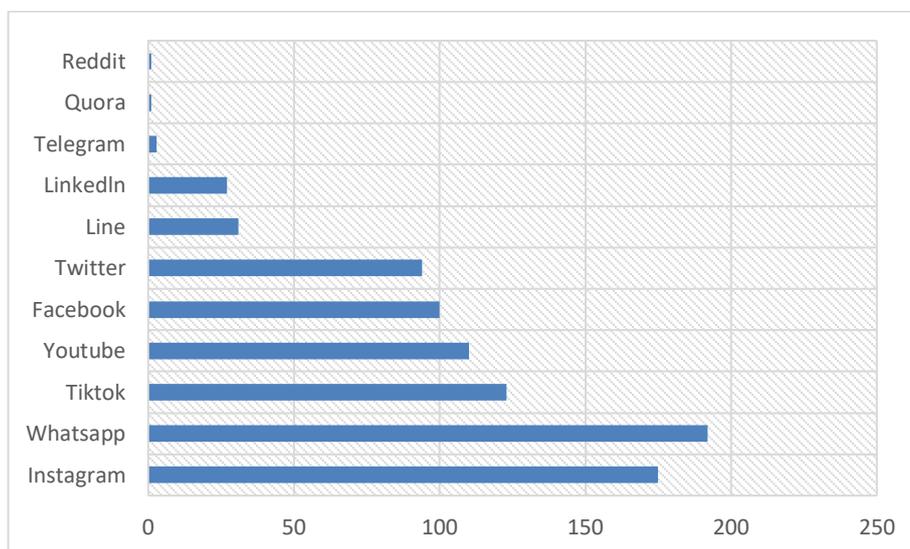
The questions in this questionnaire are open-ended, allowing respondents to choose more than one answer. From the answers of 192 respondents in the field, the media that is consumed the most is media that uses the internet network to access content in the media. Social media and online news are the media for obtaining information most frequently used by respondents.

**Table 6. The statements of mass media use**

Types of mass media	Statements	Number
Newspaper	I do not read newspapers	175 respondents
	I read newspaper every day	1 respondent
	I read newspaper several times a week	11 respondents
	I read newspaper once a week	5 respondents
Radio	I do not listen to the radio	167 respondents
	I listen to the radio every day	19 respondents
	I listen to the radio several times a week	4 respondents
	I listen to the radio once a week	2 respondents
Television	I do not watch television	151 respondents
	I watch television every day	20 respondents
	I watch television several times a week	13 respondents
	I watch television once a week	8 respondents

The findings above show that more than 150 respondents do not consume mass media through television, radio and newspapers. They do not consume mass media in the form of television, radio and newspapers daily, but only a few times, even once a week. It shows that most Department of Communication students at UNG switched from mass media to social media.

From the results of the questionnaire distributed to 192 people, there are various social media used by students. Each student has at least two social media accounts on their cell phone. The following are the social media used by the respondents:



**Figure 2. Chart of respondents as social media users**

From the data above, the number of WhatsApp users is the highest. All respondents have WhatsApp. Meanwhile, the second most social media owned by students at UNG is Instagram (175 people), TikTok (123 people), YouTube (110 people), Facebook (100 people), and Twitter (94 people). Several individuals also own Line, LinkedIn, Telegram, Quora, and Reddit. It shows that social media has become a place for students to communicate with other individuals or netizens rather than using mass media as a tool for communication. The duration of using social media and accessing online news for Department of Communication students at UNG is as follows:

**Table 7. Duration for using social media**

Category	Number
I use social media 0 – 5 hours a day	2 respondents
I use social media for 5-9 hours a day	3 respondents
I use social media for 10-15 hours a day	16 respondents
I use social media for more than 15 hours in one day.	171 respondents
<b>Total</b>	<b>192 respondents</b>

The duration students need to open social media, such as WhatsApp, YouTube, and so on, is dominated by students who open more than 15 hours in one day. It shows that from waking up to going to bed, Department of Communication students at UNG find it difficult to be separated from social media. Another finding from this research is the genre of the program consumed by students through social media.

The genres given in the questionnaire are entertainment, education, news and online information, religion, talk shows, and comedy. In the questionnaire, an "other answers" column is also given if students have other genres that are not presented in the questionnaire. The results of the questionnaire answered by 192 respondents, namely Communication Science students, are as follows:

**Table 8. The genre of content consumed by respondents with social media**

Genre of content	Number
Entertainment	180 respondents
News and online information	99 respondents
Education	79 respondents
Talk show	53 respondents
Religion	28 respondents
Comedy	1 respondent
<b>Total</b>	<b>192 respondents</b>

The results of the findings above show that out of 192 respondents, 180 of them access social media to obtain entertainment content. Furthermore, 99 respondents opened social media to get news and online information, 79 people to get education information, followed by talk shows, religion, and comedy. The result means entertainment is a broadcast that is more in demand than other program genres, including news and online information and education for UNG Communications students.

## DISCUSSION

The results of the findings above indicate that students' media habits are more toward shows related to entertainment. Entertainment such as K-Pop accounts, football accounts, and other entertainment broadcast via social media. Students most often use social media, such as Instagram, WhatsApp, YouTube, and others, rather than television, radio, and newspapers. Previous studies state that social media can be used to convey information, receive feedback quickly, and convey messages in various types of content, making promotions more attractive to audiences (Lathifah & Lubis, 2023). The results show that social media is one of the right media to convey environmental messages in today's digital era.

The information integration theory used in this study focuses on how communicators collect and organize information about an object. These objects can be other people, objects, situations, and ideas to shape individual attitudes (Morissan, 2018). From this statement, it appears that the information integration theory's focus is how communicators, namely students, collect messages about protecting the environment and students' attitudes after receiving the information. This attitude shows whether students have a desire to protect the environment or not.

Assuming from the theory of information integration that individuals collect and manage information, the results of this study indicate that the information managed by UNG Department of Communication students tends to be information related to entertainment, not education. Information consumed by students leads to entertainment, supported by data that says that students tend to follow and subscribe to accounts related to the world of entertainment. Other entertainment accounts. Compared with students who follow education-related accounts, the numbers are very far away. Students who take part in educational accounts, especially about the environment, are fewer in number than students who take part in informational accounts about education. Thus, students often manage information about entertainment rather than education.

Another assumption of information integration theory is that the information collected will form knowledge and can change individual attitudes based on the information collected. Information can potentially change individuals' attitudes toward an object (Morissan, 2018). Information that tends to be collected is information about entertainment. Student knowledge is dominated by sufficient knowledge. Meanwhile, regarding student attitudes, this attitude is reflected in not liking to carry or use a tumbler, not being willing to pay more for plastic bags at the minimarket, and not liking carrying cloth bags when shopping. So, from the results of this study, it can be predicted that if students consume more information about the environment, students will increasingly change their attitudes towards a more positive attitude about the environment. Students can change their attitude toward using cloth or goody bags when shopping. Students can also reduce plastic bags, start bringing tumblers to campus, and then apply them daily.

Seeing students' knowledge and actions, as well as being supported by student media habit data, the researchers considered that the findings from the study showed that students prefer to sort information about objects in the form of environmental messages if these messages are conveyed through social media rather than newspapers, television, and radio. The research results also show that messages conveyed through social media must pay attention to clear writing captions that can be understood by all layers of the audience who see them (Arsita & Sanjaya, 2021).

Using hashtags or hashtags is also very important to attract audience interest. This research is related to a campaign for tree planting in Kalimantan, which uses the hashtag #Mybabytree and is posted on WWF's Instagram (Puspita, Karo, Kurniawati, Harry, & Fernando, 2022). The results of the 2013 study also illustrated that researchers suggested changing the delivery of environmental communication messages from traditional media to social media (Jeffres, Jian, & Yoon, 2013). Therefore, using social media along with appropriate strategies can make students focus on objects, increase knowledge about the environment, and change students' attitudes towards environmental preservation.

Apart from that, strategies for conveying messages about the environment can also be conveyed by relying on influencers, such as celebrities on Instagram, TikTok celebrities, and YouTubers. As for previous research, it was stated that influencer credibility must be raised first as an influencer in the environmental field. By increasing this credibility, the messages conveyed by influencers can increase the pro-environmental intentions of young people (Boerman, Meijers, & Zwart, 2022). The contents must also be considered because the content can reflect hidden messages behind the words and symbols displayed in the content. The results have been proven in several previous studies, especially content related to using Instagram as a means of politics and spreading hoaxes (Juniarti, Indainanto, & Augustine, 2018; Prathama, Hasani, & Akbar, 2022).

In information integration theory, there are elements of valence and credibility. Valence refers to an individual's belief that persists or changes after receiving the information, and credibility refers to an individual's change in assessing something after receiving the information (Littlejohn et al., 2016). The results of this study indicate that the information individuals receive about the

environment differs from changes in individual attitudes toward environmental preservation. It is shown by the scale of individual attitudes, which are dominated by students who do not agree to leave the campus to provide food and photocopies on foot, even though they are close. Students seem to prefer to use motorbikes. In addition to this attitude, another attitude that can be seen is that students do not agree with walking on campus from one faculty to another and prefer to use motorbikes, even though the distance is close. Another attitude is that students prefer to avoid bringing stencil spoons and prefer plastic spoons. Students do not agree to pay for plastic bags when shopping at the mini market. Students also disagreed with washing their hands and turned off the water while washing their hands, agreed to dispose of trash in its place, and strongly agreed to spend food because they did not want to add to the waste. It shows that the valence of the information received by students still cannot change students' attitudes to be responsible for environmental preservation.

Meanwhile, concerning the credibility of information, Morrisan (2018) states that this credibility is shown by individuals who can change their assessment of environmental preservation after receiving information from communicants or information sources. Results also show that this information changes individual attitudes towards the university, where individuals support the university in carrying out activities and procurement to form a green campus. The green campus is one of the efforts to preserve the environment, which starts from the scope of the university first, then impacts changes in society at large (Gross, 2007; Hapsari, Sumarjiyanto Bm, & Purwanti, 2014). It can also be seen from the research findings show that students agree that universities need to implement facilities and technology (trash cans, bicycles, etc.) to preserve the environment, students agree that there is a need for further education regarding environmental preservation and climate change, and students agree that the policy of paperless is applied in carrying out assignments.

Therefore, information about the environment that students can receive has valence and credibility, which can increase student knowledge and change student attitudes. This information can be conveyed through the mass media in the form of news on television, radio and newspapers for the whole community. However, if the goal is young people, then the most appropriate way to convey information is to use social media.

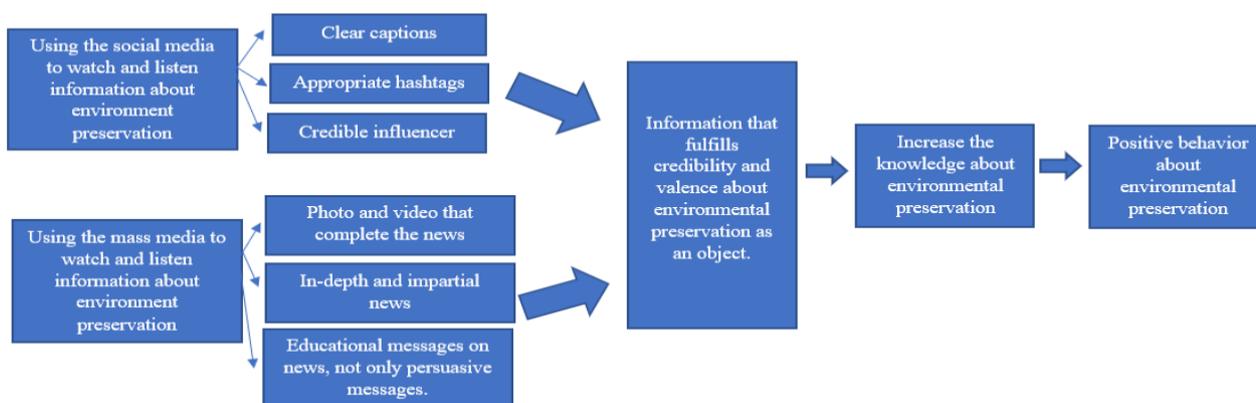
Previous research also stated that information about the environment, such as information about the cleanliness and development of the Citarum River, must be proven through photos, videos, and in-depth coverage of the Citarum River, so that the audience believes that the information conveyed has valence and credibility to be trusted, so that trust these can change individual beliefs as readers regarding information about the Citarum River (Ramadhan, Sumartias, & Yustikasari, 2020). State of the art is also supported by the findings in this study, where students tend to believe in and see shows that appear in audiovisual form, namely social media. Students prefer environmental news and information on social media rather than newspapers and radio. It can be seen in the findings on media habits that students are majoring in Communication at UNG. Students are quicker to follow social media accounts that display what they like rather than individuals who watch television, listen to the radio, and read newspapers to find more information about that phenomenon (Sulaiman & Harpiansi, 2018).

From several previous studies, it appears that news about the environment has not received much attention from the mass media in the previous few years, even though the environment is one of the most interesting issues and urgently needs to be discussed. For example, in 2016, the news published in the well-known online media, Kompas.com, did not present information from the environmental side of reclamation activities but from the political and legal side regarding the reclamation (Reynaldi & Humeira, 2021). The results from a 2020 study on forest fires in Riau also show a different framing. In the *Tribukpekanbaru.com* news, the media is more inclined to report on forest and land fires as events, while *Riaupos.co* presents news about the government's role in overcoming forest and land fire disasters (Wahidar & Yozani, 2020). It is consistent with previous

research on the environment and development of SGDs, where journalists in the mass media tend to report on ceremonial signings rather than reporting on environmental developments after the program is implemented (Wijayanto & Nurhajati, 2019).

Even in 2023, previous research shows that reporting on deforestation in West Aceh still needs to be more optimal and ideal for environmental journalism. The data obtained cannot be accounted for, so what is reported is only limited to events that occurred in the field (Al Zuhri, Maulina, Fazri, Fadhillah, & Fikrullah, 2023). The results of other studies show that this non-ideality is caused by several things, including the skills of media crews in reporting environmental issues and diplomatic strategies in reporting environmental issues (Wahyuni, 2017).

According to Abrar (2018), the ideal environmental news is value-free. It makes environmental realities, such as pollution, deforestation, garbage, pollution, and others, the main framing reported in any media, starting from print, online, and television. In addition, news about the environment should aim to provide valuable and valuable information to the audience regarding environmental sustainability (Abrar, 2018), not be news containing persuasive information that favors one side and the other. Based on this discussion, the following are the results of the research that can be compiled based on the findings and discussion:



**Figure 3. Research findings of integration information of environmental preservation information**

The figure above shows that the use of social media and the use of mass media have strategies for increasing knowledge and changing individual attitudes. The subjects in this study were university students, so the use of social media is very different compared to mass media, such as television, radio and newspapers. If conveying information about environmental preservation using social media, the strategy needed to increase student knowledge and change student attitudes is to have clear captions and hashtags that match the messages in the captions and are delivered by credible influencers. Meanwhile, for mass media that are of interest to people in general, both the younger generation and the older generation, the right strategy for conveying environmental messages using mass media is to have photos and videos that support the news, in-depth news coverage, and impartial, and the delivery of messages that are more educative, no longer persuasive messages and messages that take sides.

## CONCLUSION

The level of knowledge of Department of Communication, Universitas Negeri Gorontalo's students about environmental preservation is at sufficient level. The behavior of students toward preserving the environment differs from the knowledge students possess. Students realize that using air conditioners, plastic straws, motorbikes, and littering damage the environment, but students still do it. Students also prefer to avoid carrying cloth bags when shopping, do not like walking off campus to buy food and photocopies, do not like walking around campus (from one faculty to another), and do

not agree with carrying stencil spoons. On the other hand, students support universities carrying out a greening program in the campus area and hold programs related to preventing changes from the adverse effects of climate change. Media habit of students tend to use social media rather than radio, television, and newspapers. On the other hand, students also follow or subscribe more to events in the entertainment genre than educational, religious, and other genre events.

Apart from conclusions, this research also provides suggestions. These suggestions are addressed to universities to start opening curricula related to environmental communication or communication about environmental preservation. Suggestions for the community to start realizing the importance of protecting the environment when damage occurs, which results in material and non-material losses. It is because, so far, people's attitudes determine the quality of the environment, which needs to be given more attention, starting from littering, and using vehicles that cause air pollution, deforestation, forest fires, and water pollution. The suggestion is giving for the government to pay more attention to environmental problems, especially land clearing by infrastructure development, which can cause environmental problems such as floods, landslides, extinction of endangered animals, lack of clean water, and air pollution. The last suggestions for the mass media as stakeholders that have an important role in communicating, especially to a wide audience such as the public. Whether it is using print, electronic, or online media that can be used as a communication channel, therefore, the mass media still needs to be improved in presenting accurate and actual information on news, especially on environmental reporting.

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