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University students' preferred channels and sources of communicating climate change

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Abstract

Understanding students' climate change concern may be a key strategy for building a citizenry that supports climate change action. Students' information seeking and media use condition is a major challenge to overcome for the effective climate change communication. This study was conducted as a descriptive survey analysis of the Filipino university students' preferences on climate change information channels and sources. The research participants were the 200 sampled university students. Descriptive statistics such as frequency and parentage were used to analyze and interpret the data gathered through survey checklist. Results of the study showed that television, internet, cell phone, radio, family and friends are strong information channels to communicate climate change to young sectors of the Philippine society. Meanwhile, the role of family and friends cannot be undervalued as a communication source of climate change. The students also highly preferred communication sources from science institutions, teachers and professors, and government organizations showing a positive level of environmental concern and attention to the environmental news. This study also reveals that the students were highly attentive to environmental news. This implicates that most of the students perceive climate change as a problem that will primarily affect future generations of people as well as their health, security, and safety. This is also attributed to the recent devastating typhoons that hit the Philippines making the young respondents have been interested in environmental concerns.

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Introduction

The evidence of climate change is largely undisputed, but how to moderate the impacts of climate change remains a complex, multifaceted, and global problem (Zabal & Cornwel, 2016). Compounding the challenge is the topic itself: an area that is scientifically complex, confusing to many, laden with popular misinformation and misdirection, and often emotionally and politically charged.

The protection and development of environmental resources and social responsibility is an area of growing importance for consumers, businesses, governments, and the society at large (Grinstein and Nisan 2009). However, not everyone shares this view and for many individuals or groups, environmental protection is not as important (Lord 1994). The Center for Research on Environmental Decisions (2009) affirms that behavioral scientists are well aware of the difficulties that individuals and groups have in processing and responding effectively to the information surrounding complex societal challenges, and this is no less true for the issue of climate change. Indeed, the majority of people around the world perceive climate change as abstract, remote, and distant. As a result, this critical issue is not perceived as meriting their concern nor does it induce them to take an immediate, significant, and potentially costly action in response to it. Moreover, it is often very difficult to effectively disseminate critically useful information about climate change.

Public understanding of environmental issues is treated as a mass communication problem that has yet to be adequately solved. The public understanding of this and other environmental problems typically find understanding to be lacking, while studies of media effects conclude that media have little or no effect, or even that they contribute to misunderstanding (Stamm, Clark, & Eblacas, 2000).

Since research on public understanding of environmental concerns has so far focused mainly on the inadequacies in understanding there is a need for effective science communication which is not a one-way process, and that public controversies about scientific issues are not straightforwardly attributable to a lack of knowledge among the general public (Sturgis & Allum, 2004).

Flor (2004) sees environmental communication as the application of communication to environmental management and protection through principles, strategies, and techniques. The foundation of environmental communication according to Flor (2004) is predicated on the general systems theory as bed rocked within the framework of ensuring that every living system engages in: the exchange of materials with its environment and with other living systems; the exchange of energy with its environment and with other living systems; the exchange of information with its environment and with other living systems. Interestingly, Mohammad (2011) posits that environmental communication is a tool for which environmental problems are solved in a scientific way by the scientists in the different fields of study.

Recent investigations of perceptions of climate change have used surveys to examine the views of large populations (Leiserowitz and Smith 2012). While highly useful, by nature, these surveys cannot capture the nuance of social context and sense of place, which researchers have found influence people's understandings of climate change (Crate and Nuttall 2009). Hence, this study builds on the survey of the university students' preferred channels, and sources of communicating climate change which will serve as a basis to strengthen the environmental awareness of Filipino youth.

According to Hamilton *et al* (2015), environmental sociologists suggest that people might not engage in environmentally friendly actions because they have an insufficient understanding of the impact of their actions on environmental sustainability and climate change. Several empirical studies have found that the past experience of adverse climate phenomena can influence levels of knowledge and attitudes related to climate change and other environmental issues.

This study hopes to contribute to the enhancement of the understanding of Filipino youth on climate change.

Lorenzoni *et al* (2007) affirm that the task of communicating environmental related information is, however, complex and there are psychological barriers to engage the public including the challenge of communicating uncertainty and risk information. Precisely this challenge is being faced by the different government agencies tasked to inform the public on the environmental status and disaster risks the country is presently experiencing (Harris & Corner, 2011).

This study aims to describe the University Students' Preferred Channels and Sources of Communicating Climate Change. It specifically aims to: (1) identify the Preferred Communication Channels of the respondents on climate change; (2) ascertain the preferred Communication Sources of the respondents on climate change; (3) determine students' level of interest to specific forms of news; and (4) describe the students' Level of Interest to Specific Forms of News.

Materials and methods

Method of Research

This study employed a descriptive survey research design as it assessed the university students" preferred channels and sources of communicating climate change. Kerlinger (1986) considered survey research as social scientific research and focuses on people, the vital facts of people, and their beliefs, opinions, attitudes, motivations, and behavior. It has been clarified that the social scientific nature of the survey research is revealed by the nature of its variables which can be classified as sociological facts, opinions, and attitudes.

Participants and Research Instruments

A total of 200 college students purposively sampled in one campus of a state university in Region 02, Philippines were the sources of data. Simple random sampling was employed to select the number of student participants. The research instrument used in this study was based from Li (2015) and was modified by the researcher to suit the Filipino standard to better describe the public's information seeking and media use.

Data Gathering Procedure

Approval was sought through formal communication letter from concerned authorities to administer the questionnaire. Inform consent was also sought. Upon informed consent, the researcher ensured proper consultation for the schedule of the administration of the questionnaire. Distribution and retrieval were personally executed by the researcher.

As agreed upon by the concerned authorities and the researcher, data gathered was properly kept to ensure its confidentially and were strictly used for research purposes only. The elicited quantitative data had undergone checking, scoring, analysis, and interpretation.

Data Analysis

Every item in the questionnaire was analyzed and interpreted. The researcher utilized frequency and percentage distribution to analyze and interpret the data that provided an answer to the specific problems posed in this study. Through this procedure, the preferred channels and sources of communicating climate change among university students were obtained.

Results and discussion

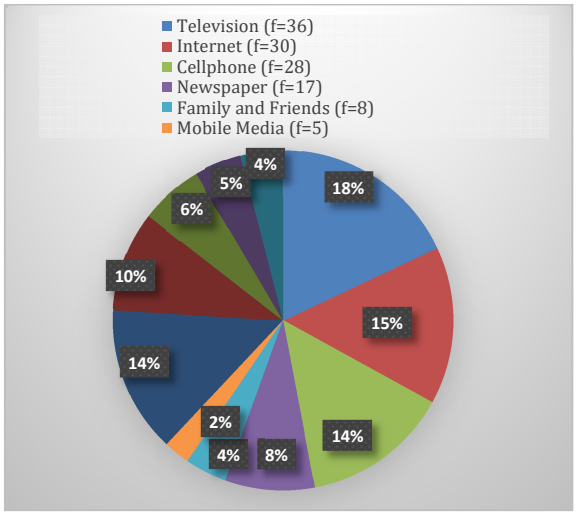

Fig. 1. Frequency and Percentage Distribution of the Preferred Communication Channels of the respondents (n=200) on climate change.

Fig. 1 presents the frequency and percentage distribution of the preferred communication channels of the respondents on climate change. It can be observed from the fig. that majority or eighteen percent of the respondents prefer to have access information related to climate change through

television (f=36), followed by the fifteen percent who prefer internet (f=30), with fourteen percent signified through cellphone (f=28) and radio (f=28). Meanwhile, ten percent of the respondents consider magazine (f=19) as information seeking channel. The fig. also indicates that eight percent of the respondents consider magazine (f=19) as the preferred information channel. Six percent of the respondents prefer Propaganda activity (f=12), five percent for publications (f=9), four percent each for both family and friends (f=8), and workshops and seminars (f=8).

Results implicate that television, internet and radio are strong information channels to communicate climate change to young sectors of the Philippine society. This result collaborates with the finding of Li (2005) that popular communication channels of people for them to have access information related to climate change are through TV, cell-phone, and internet. In like manner, in the study of Lagunda (2005) regarding channels the public access to climate change information, many polls have found that television and daily newspapers and radio are the primary channels among developing countries.

Likewise, the popularity in the use of mobile phones in rural areas has tremendously increased very fast. This increase has been contributed by falling costs and prices of mobile services, increased network coverage in rural areas and facilitation from national policies on information and communication technologies (Rashid & Eldar, 2009). UNEP (2005) notes that communication is a critical tool in climate change response for the whole society, Informed, motivated and committed public can help the society to achieve our low carbon goals.

According to Windahl (1992), the communication channel is an instrument or medium used to transmit the message and has little to do with the meaning of messages. According to several theorists, the capability to convey information is highly dependent on the choice of the communication channel, which makes it to one of the most complex and controversial factors in the communication process (Miller, 1995). The complexity of today's communication industry with its new roles and shifting combinations of different gender roles, will confuse audiences further and make them less willing to listen (Windahl *et al.*, 1992).

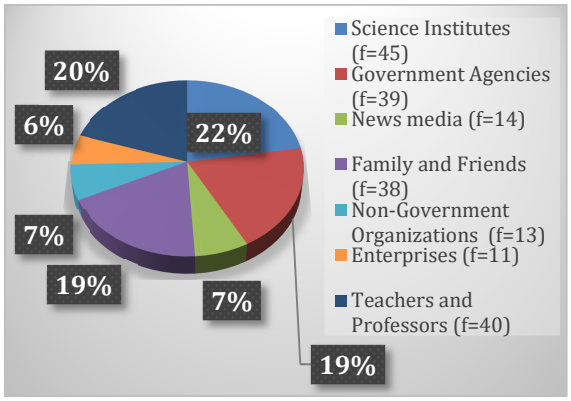

Fig. 2. Frequency and Percentage Distribution of the Preferred Communication Sources of the respondents (n=200) on climate change.

Fig. 2 indicates Frequency and Percentage Distribution of the Preferred Communication Sources of the respondents (n=200) on climate change. It can be noticed that twenty-two percent of the respondents preferred science institutions 9f=22%) as the source of information, followed by twenty percent of teachers and professors (f=40), whereas nineteen percent of the respondents preferred their family and friends (f=38) and government agencies (f=39) as sources of environmental information. Percentages of the respondents which are seven percent for news media (f=14), seven percent for non-government institutions (f=11), and the least six percent of the respondents preferred enterprises (f=11).

The large portion of the respondents preferred communication sources from science institutions, teachers and professors, and government organizations. This generally implies that individuals' trust of experts has been shown to play an influential role in shaping peoples' views about global warming. As Malka *et al.* (2009) demonstrate, trust in the scientific community significantly influences peoples' beliefs about climate change as well. For people who have less faith in climate science, receiving information from trusted sources about the relevance and significance of climate change from a moral

standpoint could be a means of reducing skepticism and uncertainty among the public regarding the extent that addressing this issue should be a high priority. This survey shows that science institutes (scientists) were generally conceived to be a much more trusted source of climate change information than any other sources. The complexities of the climate change issue, as well as the scientific uncertainties involved and the far distance from their daily life, could be used to explain this phenomenon, the science institutes are identified as holding the most credibility because they are the authoritative institutions with professional knowledge about this issue. According to Cash *et al.* (2002) confirm that when dealing with scientific communication and framing, research shows that an audience may be more receptive when they perceive the information being communicated as having salience, relevance, authority, and legitimacy.

Meanwhile, the role of family and friends cannot be undervalued as a communication source of climate change revealing a large number of respondents relying on them. Hence, bringing the message of climate change closer to the homes and peers will further increase environmental awareness of the students. Mead *et al.* (2012) noted that there are studies suggest that parents may influence the climate-related information-seeking behavior of teens, as those teens whose parents' perceived climate change as high risk were more likely to seek out information on climate change (Mead *et al.* 2012). Similarly, peers in classroom settings tended to help each other construct a shared understanding of climate change through discussion, and teachers facilitated this process by guiding students to understandings that were scientifically sound (Öhman and Öhman 2013). In addition, young people who talked about climate change with their friends and families were less likely to de-emphasize the seriousness of climate change than those who did not (Ojala 2013), and those who talked with skeptical parents and peers tended to be more skeptical themselves (Ojala 2015).

Weber and Stern (2011) also define the understanding of climate change as a set of cognitions about what 'climate' and 'climate change' mean, what the essential attributes of climate are, how these attributes are connected to each other, what causes climate change, what the consequences of climate change will be, and the degree of confidence that should be placed in various knowledge claims about climate change. The addressing of climate change can only succeed if the effective information dissemination to the general public and make them realize the climate risk and support effective action.

Table 1. Frequency and Percentage Distribution of Respondents' Environmental Concern and Attention to Environmental News.

	Frequency	Percentage
Very Concerned	30	15
Concerned	140	70
Undecided	13	7
Not much Concerned	15	8
Not concerned at all	2	1
Total	200	100%

As evidenced from Table 1 shows the level of environmental concern of the respondents, it can be inferred that 70 percent of the respondents are concerned (f=140) about the environment, followed by fifteen percent who are very concerned (f=30). While seven percent of them is undecided (f=13), eight percent is not much concerned (f=15), and the least percentage of one is not all concerned (f=2). Finding generally implies that almost all the respondents have established a positive level of environmental concern and attention to environmental news signifying that this is a good start for the student to have a better understanding of environmental problems and issues arising at present time.

Ajzen (1991) asserted that favorable or unfavorable attitudes towards a particular behavior are caused by one's behavioral beliefs; subjective norms result from normative beliefs and personal moral norms, while perceived behavioral control originates from control-related beliefs. Mehan (2007) also pointed out that consciousness about the environmental matters and concerns with an attitude of protection of natural resources should be inculcated in the minds of the

young, who will eventually become the future citizens of a nation. Magulod (2018) also confirmed that among university students, there is a significant relationship between environmental awareness and environmental attitude. Suggesting that the higher awareness the students about the environment, the higher the environmental attitude they exhibit. Hence, by providing knowledge to students about climate change, the higher they demonstrate the positive attitude towards environmental care is expected.

Table 2. Frequency and Percentage Distribution of Respondents' Level of Interest to Specific Forms of News.

	Frequency	Percentage
Environmental news	50	25
Economic News	15	8
Political news	30	15
Entertainments	32	16
Social News	24	12
Science & Technology News	19	10
Celebrity and Showbiz news	30	15
Total	200	100%

Table 2 reveals the frequency and percentage distribution of respondents' level of interest to specific forms of news. Most of the respondents or 25% of them have the highest level of interest to environmental news (f=50), followed by the sixteen percent of entertainments (f=32), fifteen percent for political news (f=30), and celebrity and showbiz news (f=30), and twelve percent have an interest in social news (f=24), while the least percentage of fifteen percentage have interest in economic news (f=8).

The finding shows that the respondents are highly attentive to environmental news. This implicates that most of the students perceive climate change as a problem that will primarily affect future generations of people as well as their health, security, and safety. This is also attributed to the recent devastating typhoon that hit the Philippines making the young respondents to have been interested in news about the environment. This can be explained by Spence *et al* (2011) that people who have a better awareness of climate change and/or have had negative experiences caused by the adverse impact of climate change show a greater concern for environmental issues and tend to alter their behavior. They further added that people who have experienced floods are more likely to engage in energy-saving activities than their counterparts.

In like manner, Rajapaksa, Islam & Managi (2018) confirmed that existing researches suggest that personal experience of environmental risks can induce behavioral change, which can, in turn, reduce the negative externalities of climate change.

Conclusion

This study was conducted as a descriptive survey analysis of the Filipino university students' preferences on climate change information channels and sources. Results of the study showed that television, internet, cell phone, radio, family, and friends are strong information channels to communicate climate change to young sectors of the Philippine society. Meanwhile, the role of family and friends cannot be undervalued as a communication source of climate change. The students also highly preferred communication sources from science institutions, teachers and professors, and government organizations showing a positive level of environmental concern and attention to the environmental news. This study also reveals that the students were highly attentive to environmental news. This implicates that most of the students perceive climate change as a problem that will primarily affect future generations of people as well as their health, security, and safety. This is also attributed to the recent devastating typhoons that hit the Philippines making the young respondents have been interested in environmental concerns.

Recommendation

As an important implication of the study, the following recommendations are offered: (1) adding environment-related courses in the curriculum may be considered to better instill ecological concepts among the students; (2) faculty members are also encouraged to reflect on their practices and methods/approaches in incorporating environmental concepts in teaching to further strengthen students' environmental competencies; (3) students will further

develop strong environmental knowledge, awareness and capacity for positive environmental change when it contextualized or taught using real examples, problem-solving, bringing nature inside the classroom, field-trip, find impromptu teachable moments and with active student participation since personal experience of climate change leads people to become convinced of its reality; (4) Parents, communicators, and educators, and conservationists should add climate change to the list of talking points essential to ensuring adolescents are prepared to be healthy adults, engaged citizens, and sustainers of the plane; (5) Regular updates and alerts in case of abnormal environments should be communicated easily through television, internet, cellphone, and radio; (6) Further studies need to be conducted with wider samples, scope, and variables to validate the findings of this study.

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