

The role of mass media and level of education in spreading environmental sustainability awareness in developing countries

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ABSTRACT

Today, our environment is a constant and continuous threat from continuous land misuse, which has led to serious environmental disasters in several parts of the world and is even projected to cause a global environmental catastrophe in the next decades. As information technology continues to evolve, the power of mass media cannot be underestimated. On a positive note, one of the significant benefits emanating from the effective use of media is the ability to increase awareness. This study explores the role of mass media and educational level in contributing to the spread of environmental awareness. The study aims to understand how the role of mass media and level of education is contributing to creating and spreading environmental awareness in developing countries. Near East University, which has a rich population of international students from diverse developing countries, was the study location. As a quantitative analysis, questionnaires administered to individual participants were designed using a five-point Likert questionnaire format. Data were analyzed by Pearson correlation and descriptive analysis. The research results indicated that participants strongly agreed that the role of mass media in developing countries needs improvement in the spread of environmental awareness. Pearson's r data analysis revealed a significant perfect positive correlation, signifying a strong positive correlation between education level and environmental sustainability awareness. The perception of the participants on environmental issues was also discussed.

Keywords: Education level; Environmental awareness; Environmental issues; Mass media; Developing countries

1. Introduction

In recent years, environmental challenges have become common in both third world and first world countries. These challenges are usually associated directly or indirectly with man-made activities such as industrialization and land misuse, which have resulted in the depletion of the ozone layer and global warming. According to leading

environment and climate scientists, global warming could increase temperatures from between 1.5C and 2C and beyond, which means that 100 s of millions of people will be affected by global environmental disasters in the form of earthquakes, droughts, landslides, acid rain, hurricanes, floods, extreme heat and loss of agricultural productivity etc. [1]. These disasters could create or worsen wars, poverty,

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water shortages, and massive species extinctions. Although the Paris agreement was signed by 195 countries targeted at keeping the global temperature increase between 1.5C and 2C, the political situation rendered the agreement futile [2]. Currently, the world is 1C warmer compared to the pre-industrial era, which is an indicating that the situation is worsening, as can be seen in the devastating US hurricanes, record droughts in South Africa and forest fires in the Arctic.

Greenhouse and CO₂ gas emissions, industrialization, deforestation, livestock production, aerosols, and overuse of electricity are major contributors to environmental problems [3]. Other contributing factors may include overpopulation, improper waste disposal (especially nonbiodegradables), urban sprawling, water, air, and land pollution. If the environment is not protected, both humans and animals/plant existence will be significantly affected or completely eradicated. The activities of humans have greatly contributed to global warming; hence, we must understand how we contribute to global warming both individually and collectively. Creating and spreading awareness in developing parts of the world has not been easy. However, the media has been a useful contributing force in the creation and dissemination of environmental sustainability awareness over the past decades. One can argue that the world is becoming more aware of the environment through increasing and improving media coverage. The media tools have been used to spread awareness on climate change and the resulting environmental problems across the world. The media has also contributed to spreading awareness regarding human activities that are continuously contributing to current global environmental challenges.

Approximately 1.5 billion of the world's population have access to 2,700 global media channels either locally or globally [4]. The major tools of mass media include television, radio, internet, mobile, newspaper, etc. TV, radio, and newspapers have always been an effective means of spreading information to the general public; however, the internet is considered to be the most effective and relevant tool of mass media that enables easy access to large sources of information today. According to the annual release of [5], there are about 4.021 billion internet users with 3.196 active social media users around the globe. International Telecommunication Union (ITU) release has shown that there has been a significant development in internet usage across developing countries compared to developed countries, with a sustainable increase from 7.7% in 2005 to 24.4% in 2018. Africa was reported to have increased from 2.1% to 24.4% from 2005 to 2018 [6]. As these statistics show, it is possible to spread awareness about various environmental related issues that directly or indirectly result in disasters to an entire society or the world at large. Once people become aware of the state of the environment, and how their activities affect the environment, they will be motivated to protect themselves by protecting the environment.

Besley and Shanahan [7] explained that the media is useful for airing factors that affect the environment and how they can be controlled. In support of this, Bıçakçı and Prof [8] concluded that the mass media tools can be used in the fight against climate change since it is possible to effectively spread information to billions of people across the globe within a second, allowing people to take actions in terms of what they do individually and collectively about

the environment. According to Zita et al. [9], the media is a major contributor to societal knowledge of the environment and is eliminating the process of person-to-person information distribution. However, Wong [10], disagreed and expressed that the media focuses mostly on political issues whilst assigning the least priority to environmental-related issues. The problem considered in this research is that information about environmental challenges becomes widely available to the general public only when there is a major environmental disaster. Hence, the role of the media in climate change awareness is undiluted. A study conducted in six major African countries showed that television media gives less than 3% focus on environmental awareness [11].

The general aim of this study is to analyze the role of mass media in creating and spreading environmental awareness; however, we also aim to understand the status and performance of mass media regarding environmental awareness. The following research questions are asked:

- How do people in developing countries perceive environmental problems?
- Is mass media helpful in the dissemination of environmental-related issues?
- Is there any relationship between educational level and environmental sustainability awareness?

This study seeks to answer these questions through quantitative analysis as a contribution to previous studies.

2. Methodology

This study is a descriptive study using the screening model in which we seek to determine the consciousness of people in developing countries towards environmental and climate change problems, their basic knowledge about the subject matter, educational level, and the role of mass media tools in spreading awareness. The reliant (dependent) variable is environmental awareness and the liberated (independent) variables include the knowledge and educational level, perception, behavior and the role of mass media tools in propagating environmental awareness for sustainability, as shown in Fig. 1. The relationship between these two variables will be determined and justified using a statistical model.

2.1. Research design

The nature of the study is quantitative in that we gathered useful data from participants by using an e-questionnaire instrument.

2.1.1. Participants

The participants of this study were 550 students that were enrolled at Near East University (NEU) during the spring semester of the 2018–2019 academic year. There was a total of 443 males and 107 females who participated in the study. The participants consisted of citizens from Egypt, Sudan, Nigeria, Iraq, Syria, Palestine, Gambia, and Turkey. Table 1 shows the sample distribution of participants according to several variables.

2.1.2. Research instrument

The research instrument used in this study is a five-point Likert questionnaire. The questionnaire was in electronic form (e-questionnaire), which was created using the Likert scale format. The questionnaire was designed to investigate

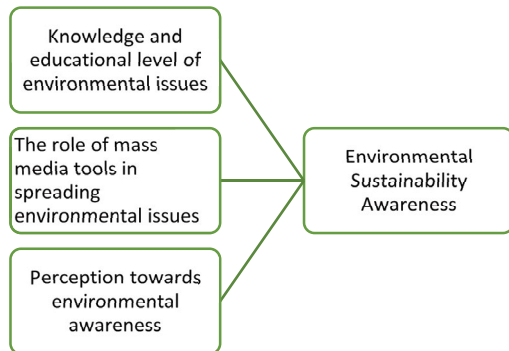


Fig. 1. Conceptual structure of study.

Table 1
Demographic information of participants (N = 550)

Variable		n	%
Gender	Female	107	19.4
	Male	443	80.6
Age	21–30	420	76.4
	31–40	114	20.8
	41–50	15	2.8
	50 above	1	1.4
	High school	53	9.6
Educational level	Bachelor	310	56.4
	Master	140	25.5
	Doctorate	47	8.5
Country	Nigeria	283	51.6
	Turkey	47	8.5
	Sudan	47	8.5
	Egypt	25	4.5
	Syria	39	7.1
	Iraq	31	5.6
	Palestine	39	7.1
	Gambia	39	7.1

Table 2
Range of correlation coefficients

Range of correlation coefficients	Positive	Range of correlation coefficient	Negative
1.0	Perfect+	–1.0	Perfect –
0.8 to 0.99	Very strong+	–0.8 to –0.99	Very strong –
0.6 to 0.8	Strong+	–0.6 to –0.8	Strong –
0.4 to 0.6	Moderate+	–0.4 to –0.6	Moderate –
0.2 to 0.4	Weak+	–0.2 to –0.4	Weak –
0 to 0.2	Very weak+	0 to –0.2	Very weak –

the role and viability of mass media in spreading awareness in developing countries. Additionally, the questionnaire took into consideration the level of education of participants. The questionnaire was mainly distributed at NEU, which has a large and diversified population of international students, especially from developing countries.

The authors contacted 550 students in NEU and requested them to answer the e-questionnaire that was developed for the study. The e-questionnaire consisted of 3 sections and a total of 12 questions. Demographic questions were arranged in the first section, while participants' general knowledge of environmental awareness was in the second section (6 questions). In the third section, 6 questions were targeted at the role of mass media in spreading environmental sustainability awareness.

The Likert type questionnaire evaluation intervals are as follows: 1.00–1.80 “strongly disagree”; 1.81–2.60 “Disagree”; 2.61–3.40 “Neutral”; 3.41–4.20 “Agree” and 4.21–5.00 “Strongly agree”. The Cronbach's alpha reliability coefficient of the questionnaire was calculated as 0.85.

The statistical analysis methods that were applied for this study are descriptive analysis and Pearson correlation analysis.

Table 2 shows the positive and negative interpretation of correlation coefficients [12]:

2.2. Data analysis

Data gathered from the e-questionnaire survey were analyzed by descriptive analysis. The descriptive analysis includes the use of means, standard deviations (SD) and percentages. To determine correlation among the variables (dependent and independent variables), Pearson's *r* data analysis was utilized.

3. Results and discussion

After calculating the mean and SD for each question, the method of Hinkle et al. [12] was used to interpret the data gathered from each question in each section of the e-questionnaire.

3.1. How do people in developing countries perceive environmental problems?

For the item, “Interest in environmental issues is to own benefit”, data from participants was calculated to have a

mean value of 4.09. This value falls in the positive range of interpretation of correlation coefficients, which signifies that the majority of the participants agree with the notion of this item. The mean value for the item “I use media frequently to get environmental-related information” was 3.42, which also falls in the positive range, signifying the agreement of a majority of the participants with the notion of the item. The majority of the participants were neutral regarding the items “I’m only interested in environmental issues when I am free” and “Environmental programs are my favorite TV, radio, and newspapers” with mean values of 2.98 and 2.82, respectively. Moreover, the participants agreed with the notions of the items “There are few journalists interested in Environmental newsgathering” and “I listen to environmental related issues on air by media frequently” with mean values of 3.50 and 3.84, respectively. Although this result signifies that the majority of the participants have considerable knowledge and perception of environmental issues, more education is needed.

Table 3 shows a summary of the results regarding the participants’ perceptions of environmental problems.

3.2. Is mass-media helpful in the dissemination of environmental-related issues?

The result regarding the role of mass media in spreading environmental problems is presented next. The first item “Media in my country has helped spread environmental information” had a mean value of 2.23, signifying that the majority of the participants disagreed with the notion. The item “Media in my country needs improvement for environmental awareness” was strongly agreed by a majority of the participants (mean value = 4.66). Data gathered from participants for the item “The TV, radio, and newspapers keep me updated on environmental related issues” with a mean value of 3.37 and the item “Environmental programs are my favorite TV, radio,

and newspapers program” with a mean value of 2.56 show that participants were neutral towards the notion of both items. Lastly, the items “Media is my main source of the environmental information” and “Media have a great role in creating awareness on environmental matter” with SD values of 3.63 and 3.74 signify that the majority of respondents are in agreement with the notion. Table 4 provides a summary of the results.

3.3. Is there any relationship between educational level and environmental sustainability awareness?

The means calculated from participants’ indication of their level of education are 6.39, 7.64, 9.07, 10.12 for high school, bachelor, master, and doctorate, respectively. To determine the relationship between education level and environmental sustainability awareness, the Pearson correlation analysis was used. Table 5 shows students’ educational level and environmental sustainability awareness level.

Pearson’s *r* data analysis revealed a significant perfect positive correlation, $r(550) = 0.801, p = 0.000$ (Table 6). There was a strong positive significant correlation between education level and environmental sustainability awareness. This means that increases in education level were correlated

Table 5
Educational level and environmental sustainability awareness level

Educational level	N	Mean	SD
High school	53	6.39	1.78
Bachelor	310	7.64	2.08
Master	140	9.07	1.59
Doctorate	47	10.12	1.96

Table 3
Participants’ perceptions of environmental problems

Items	Mean	SD	Evaluation
Interest in environmental issues is to my benefit	4.09	1.10	Agree
I use media frequently to get environmental-related information	3.42	0.83	Agree
I’m only interested in environmental issues when I am free	2.98	1.07	Neutral
Environmental programs are my favorite TV and radio programs	2.82	1.14	Neutral
There are few journalists interested in gathering environmental news	3.50	0.92	Agree
I listen to environmental-related issue on air by media frequently	3.84	0.83	Agree

Table 4
Role of mass media in spreading environmental awareness

Items	Mean	SD	Evaluation
Media in my country has helped spread environmental information	2.23	1.04	Disagree
Media in my country needs improvement for environmental awareness	4.66	0.56	Strongly agree
The TV, radio, and newspapers keep me updated on environmental related issues	3.37	1.09	Neutral
Media is my main source of environmental information	3.63	1.15	Agree
Media have a great role in creating awareness of environmental matter	3.74	1.45	Agree
Media has a great role in making people taking actions to protect the environment	2.56	0.92	Neutral

Table 6
Correlations between education level and environmental sustainability awareness

	Education level	Environmental sustainability awareness
Education level	<i>r</i> 1	0.801*
	<i>p</i>	0.00
	<i>n</i>	550

with increases in environmental sustainability awareness among respondents.

4. Conclusion

The study has descriptively analyzed the role of mass media and the level of education of participants in spreading environmental awareness in developing countries. The study took into consideration several independent variables (knowledge and educational level of environmental issues, the role of mass media tools in spreading environmental issues, and perception and behavior towards environmental awareness) that were correlated to a dependent variable (Environmental Sustainability Awareness). The findings from the analysis in this study have shown that participants from developing countries have considerable knowledge of environmental issues, as seen from the results of their perceptions. This is particularly important because, with sufficient knowledge of environmental issues, people can identify and comprehend how their individual and collective actions affect the environment. Hence, they will incorporate this knowledge at home, in the workplace, and all other situations so that the environment can be saved and protected for this generation and future generations.

Furthermore, the study has also correlated the role of mass media in spreading awareness in developing countries and found that mass media tools have helped disseminate environmental awareness; however, the participants strongly agreed that there needs to be a significant improvement in the role of mass media. Educational level was also correlated with the level of environmental awareness using Pearson correlation. The study found that the participants' level of education had a direct relationship with the level of environmental awareness: the higher the level of education, the higher the level of environmental awareness and vice versa.

Although the study has successfully identified the correlation between mass media and the level of education in spreading awareness, there are some limitations to the study. The findings of the study are drawn from analysis derived from participants' responses; therefore, the conclusion may not completely reflect the knowledge and perception of the entire population of developing countries.

However, the study utilized the rich and diverse population of international students enrolled at NEU (especially from developing countries) to achieve a competent result. This study is a contribution to previous studies [13–17] in regard to the level of education, perception and the role of mass media in spreading environmental sustainability awareness in developing countries.

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