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# Use of Social Media by the Secondary Students in Relation with Engagement of Students in Environmental Activities and Sustainability Awareness

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## ABSTRACT

Global warming poses a major threat to life and in recent years, there has been a growing focus on environmental Sustainability. Today, social media has a persuasive role in shaping the individuals' knowledge, attitude and behavior. Hence, institutions are increasingly using social media for communicating purposes related to environmental issues.

This study aims to evaluate examine the relationship between usage of social media in relation with engagement of environmental activities and sustainability awareness and also to see the effects of social media on them. In order to achieve the stated objective, data were collected through a self-administered questionnaire and they were analyzed.

The results showed that all of the sampled students used social media and were engaged in it. There was a 0.522 Pearson correlation between the use of social media and student engagement of environmental activities and there was a 0.208 Pearson correlation between the of social media and environmental sustainability awareness. The Pearson correlation between the student engagement and environmental sustainability is 0.136. The main conclusion of this study is an important contribution to the academic literature and is also helpful for institutions, NGOs and policy makers to promote actions and information regarding environmental sustainability through social media. There are many articles dealing with environmental sustainability and education for sustainable development. However, no articles were found with correlation in the context of the Maldives. The literature identifies as research gaps the effect of social media that foster awareness of environmental sustainability and student engagement. This paper is therefore necessary to fill these gaps in perceptions of environmental sustainability awareness.

**KEYWORDS:** social media, environmental sustainability, secondary Students, engagement of students.

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## 1. Introduction

The negative effects of climate change are among the top concerns for all the people around the globe. In recent years, as excessive CO<sub>2</sub> emissions and the weakening of the natural environment have become problems, many countries are focusing on reducing CO<sub>2</sub> emissions and promoting research with plans to achieve carbon neutrality (Sun, et al., 2022). As various activities such as Burning fossil fuels and cutting down forests contribute to global warming (Santos, et al., 2022), there is evidence that humans are responsible for the negative effects of global warming (Abbass, et al., 2022). To solve the issue, people must be educated about the need for an eco-friendly lifestyle (Panula, et al., 2022).

Environmental education is a learning process that intends to increase people's knowledge and awareness of the environment and the challenges associated with it (Gobel, 2022). The need for environmental education is obvious as the environmental risks created by the globe is at an alarming level, making it difficult for the authorities to manage the environmental issues. To deal with such situations, it is important that awareness is created at all levels of the community. It is believed that environmental education is especially important for school children as they could be the change agents in the future. Hence, it is important that every child has the opportunity to learn and be exposed to their environment as it would enhance their sense of wonder, imagination and creativity providing them with a sense of beauty, peace and serenity.

The considerable COVID-19 pandemic has disordered people's daily lives, the number of users of social media are increasing day by day. It serves as a new source of uncontrolled information that influence people's attitudes (Wang, et al., 2021). Now-a-days, many people use social media as a tool to promote sustainability. The concept of sustainability has evolved over the last decades and it is now a common term used by many people. The concept of green and eco-friendly consumption is gradually being appreciated by people (Yang, et al., 2022).

Social media has many different types of applications that support learning. Many of these applications are free and they encourage collaboration, foster informal or formal learning, and provide a way to share ideas (Kumar & Nanda, 2022). On social media, students can meet students from other colleges, professionals, educators. This helps them to develop connections and communications with new universities that would never be possible without social media. Particularly, Facebook is used in every part of the Maldives, environmental problems can be solved by using these pages sensibly. Facebook is the most liked and famous among students, teachers and people in general.

This area of research stems is very important from the fact that social interaction underlies the use of social media. It's critical to comprehend the impacts social media has on interpersonal communication because this phenomenon is spreading so quickly. Social media platforms provide an easy way to communicate with family, friends and teachers which may affect the student's knowledge, attitude and behavior including self-esteem (Umar and Idris 2018). For instance, Facebook is mainly used by students to keep networks with other people. Facebook users find it easy to connect with several people at once and also to learn new knowledge from others.

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## 2. Literature Review

Our societies have an obligation through governance to identify, develop and implement policies for environmental sustainability. The current environmental sustainability policies need to be reviewed to see how the natural resources can be protected. If effective measures are not taken today, the quality of life will be reduced and the livelihoods of future generations will be in danger (United Nations, 2022). For an instance, plants will have less pollinators, soils will be washed-out, air and water quality will be poor and the beaches will be defenseless from the storms. When climate change gets worsen, adaptations could be done by taking few measures like breeding crops, establishing water-saving systems, and modifying production systems (Abbass et al., 2022).

Today's models of decision-making are unlikely to yield the best natural resources management solutions, even if supported by the government. This is a key issue that begins with the need to aware the students on environmental sustainability and formulate policy and operational choices to achieve them. Decisions to meet the requirements need to be made without direct control, without externalities that interact with the natural resources. To avoid certain consequences, natural ecosystems must be protected from the conversions to agriculture. Improving agricultural productivity and better managing the natural resources can save forests and grasslands around the world (Fernández-Habas, 2022). Achieving more awareness on sustainability requires innovative investments in technology in campus setting. Governments and bank can create lenient loans depending on the environmental sustainability efforts put by the institutions.

The United Nations conference in Stockholm in 1972 emphasized the significance of conserving and enhancing the environment and its biodiversity to ensure human rights and a healthy and productive world. The world has taken consideration in accomplishing environmental sustainability goals in the 21st century as a necessity, not an option (United Nations, 2019). It is important that everyone takes the lessening of natural resources seriously and does everything that they could do to protect the environment. The time has come for everyone to learn, invent and implement environmental sustainability practices. Environmental practices such as reducing power consumption, carpooling with colleagues, and recycling (Aguilera & Pigalle, 2021). Businesses are controlled to keep their carbon emissions low, and governments are now trying to get people to fix renewable energy sources in their surroundings. This should also be related to issues such as good commercial ethics, anti-corruption, corporate social responsibility. The amplified use of digital technology can be contributed to a more environmentally sustainable future in terms of its impact on the environment and human health (Dwivedi et al., 2022). It is doubtful that most of these goals will be achieved by global goals without the reliable data to track progress. In this case, environmental sustainability education is important. Facts and numbers can be used to educate public about the significance of goals while focusing on promoting one or two specific goals. Education or awareness is essential, but everyone should launch their own educational social media campaigns to aware people about the environmental sustainability goals.

### *Social media*

Social media tools are commonly used by all over the world. These social media networks offer societies with an efficient way to spread their message and build community. For example, social networks like Facebook can influence and facilitate cooperative decision-making (Gharrah & Aljaafreh, 2021). Some people believe that the internet enables organizations to circulate information quickly to large audiences, overcome geographic barriers, and reduce costs. Some NGOs related to environment use online and social media platforms as a new source to spread information. A social media channel is "a communication system that enables an advocate to communicate along two ways (He, 2022). Social media allows the less active environmental groups to spread their knowledge, without the involvement of journalists. Previously, blogging platforms were one of the earliest media for information spreading, and environmental discussions (Dwivedi, 2021). Today, social media networks are expanding the range of communication channels and increasing opportunities for interaction with audiences in these groups (Appel et al., 2020). Research on social media usage showed, that most of the people used their social media platforms for environmental activism (UNDP 2017) to minimize the negative impacts of human behavior on the natural resources. Few studies have investigated the use of social media in environmental sustainability in higher education and showed a similar result.

### *Student Engagement*

Student engagement can be characterized as "students' readiness, necessity, want, and obligation to take part in, and be effective within, the educational procedures (Martin & Bolliger, 2018). One of the fundamental necessities of environmental sustainability instruction is that the nature and the environment are involved and students are engaged in it. Formal teaching and learning has no impact on attitude and behavior. Online lessons require educational methodologies that engage the students actively. Though cognitive skills are learnt or mastered in the classroom, engagement of activities must focus on

students' attitudes, behaviors and life-long learning (ILO, 2021). Student engagement has also been depicted as the level of interest shown by the students and how the students cooperate with each other during the lessons and outside the school (Delfino, 2019). By assessing the level of student engagement and observing their behavior, teachers can more successfully plan out lessons that will empower students to be more dynamic in their learning (Kelly et al., 2022). When pupils are convinced to do their best academically as well as in co-curricular activities, they are involved and empowered, then they will put effort to be engaged in their learning.

According to many researchers, there are four different types of engagement mentioned in research articles. They are students' abilities, their enthusiasm, their cooperation or interaction towards the meaningful execution. Engagement survey incorporates elements for each of the above mentioned four types of student engagement. It gives self-reported outcomes about what can be scrutinized in their classroom engagement. Letting the students investigate both casually and formally their engagement, then it is likely to be able to assess their views on engagement and the course viability.

### 3. Methodology

#### 3.1. Data Collection and Sampling

This study involved the secondary students of the four cities in the Maldives. Students from various cities participated in this study. It is therefore assumed that this target group meets the requirements of the research conducted for this study. For this study, 451 students were selected. These students were contacted through a focal point and forwarded an online questionnaire designed for this study. The survey form comprised a note enlightening the aim of the study with the guarantee that the confidentiality would be upheld. Data was collected within 3 months. Several phone calls were made to increase the response rate and received 466 forms. After cleaning the data, 451 questionnaires were usable. This is considered adequate to perform this analysis.

#### 3.2 Measure

Primarily, the variables used in this study were signified by 13 items adapted from previous researches. The survey items were intended so that the students could respond using a 5-point Likert scale ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'. An exploratory factor analysis (EFA) was performed on each variable to confirm the validity of the questionnaire. The results of the Bartlett test showed a significance level of 0.000. This means that the constituents were well correlated. The Kaiser-Meyer-Olkin score was above 0.7 indicating that the dataset was appropriate for investigation (Pallant, 2013 as cited in Sentosa et al., 2016). However, the total amount of variance by the items proved sufficient, as it surpassed the lowest requisite of 60% (Heir, et al, 2010). Reliability was verified using the Cronbach alpha coefficient. All the three constructs were above the 0.7 threshold and thus had acceptable confidence (Heir, et al, 2010). Additionally, EFA was performed to determine if there were any items with poor factor loadings less than 0.6. After EFA, those items were removed from the model (Awang, 2017).

### Results

According to the findings, 451 students in total answered the survey. The sample had 282 (62.5%) boys and 169 (37.5%) females. 46.1% of the students were from grade 9 and 53.9% were from grade 10. Among these students, 18% were from Addu city, 68.5% were from Male' City, 6% from Kulhudhuffushi and 7.5% from Fuvahmulah City.

The analysis was done using frequencies and descriptive statistics. Three questions were used to measure the extent of social media usage. According to the frequency of use data, 85% of the students use social media frequently. Students use social media for various reasons.

Items	Mean	Std. Deviation
RSM1	2.46	1.211
RSM2	3.2	1.066
RSM3	2.24	1.151
RSM4	3.32	1.17
EA1	2.43	1.168
EA2	2.05	1.058
EA3	2.59	1.084
EA4	2	1.007
EA5	3.21	1.24
ESA1	4.62	0.687
ESA2	4.51	0.731
ESA3	4.67	0.617
ESA4	4.59	0.652
ESA5	4.58	0.506

		Social media	Student Engagement	Environmental Sustainability
Social media	Pearson Correlation	1	.522**	.208**
	N	451	451	451
Student Engagement	Pearson Correlation	.522**	1	.136**
	N	451	451	451
Environment Sustainability	Pearson Correlation	.208**	.136**	1
	N	451	451	451

Pearson correlation was conducted to see if there is a relationship between social media, student engagement and environmental sustainability awareness. It was found that the relationship between social media and environmental sustainability awareness is significant as the Pearson correlation coefficient is 0.208 with a p value less than 0.05. The relationship between Social media and student engagement of environmental activities is also significant as the Pearson correlation coefficient is 0.522 and the p value is less than 0.05. The relationship between student engagement in environmental activities and environmental sustainability awareness is significant too as the Pearson correlation coefficient is 0.136 and the p value is less than 0.05

### Results of Regression Path Analysis and Hypothesis Testing

Hypothesis	Estimate	S.E	C.R	p-value	Result
Student Engagement <... Social media	0.72	0.109	6.597	***	Significant
Environmental sustainability awareness <... Social media	0.347	0.071	4.913	***	Significant
Environmental sustainability <... Student Engagement	-0.42	0.043	-0.975	0.330	Not significant

Note: \*\*\* =  $p < 0.001$

According to the statistical results hypothesis 1 and 2 are significant. The  $\beta$  value for the first hypothesis, relationship between social media and student engagement is 0.109 and for the second hypothesis, relationship between social media and environmental sustainability awareness is 0.071. The p value for both the hypotheses are less than 0.001. The third hypothesis is not significant as the  $\beta$  value for the relationship between student engagement and environmental sustainability awareness is -0.42 and the p value is 0.330 which is higher than 0.001

### Hypotheses

Hypothesis 1	There is a relationship between social media and student engagement	Significant
Hypothesis 2	There is a relationship between social media and Environmental Sustainability Awareness	Significant
Hypothesis 3	There is a relationship between student engagement and Environmental Sustainability Awareness	Not Significant

### Discussion

The findings of this study showed that social media does directly affect student engagement and environmental sustainability awareness is consistent with the results of several previous studies. Several studies have found a direct relationship between social media and environmental sustainability awareness. The agreement between current and previous results may be primarily due to the nature of social media itself. This could be because social media is common for all the people round the world. Some studies have measured the extent to which students communicate via social media and explicitly profit from those communications while other studies explored the impacts more generally and directly observed social media usage.

Moreover, in previous studies, the items used for environmental sustainability awareness signified sustainability in general. Consequently, variances in research intent and differences in the items used may have influenced responses and consequent research findings. Nevertheless, the results show that the student engagement does not have any role in connecting the bridge between the relationship between the social media and environmental sustainability awareness. This result highlights the significance of engaging students in activities related to environmental sustainability awareness. In addition, educational institutes implementing vigorous environmental sustainability activities should keep updated via social media and share this knowledge with others to bring a positive change by responding better.

Conversely, to ensure that the shared information is truly suitable for sharing, the information should first be assessed and conferred with the senior students and teachers before it can be shared with others in social media. In this way students can be engaged in a more productive manner. As reported by Hamid et al., (2017) the use of social media could be improved by engaging the students in appropriate environmental sustainability related activities or projects. In the context of an increasingly demanding world, it is important for educational institutes to network their students and develop skills to promote sustainability. In this regard, social media enables students to collaboratively generate green knowledge and, most prominently, to attach with green technology. Therefore, by engaging in the social media activities, students will be able to develop new eco-friendly materials and new designs. Overall, the results of this study indicate that social media alone can aware students on environmental sustainability. Relatively, it is important to integrate activities that can engage the students in the environmental sustainability. Recent studies have shown that the student engagement plays a huge role in connecting the social media and environmental sustainability awareness (Appel et al., 2020).

Social media platforms appeared to be used by students to interact with others. In the current study, secondary students frequently used social media to communicate with friends and family. On these social media platforms, just a small percentage of secondary students speak with others and majority of them share environmental related posts. Additionally, the findings indicated that social media had aided in improving the interaction with others in person. The majority of students gave the engagement of activities a good, but not exceptional, fair, or poor rating. This was a very intriguing conclusion. This shows that, despite its shortcomings, this type of engagement has some advantages. Participants of this study used status updates to interact with others regularly. A more intriguing discovery from the present.

According to a recent study, students share images and updates about their lives, but it's possible that they weren't aiming to make a good impression but to learn from others. It seems that a more significant outcome of social media was engaging students in environmental activities. The practice of posting and sharing on social media was a significant. The quantity of friends they had on social media could have an impact on how much they are engaged and how aware they are on environmental sustainability. According to the recent report, most secondary students have between 600 and 900 friends. These results were in line with those of karam et al. (2019), who discovered a comparable number of online buddies. Nevertheless, the recent survey discovered that people are making more acquaintances on social media.

### **Limitations**

During sampling, the gender distribution could have been more evenly distributed. Only 7.5% of the sample consisted of boys, and 62.5% of them were girls. Additionally, including the higher secondary students in the sample would have expanded the scope of the study. According to the researchers, using a qualitative research strategy could make the research method more effective. Data was collected only from four cities of the Maldives leaving behind the disadvantaged students in the Maldives.

### **Implications for Future Study**

Future research could concentrate on the reasons why Twitter and Facebook have become so well-known compared to other social media platforms. It would be intriguing to learn why people use these social networking sites so commonly and what they learn from them. It would also be an interesting study to examine the factors that affect student engagement and environmental sustainability awareness. Finally, additional research on gender and social media site usage is needed to better understand how these sites affect both men and women.

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## **Conclusion**

According to this research, social media have generated marvels during the last ten years. All the secondary students are engaged in the environmental activities while using social media. It has also shown a significant impact on the environmental sustainability awareness. The social media platforms that the students used provided new channels of communication with friends and family to learn different environmental sustainability facts. related to. Additionally, social media provided resourceful ways to quickly connect with others and be more engaged in community tasks related to environmental sustainability. Students can communicate more quickly and openly regardless of their location. Additionally, students are exposed to different events that are being carried out globally related to environmental sustainability. This study contributes significantly to the understanding of how social media usage affects student engagement in the environmental activities and environmental sustainability awareness among secondary students.

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