

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

8-16-2019

Climate Changes Awareness among Young Social Media Users

Muhammad Ramzan Dr

Information Technology University, mramzaninfo@gmail.com

Roma Shehzadi, Principal Author

University of Sialkot, Pakistan, rooma.shahzadi1@gmail.com

Noma Khawaja

University of Sialkot, Pakistan, noma.khawaja@uogsialkot.edu.pk

Hina Adeeb

University of Central England in Birmingham, hina.adeeb@ucp.edu.pk

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Information Literacy Commons](#), [Mass Communication Commons](#), and the [Social Media Commons](#)

Ramzan, Muhammad Dr; Shehzadi, Principal Author, Roma; Khawaja, Noma; and Adeeb, Hina, "Climate Changes Awareness among Young Social Media Users" (2019). *Library Philosophy and Practice (e-journal)*. 3796.

<https://digitalcommons.unl.edu/libphilprac/3796>

Climate Changes Awareness among Young Social Media Users

Rooma Shahzadi, Assistant Prof
University of Sialkot, Sialkot, Pakistan
rooma.shahzadi@uogsialkot.edu.pk

Prof Dr. Muhammad Ramzan,
[CEO FAIR Information](mailto:mramzaninfo@gmail.com)
mramzaninfo@gmail.com

Nomah Khawja, Lecturer,
University of Sialkot, Sialkot, Pakistan
noma.khawaja@uogsialkot.edu.pk

Abstract

Our climate is changing so fast and influencing all aspects of our life. Serious efforts are needed to make our youth aware of environmental changes happening in our localities and globally. Youth is heavily using social media these days. Therefore, it is imperative to understand how informed are our young boys and girls of changings occurring in our climates and then educate them to cope with these changes. This study investigated levels of awareness about climate changes amid social media users and non-users amongst youth in Pakistan. Primary data was collected through 187 randomly sampled young college and university students on a Social Media Usage Scale and Climate Change Awareness Scale. Findings revealed significant difference among social media users and non-users concerning awareness about climate changes. Respondents also have different levels of interest in climate changes based on their age, gender, level of education and other factors. Effectiveness of social media in creating awareness amongst youth has been determined a significant factor in protection of our climate and ultimately living conditions. Empirical data generated through this empirical research will go a long way for policy-makers, teachers, parents and other stakeholders to plan for climate protection of our regions and the planet earth.

Keywords: Social Media, Climate Change, Awareness about Climate Change, Youth and Climate Changes, Climate Changes Concerns, Climate Changes in Pakistan

Introduction

Climate is typically explained in terms of the changeability of temperature, rainfall, storm and wind over a period, from months to millions of years. The climate procedure develops in time below the effect of its own inner reasons and due to alteration in the outer causes that changes the climate, Outer causes consist of natural occurrences *e.g.* volcanic explosions and solar imbalance, additionally human persuades changes in the atmosphere (IPCC, Climate change the physical Science Basis, 2017). Climate change is the extremist problem in the current century, Climate change has affected on the lives of the people all over the planet particularly among the developing countries (Iqbal & Ghauri, 2012). However, with the allusion of (CCVI, 2011), Pakistan is amongst in these countries that faced many threats by climate change, its susceptibility is owing to its demographic, geographic, and Climate conditions, therefore, Pakistan will face the great costs in tenure of water, meal and energy safety as consequences of climate change. In addition, due to a potential change in climate condition intense consequences such as, storms, droughts, and warmth waves, and reduces the farming production (Ali, Liu, Ishaq, Shah, Abdullah, Ilyas & Din, 2017).

Social media brings the swift change in this during age; it is the obvious that the outlets amenities of social media develop the ideas about the global issues. However, there are indefinite posts and tweets about global warming on social media, with the aim to transfer the information, to educate social media users about climate change (Ivan, 2017). Social media impressively affect the user's knowledge and attitude regarding climate change, as consequence, social media debates on climate change show that users mostly have persuasive opinions about climate change than others, in addition, perspective of the

debates and quality discussions about climate change makes difference among social media user's behalf of on user's awareness about climate change (Tandoc & Eng 2017).

According to the Link Human (2017), Social media has sufficient approaching to make awareness about the climate change, as well; social media arranges a situation to observe the views and reactions of social media users concerning climate change. Besides that, Cody, Reagan et al., (2015) observed the responses of users on social media posts, which demonstrate that users depressingly discuss the climate change and fairly discuss about the march against the climate change. With the indication, Pakistani people assume climate change depend on information regarding climate change, those who contain information regarding climate change are more keenly to modify their living manners, Pakistani people supposed that climate change will harmfully impact their fitness, farming, water and food safety (Ashraf, Wahab & Adeel, 2016).

Objectives

There are following objectives for this research article:

- I) To measure the levels of awareness among social media users and non-users about climate change.
- II) To examine if there are gender difference regarding levels of awareness of climate changes in social media users.
- III) To investigate if there are differences in social media users and non-social media users levels of knowledge about climate change.
- IV) To analyze how social media fulfill the knowledge gap about climate change.

Hypothesis

There are following hypothesis for this research study:

- I) Social media users have greater interest to know about climate change.
- II) Male have more knowledge about climate change as compared to female.
- III) Social media users have more knowledge about climate change than non-users.
- IV) Social Media fulfills the knowledge gap about climate change.

Review of Relevant Literature

A number of studies associated to this research have focused mainly on; environmental groups and association rely on the grass root level or local media movements and conventional media to televise the environmental related content. Whereas, social media is also most important tool for the circulation of the environmental related content, social media remains in the emergent stages of appropriate favored communication vehicles for environmental organizations (Hartman, Bienkowski, Myers & Kanthawala, 2013). To illustrate, YouTube video associated to threats of coal which is harming our atmosphere; Hartman and et al, originated an important relationship between fear, seeming efficiency and a participant's behavioral aim to be active and engaged in ecological issues, as a result, fear implore using high apparent threat have huge prospective for motivating behavioral change.

In essence, social networking *e.g.* microblogging platform important for the climate change discussions, enhancement of the social media usage also show that social media user' interested in the global issue discussions (Williams, MCMurray, Kurz & Lambert, 2015). Therefore, Children and young people all around the world more connected to the social media and all digital tools for recreation, education and empowerment, with the blast of, inexpensive internet based mobile phone present the millions of new young social

media users to engage them into the international issues *e.g.* climate change, due to, knowledge and information about climate change, users develop their critical thinking, therefore, this digital forum offers the opportunities to youth to exchange their experience about climate change and widen inventive solutions (UNICEF, 2013). Furthermore, social media not only engage the users in a discussions and movements about climate change but also make understandings about the needs and situation of the users (Fernandez, Piccolo, Maynard, Wippoo, Meili, Christoph & Alani, 2016).

On the part of social media' role, Greenberg (2013) evaluated that social media have optimistic impact on the learning of the youngsters, usage of social media to get information about global issue *e.g.* climate change, and makes greater concern about the global climate change, those who did not use social media became more disconnected in their perception about the climate change. According to the findings of Piccolo & Alani (2015) social media platforms, twitter less personal than Facebook, 8% twitter users and 21% Facebook users upload their individual information, but on twitter most of the users upload information about climate change, there were many encouraging moments on to social media to promote the climate change issue, and had also seen the promotion of climate change related movements and campaigns (Piccolo & Alani, 2015). On the other hand, there is a study which demonstrates the weak relation between the social media coverage and climate change information, Mohammed & Kinsiona (2013) revealed that there as a weak relationship between social media coverage and climate change information, while observing the social media role in climate change awareness amongst adolescent (15-19) in Trinidad, Tobago. Other than, those respondents who actively used

social media to gain information related to climate change, there was a weak but positive connection between social media usage and climate change awareness.

Awareness about Climate Changes

The authors report the numerous studies about the awareness about climate change. With the reference of the Awan & Abbasi' study (2013), there was relationship among the demographic features, environmental awareness and attitude among the youngsters, lots of socioeconomic factors affected the students' environmental issues related knowledge, such as income level and gender, Youth who has highest level of income have more knowledge about ecological issues than those who have less income, females demonstrate more information about environmental issue than males, the higher level of attentiveness level about environmental issue in females indicate that in their wrangle they disposed towards famous source of information watching TV and use of social media. In particular, Christensen & Knezek (2015) conducted climate change attitude survey (CCAS) to measure the middle school student's beliefs to enact positive environmental change in case of climate change attitude, respondents were generally positive in their beliefs that the climate is changing and their ability to make an impact, moreover, beliefs and intentions of the respondents might be differ from a group of participants who has different age or orientation toward environment issues. Furthermore, Carr (2015) investigated that students at high school have some knowledge about the climate change, but considerable knowledge gap exist amongst the students about climate change, if when teachers have more knowledge about the climate change they delivered maximum information about climate change. Carr' study showed majority of the students did not have awareness about the causes of the climate change, but in the case of effects of the climate, change students were

more aware about the climate change, Students' knowledge of climate change was widespread with misinterpretation. However, in addition to the literature, study from the Iowa State University, Mello O'Brien (2007) considered that young students have a normal (moderate) level of awareness about climate change, students demographic characteristics, childhood environment happening and environment related activities (Seminar or conference) fairly allied to their environment associated information, thoughts and awareness.

Furthermore, remind of climate change knowledge is superior when using images, video (visual) (van der Linden, Leiserowitz, Feinberg & Maibach, 2014), a famous attributes of social media. Moreover, there is further verification that internet usage is able to relate with inferior levels of information regarding climate change, depending upon other elements. For example, in Germany when public distinguishes media to exaggerate the problem of climate change, internet usage is connected with minor altitude of information in an investigation (Taddicken, 2013). Taddicken's (2013) research study, establishes facts for just this restrained alliance and did not discover a straight connection among internet usage and climate change information. As a result, internet usage is not for all time associated to improved knowledge of climate change, but numerous studies demonstrate that it normally is. Whereas the majority of these research studies talk about internet usage usually slightly than social media usage purposely, Zhao's (2009) study proposes that social information is related with well-informed knowledge. Research demonstrates that social media provides to the particular information of climate change and the growth of knowledge societies about climate change. In the same way, the influence of learning and

gender on searching information about climate change would likely emulate internet use in this purpose.

Apart from that, climate change' attention in the rest of the communication different from the scientific experts and journalist communication because they have highest power of attention, there was peak level of attention in the expert communication, the scientific expert communication about climate change makes the common communication areas of the journalist (Lörcher & Neverla, 2015). There is another aspect of awareness, Pandve, Deshmukh, Pandve & Patil (2009) observed the awareness among youth about the activities of international NGO's and panel working regarding climate change and its impacts, most of the respondents knew about (IPCC) which release international reports on the global climate change and its impacts. Behalf of on this, Pearce, Holmberg, Hellsten & Nerlich (2014) determined that the hash tag was used when the social media users tweeted about the IPCC report, as an illustration, climate change issue treated as a politicized issue in Australia, when the social media users tweet on the IPCC report which makes the greater interest among the social media users to take part in the online conversation about climate change, Social media users make their conversational connection with those users who share the information about climate change in a vast sense.

Theoretical Framework

This study examined the levels of awareness among social media users and non-user on knowledge gap about climate change. Tichenor, Donohue & Olien (1970) initially presented the "knowledge gap hypothesis" to demonstrate how dissimilarities in socioeconomic status between spectator's masses are able to create knowledge gaps between and among sections of community. They clarify: while the invention of mass

media knowledge into a social arrangement enhance, subdivision of the people with superior socioeconomic position be inclined to obtain this knowledge at a sooner rate than the inferior position subdivision, therefore, gap in knowledge among these subdivisions be inclined to enhance rather than reduce. The knowledge gap hypothesis has been experienced in equally short-period and long-period researches. After examining previous works, Tichenor, Donohue & Olien (1970) presented that their hypothesis is able to restate in two different ways. Firstly, over period, the acquirement of information about a deeply exposed issue will progress at a sooner pace between well-educated public than between those with lowest schooling. Secondly, at a specified spot in instance, there should be a superior relationship among acquirements of information about issues extremely exposed in the media than about issues lowest exceedingly exposed. According to Ettema & Kline (1977), the main reasons of knowledge gap emphasis on two groups of fundamental aspects, First listeners-related aspect *e.g.* differentiations in communicating expertness, inspiration, and media activities among those with highest and lowest social and economic positions and second is communication related “ceiling effects,” which are detained to be the reasons of lessening knowledge gaps.

The primary adage of knowledge gap is initially suggested to describe the customary media’s consequences on viewers. With the advent of the social media, it might be concluded that the impact and relevancy of inspirational elements, strength of knowledge inspired, and temperament or structure of societies and their obtainable knowledge sources (i.e., multicultural or otherwise) may have enhanced. While media perspectives persist to transform, particularly in conditions of the strength and accessibility of media channels and theme, researchers have started to re-investigate how knowledge

gaps happen in the new age of technological society. Wei (2012) originated that internet usage diverges by users' social and economic status and demographic contexts. Purposely, he accomplished that women, elders, inferior and lowest educated public demonstrate minor internet interest in ordinary and that a gender gap in internet usage happens on certain topic *e.g.* political or governmental issues. And in the literature on climate change people' insight, in specific, there is proof that internet usage is associated to superior climate change information. For example, Zhao (2009) originated that amongst Americans, internet usage, which comprised societal content such as discussions in converse rooms and on conversation boards, is connected with larger supposed information of climate change. A widespread investigation of Europeans established that internet usage is related with superior levels of information on issues *e.g.*, carbon imprisons storage space (Eurobarometer, 2011). An additional research study of Americans, though, that observed usage of the internet for reports and not essentially social media originates a depressing connection among internet usage and climate change information (Kahlor & Rosenthal, 2009). Therefore, there is some indication that the social prospects of internet based media usage are a key aspect in climate change knowledge. This research is constructed on the knowledge gap hypothesis. This research was planned to analyze that, do knowledge gap exists among the social media user and non-users about climate change. Do knowledge gap exist between male and female about climate change. Knowledge gap hypothesis was supported in those aspects to be discussed.

Methodology

The study is essentially a quantitative analysis of levels of awareness about climate change amongst social media users and non-users. Sampling frame of the study was 15,310

youngsters aging between 15-24 years. Through random sampling technique 187 respondents was selected randomly from different academic institutions of Sialkot, Pakistan. Secondary data was collected through comprehensive review of international and local literature. In order to empirically examine the levels of awareness survey method was used to collect the primary data through a survey questionnaire. The data-measuring tool (CCKQ) Climate Change Knowledge Questionnaire collected study data. Climate Change Knowledge Questionnaire was used to assess the respondents' climate change awareness.

Social media usage scale was generated to analyze the usage of social media among respondents about climate change and climate change awareness scale was produced to investigate the knowledge and awareness of respondents about climate change. The reliability index of .76 captured from the analysis was adequately high to attribute the instrument as being reliable. The CCKQ data was analyzed according to descriptive statistics and independent samples t-test that were evaluated using SPSS 12.0 statistical software. The respondents responses for the items in the CCKQ were scored from one to five (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree).

Result and Findings

Finding in terms of data analysis and their interpretation is presented in the forms of tables and textual description

Table 1: Demographic Factors of Respondents

Demographic Factors		Frequencies	Percentage
Gender	Male	84	44.9%
	Female	103	55.1%
Residence	Rural	81	43.3%

	Urban	106	56.7%
Age	15-18	42	22.4%
	18-21	97	60%
	22-24	48	25.6%
	Qualification	Intermediate	70
	Bachelor	103	55.1%
	Masters	14	7.5%
Educational Institute	College	107	57.2%
	University	80	42.8%
Social Media Users	Yes	111	59.4%
	No	76	40.6%

Male respondents were 44.9% (84 male respondents) and female respondents were 55.1% (103 female respondents), 81 respondents (43.3%) were from rural areas, 106 respondents (56.7%) were from urban areas, Age range of the respondents was (15-24 years), 22.4% respondents were between the age of 15-18, 60% respondents were between the age of 18-21, 25.6% respondents were between the age of (22-24)(Table 1). Qualification range of respondents was (intermediate to Graduation), (37.4%) respondents qualification were intermediate, (55.1%) respondents qualification were Bachelors, (7.5%) respondents qualification were Masters (Table 1), 107 respondents (57.2%) were from colleges and 80 respondents (42.8%) were from universities, Most of the respondents use social media; this can be proofed from the (Table 1), (59.4%) respondents used social media and (40.6%) respondents did not use social media.

Table 2: Frequencies and Percentage of Respondents' Responses on Climate Change Knowledge Questionnaire

Sr.#	Statements	SA	A	N	DA	SDA
1	Does Social Media enhance the knowledge about climate change among users?	35 19.8%	65 34.8%	38 20.3%	32 17.1%	15 8%
2	Does Social Media is the fastest medium of environmental information?	53 28.3%	54 28.9%	39 20.9%	32 17.6%	8 4.3%
3	Does Warmth temperature indicate the climate change?	43 23%	81 43.3%	48 25.7%	12 6.4%	3 1.6%
4	Does Climate change is caused by greenhouse gases emissions and burning of fossil fuel?	72 38.5%	65 34.8%	0 0%	35 18.7%	15 8%
5	Does Climate change is the red alert for wild life and water species?	66 35.3%	66 35.3%	34 18.2%	15 8%	6 3.2%
6	Does Climate change is a severe concern for Pakistani youth?	25 13.4%	58 31%	66 35.3%	29 15.5%	9 4.8%
7	Does education construct interest to know about climate change?	32 17.1%	65 34.8%	61 32.6%	19 10.2%	10 5.3%
8	Does Social media is essential for youth to seek environmental information.	34 18.2%	57 30.5%	49 26.2%	41 21.9%	6 3.2%
9	Do you like to know about climate change?	39 20.9%	83 44.4%	40 21.4%	15 8%	10 5.3%
10	Do you get more information regarding climate change through social media as compare to other source of information?	25 13.4%	54 28.9%	55 29.4%	37 19.8%	16 8.6%
11	Do you like to follow the environmental social media	32	52	63	33	7

	accounts like NASA and UNESCO?	17.1%	27.8%	33.7%	17.6%	3.7%
12	Do you think as an individual, it is our responsibility to contribute significantly to compete climate change issue?	96	61	21	4	5
		51.3%	32.6%	11.2%	2.1%	2.7%

(Table 2) reveals the frequencies and percentage of respondents' responses, wide majority (34.8%) respondents were agreed that social media enhances the knowledge about climate change among users, whereas, (20.3%) respondents were neutral and (19.8%) respondents were strongly agreed with the item 1. For the (item 2), (28.9%) respondents was agreed that social media is the fastest medium of environmental information, (28.3%) respondents were strongly agreed with this statement and (20.9%) respondents were neutral with it (Table 2). However, Extensive majority (43.3%) respondents were agreed with that warmth temperature indicates the climate change, (25.7%) respondents were neutral with this statement and (23%) were strongly agreed with item 3. Wide majority (38.5%) were respondents strongly agreed with that climate change is caused by greenhouse gases emissions and burning of fossil fuel and (34.8%), respondents were agreed with item 4. However, most of the respondents (35.3%) were strongly agreed that climate change is the red alert for wild life and water species, (18.2%) respondents were neutral with it (Table 1). On the other hand (35.3%) respondents were neutral on "Climate change is a severe concern for Pakistani youth", 31% respondents were agree that climate change is severe concern for Pakistani youth. 15.5% respondents were disagreed with item 6. However, (34.8%) respondents were agreed that education construct interest to know about climate change, 32.6% respondents were neutral on education construct interest to know about

climate change with this item 7. However (30.5%) respondents were agreed that social media is essential for youth to seek environmental information, 26.2% respondents were neutral on that social media is essential for youth to seek environmental information, 21.9% respondents were disagreed with this statement (Table 2). Most of the respondents (44.4%) were agreed that they like to know about climate change. Nearly (29.4%) respondents were neutral on that they get more information regarding climate change through social media as compare to other source of information. 28.9% respondents were agreed they get more information regarding climate change through social media, 19.8% respondents were disagreed with this item 10. Almost (33.7%) respondents were neutral on that they like to follow the environmental social media accounts like NASA and UNESCO, 27.8% respondents were agreed that they like to follow the environmental social media accounts like NASA and UNESCO. Over the half of the respondents (51.3%) were strongly agreed that as an individual, it is their responsibility to contribute significantly to compete climate change issue (Table.2).

Table 3: Gender Difference among Respondents

	Gender of Respondent	N	Mean	Std. Deviation	Std. Error Mean
Social Media Usage Scale	Male	84	28	5.6141	0.61255
	Female	103	28.6893	5.31928	0.52412
Climate Change Awareness Scale	Male	84	21.9524	4.22815	0.46133
	Female	103	22.8738	4.09849	0.40384

An independent sample T-Test was applied to compare the mean value of the respondents who participated in this empirical study. According to the independent sample T-Test the mean value of the gender of respondents was same behalf of Social media usage scale, the male mean value was (28) and female mean value was (28.6) (Table 3). The std. Deviation values were also same male have (5.61) and female have (5.31). There is no significant difference between the mean values of the gender of respondents, which indicate that male and female use social media same. The mean value of the gender of respondent's behalf of Climate change awareness scale was also same male mean value (21.9) and female mean value (22.8), and the std. deviation value also same male (4.22) and female (4.09) (Table 3). There is no significant difference between the mean values of the gender of respondents according to the climate change awareness, which shows that the climate change awareness is same on the base of gender difference. Male and female have same awareness about the climate change.

Table 4: Independent Samples t-Test (Gender Difference)

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference
Social Media Usage Scale	Equal variances assumed	0.214	0.644	-0.86	185	0.391	-0.68932
	Equal variances not assumed			-0.86	173.4	0.394	-0.68932
Climate Change Awareness Scale	Equal variances assumed	0.518	0.472	-1.51	185	0.133	-0.92141

Equal variances not assumed	-1.5	175.2	0.135	-0.92141
--------------------------------	------	-------	-------	----------

An independent-samples t Test was intended contrasting the mean value of the gender of respondents regarding the social media usage who participate in this survey. No significant difference was found ($t(-.860) = .391, p > .05$) (Table 4). The mean of the social media usage of male ($m = 28, sd = 5.61$) was not significantly different from the mean of the social media usage of female ($m = 28.68, sd = 5.31$) (Table 3). No significant difference was found of the gender of respondents regarding the climate change awareness ($t(-1.508) = .133, p > .05$) (Table 4). The mean of the climate change awareness of male ($m = 21.95, sd = 4.2$) was not significantly different from the mean of climate change awareness of female ($m = 22.87, sd = 4.09$) (Table 5.3).

Table 5: Social Media Usage Difference among Respondents

	Social Media User	N	Mean	Std. Deviation	Std. Error Mean
Social Media Usage Scale	Yes	111	31.1532	3.93862	.37384
	No	76	24.3289	4.78439	.54881
Climate Change Awareness Scale	Yes	111	24.2613	2.94097	.27914
	No	76	19.8289	4.31861	.49538

According to the independent sample T-Test the mean value of the social media user and non-users were significantly different regarding the Social media usage scale, the social media user mean value was (31.15) and non-social media user mean value was (24.32). The std. Deviation values were also different social media users have (3.93) and non-social media user have (4.78) (Table 5). There is significant difference between the mean values of the social media users and non-users. The mean value of the social media users and non-users regarding Climate change awareness were also different social media users mean value (24.26) and non-users mean value (19.82), and also the std. deviation value different social media users value (2.94) and non-users value (4.31) which shows that the climate change awareness of social media users is different from non-users (Table 5).

Table 6: Independent Samples t-Test (Social Media Usage Difference among Respondents)

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference
Social Media Usage Scale	Equal variances assumed	3.685	0.056	10.655	185	0	6.82421
	Equal variances not assumed			10.277	140.17	0	6.82421
Climate Change Awareness Scale	Equal variances assumed	19.15	0	8.352	185	0	4.43231
	Equal variances not assumed			7.795	121.82	0	4.43231

An independent-samples t Test was measured contrasting the mean value of social media users regarding the social media usage who participated in this survey. Significant difference was found ($t(10.65) = 0p < .05$) (Table 6). The mean of the social media usage of social media users ($m = 31.15, sd = 3.93$) was significantly different from the mean of the social media usage of non-users ($m = 24.32, sd = 4.78$) (Table 5). There were significant difference was found among social media users and non-users regarding the climate change awareness ($t(8.352) = 0p < .05$) (Table 6). The mean of the climate change awareness of social media users ($m=24.26, sd =2.94$) was significantly different from the mean of climate change awareness of non-users ($m=19.82, sd =4.31$) (Table 5).

Discussion

This study primarily investigated the awareness among young social media users about climate change. This study was focused on that youth who are studying in educational institute of Sialkot. Both were required who use social media or not for this study to compared the awareness and knowledge about climate change. This study also differentiated the gender behalf of on awareness about climate change.

For hypothesis 01, the difference between the social media users and non-users was explored to investigate the interest of social media users and non-users. The majority of the respondents agrees and strongly agrees that they want to know about climate change. The statistical findings indicate that social media users more interest to know about the climate change than non-users. Findings support Piccolo & Alani (2015) investigated social media users highly interest to get information about climate change, social media users expressed interest in seeing hints both to guide their behavior towards protecting the

environment. Social media user's has interest in the climate change related topics Weather, Disaster, Agriculture and oceans, United Nations Global Pulse collected social media users data related to these climate change related issues (Pathak, Henry & Volkova, 2017). Thus, statistical findings of existing study and previous studies findings approve the hypothesis, social media users have greater interest to know about the climate change than non-users, and social media users spread this information on social media through posts and tweets.

On behalf of the hypothesis 02, difference between the genders was explored to investigate the awareness about the climate change among male and female. Findings support McKinley, Adaro and et al. (2016) stated that there was no gender difference in climate change perception, awareness and access to climate change information, there was no strong evidence, which highlight the gender gap, exists in any of these areas. Male and female used very similar language in their tweets on social media about climate change, but clear difference was observed in the use of hashtags and usernames, they have equal information about climate change issue but they spread information on twitter in different ways (Holmberg & hellsten, 2014). Hence, Existing findings and previous supported findings highlight that male and female have same knowledge about climate change, there is no gender difference, and male and female equally obtain and perceive information about climate change).

Hypothesis 3, the difference between the social media users and non-users was explored to investigate the awareness about the climate change. The statistically findings reveal that variance in t values and significant value below form 0.05 (Table.6) clearly mentioned that social media users are more aware about climate change than non-users. Social media increase the climate change awareness, participants who use social media or

internet had more information about climate change than non-users, new media such as Facebook used to increase environmental awareness among users (Ali, 2011). Consequently, statistical findings of existing study and previous studies findings evident that social media users have more information about climate change than non-users.

On the fourth hypothesis, social media make awareness about climate change among social media users. The statistical findings indicate that social media plays significant role in the awareness of climate change. Social media user's climate change awareness Mean values significantly different from the non-users' (Table 6), these statistics evidently reveal that social media plays a vital role to make awareness about climate change. Findings supports Jha, Verma & Das (2014) stated that social media plays a role to increase the awareness about climate change, the influence of social media on climate change awareness among the users, The maximum environment conservation groups emphasize on the relationship development potential offered by Facebook and leverage its influence to engage more members. Social media campaigns determine the growth of knowledge related to environmental issues and to get feedback on the campaign benefits and problems (Scholtz, Burger & Zita, 2016). As a result, the statistical findings of the existing study and previous study findings support that social media plays vital role to spread the information about climate change.

Conclusion

The results of this research study designates that social media users more interested to obtain information about climate change than non-users. Social media users are interested in climate change related topics in their online communication. However, the

results point out that the awareness gap exists among the social media users and non-users behalf of on their interest in getting information.

On the other hand, it is fair to state that social media users are more aware about climate change. There are significance differences exist among the social media users and non-users regarding climate change awareness. Consequently, awareness gap exists among the social media users and non-users about climate change behalf of on their social media usage.

Nevertheless, social media plays a vital role to fulfill the information gap about climate change. Social media provides the numerous platforms to users to know about climate change according to their interest. Social media forums provide information about climate change and make the online discussion on environmental related issue *e.g.* climate change. Therefore, according to current research findings, social media users are highly aware of climate change as compared to non-users.

There are numerous ways to apply this research for the superior development, essentially, current study should apply in development communication and through this study, and information exchange is possible in the society to bring the positive social change regarding climate change. Furthermore, this current research should apply in behavioral change communication, climate change alert the health risks for the society, through this study strategic design of communication should change the behavior of the community regarding climate change. Last but not the least; this empirical research should go a long way for policy-makers, teachers, parents and other stakeholders to plan for climate protection of our regions and the planet earth.

References

- Ali, M. (2011). The use of Facebook to increase Climate Change Awareness among Employees. *IACSIT Press, Singapore*, 5(2011), 266-270.
- Ashraf, M. Q., Wahab, P., Adeel, M. (2016). Knowledge, Attitude and Perception about climate change among people of urban area in Attock, Pakistan. *International Journal of Agriculture and Environmental Research*, 2(4), 333-338.
- Awan, U., Abbasi, A. S. (2013). Environmental Sustainability through determinism the level of environmental awareness, knowledge and behavior among Business graduates. *Research Journal of Environmental and Earth Science*, 5(9):505-515.
- Carr, P. (2015). *Climate change awareness amongst secondary level students and teachers in Dar es Salaam University college of Education (DUCE) affiliated school in urban Tanzania*. Retrieved on 16 July, 2017 from: http://ic-sd.org/wp-content/uploads/sites/4/2016/06/ICSD15_T4_-_Carr_Paul_-_Climate_change_awareness_and_education_in_Dar_es_Salaam_Tanzania.pdf
- Christensen, R., Knezek, G. (2015). The Climate Change Attitude Survey: Measuring Middle School Students Beliefs and Intentions to Enact Positive Environmental Change. *International Journal of Environmental & Science Education*, 10(5), 773-788.
- Cody, E. M., Reagan, A. J., Mitchell, L., Dodds, P. S., & Danforth, C. M. (2015). Climate change sentiment on Twitter: An unsolicited public opinion poll. *PLoS ONE*, 10(8), 1–18.
- Ettema, J. S., & Kline, F. G. (1977). Deficits, differences, and ceilings: Contingent conditions for understanding the knowledge gap. *Communication Research*, 4(2), 179-202.
- Eurobarometer. (2011). *Special Eurobarometer 364: Public awareness and acceptance of CO2 capture and storage*. Belgium: TNS Opinion & Social. Retrieved on 5 July,

2017 from:

http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_364_en.pdf

European Climate Adaptation Platform. (2011). *Climate Change Vulnerability Index*.

Retrieved on 19 June, 2017 from: <http://climate-adapt.eea.europa.eu/metadata/tools/climate-change-vulnerability-index-ccvi>

Fernandez, Miriam; Piccolo, Lara S. G.; Maynard, Diana; Wippoo, Meia; Meili, Christoph and Alani, Harith (2016). Talking Climate Change via Social Media: Communication, Engagement and Behaviour. In: *WebSci '16 Proceedings of the 8th ACM Conference on Web Science*, ACM, New York, USA, pp. 85–94.

Greenberg, E. S. (2013). *Impact of Social Media s an instructional component on content knowledge, attitude, and public engagement related to global climate change*. Graduate College of the University of Illinois at Urbana-Champaign, IL, USA.

Hartman, C. T., Bienkowski, B., Myers, M., Kanthawala, S. (2013). Social Media for environmental action: what prompts engagements and intent toward activism? *Technology, Knowledge and Society*, 9(4), 143-161.

Holmberg, K., Hellsten, I. (2014). Gender difference in the climate change communication on Twitter. *Internet Research*, 25(5), 811-828.

Iqbal, A., B., & Ghauri, N., F. (2012). Climate change: the biggest challenge in 21th century. *African Society for Scientific Research (ASSR)*.pp.497-508.

Jha, A., Verma, Y., Dass, R. (2014). Assessment of using social media to raise environmental awareness. *CMS ENVIS Centre on Environment and Media*, Centre on Environment and Media, New Delhi.

Kahlor, L., & Rosenthal, S. (2009). If we seek, do we learn? Predicting knowledge of global warming. *Science Communication*, 30(3), 380–414.

Kahlor, L., & Rosenthal, S. (2009). If we seek, do we learn? Predicting knowledge of global warming. *Science Communication*, 30(3), 380–414.

Link Human. (2017). *How Social media is used globally, #Socialography*. Retrieved on 29 June, 2017 from:

<http://linkhumans.com/blog/social-media-used-globally-socialography>

Lörcher, I., Neverla, I. (18 Sep, 2015). The Dynamics of Issue Attention in Online Communication on Climate Change. *Media and Communication*, 3(1), 17-33.

McKinley J, Adaro C et al., (2016). *Gender Differences in Climate Change Perception and Adaptation Strategies: The Case of Three Provinces in Vietnam's Mekong River Delta, CCAFS Report*.

Mello O'Brien S. R. (2007). *Indications of environmental literacy: using a new survey instrument to measure awareness, knowledge and attitude of University-aged students*. Retrospective Thesis and Dissertations Paper 15055. Iowa State University, USA.

Mohammed, N., Kinsiona, E. (2013). *Social Media and its role in climate change knowledge amongst adolescent 15-19*. Cropper Foundation. Arthur Ashe Institute for Urban Health & University of the West Indies, Trinidad & Tobago.

Pandve HT, Deshmukh PR, Pandve RT, Patil NR. Role of youth in combating climate change. *Indian J Occup Environ Med*, 13(2), 105.

Pathak, N., Henry, M., Volkova, S. (2017). *Understanding Social Media's Take on Climate Change through Large-Scale Analysis of Targeted Opinions and Emotions*. The AAAI 2017 Spring Symposium on Artificial Intelligence for the Social Good Technical Report SS-17-01. pp.45-52

Pearce W, Holmberg K, Hellsten I, Nerlich B. (2014). Climate Change on Twitter: Topics, Communities and Conversations about the 2013 IPCC Working Group I Report. *PLoS ONE* 9(4) 1-11.

Piccolo, L., Alani, H. (2015). *Perceptions and behavior towards climate change and energy savings: the role of social media*. In: EnviroInfo & ICT4S 2015: Building

the Knowledge Base for Environmental Action and Sustainability, 7-9 September 2015, Copenhagen, Denmark, Atlantis Press, pp.108–116..

- Scholtz, B., Burger, C., & Zita, M. (2016). *A Social Media Environmental Awareness Campaign to Promote Sustainable Practices in Educational Environments*. 28th International Conference on Informatics for Environmental Protection (pp. 355-369). Cham: Springer International Publishing. Online ISBN: 978-3-319-23455-7.
- Taddicken, M. (2013). Climate change from the user's perspective. *Journal of Media Psychology: Theories, Methods, and Applications*, 25(1), 39–52.
- Tandoc Jr. E. C., Eng. N. (2017). *Climate Change Communication in Social Media*. Oxford Research Encyclopedia of Climate Science.
- Tichenor, P. J., Donohue, G. A., & Olien, C. N. (1970). Mass media flow and differential growth. *Public Opinion Quarterly*, 34(2), 159-170.
- UNICEF. (2013). *Youth in Action on Climate Change: Inspirations from around the World*. United Nations Joint Framework Initiative on Children, Youth and Climate Change, Bonn, Germany.
- van der Linden, S. L., Leiserowitz, A. A., Feinberg, G. D., & Maibach, E. W. (2014). How to communicate the scientific consensus on climate change: Plain facts, pie charts or metaphors? *Climatic Change Letters*, 126(1), 255–262.
- Wei, L. (2012). Number Matters: The Multimodality of Internet use as an indicator of the Digital Inequalities. *Journal of computer-mediated communication*. 17(3), 303–318.
- Williams, T.P H., McMurray, R. J., Kurz, T., Lambert, H. F. (2015). Network analysis reveals open forums and echo chambers in social media discussions of climate change. *ELESEVIER*. 32(2015), 126-138.
- Zhao, X. (2009). Media use and global warming perceptions: A snapshot of the reinforcing spirals. *Communication Research*, 36(5), 698–723.