Environmental Practices of University Teachers in Pakistan

Qudsia Kalsoom¹,¹

¹Beaconhouse National University

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Abstract

The study is a part of the larger project on environmental practices in Pakistani universities. The current study has investigated the environmental practices (complex of behaviours and attitudes) of the university teachers in Pakistan. To achieve the study purpose, a questionnaire was developed in the light of literature on environmental education, consumption behaviours and attitude towards environment.

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Abstract

The current study has investigated the environmental practices (complex of behaviours and attitudes) of the university teachers in Pakistan. To achieve the study purpose, a questionnaire was developed in the light of literature on environmental education, consumption behaviours and attitude towards environment.

The questionnaire was pilot tested two times to find its reliability. The data came from 78 private sector university teachers and 53 public sector university teachers. The data were analyzed in terms of descriptive as well as inferential statistics. One sample t-test results indicated that the environmental practices of the university teachers in Pakistan are not pro-environmental. ANOVA was run to find if the university teachers’ environmental practices were same or different on the four aspects i.e. teaching-related environmental practices, conservation practices, relationship with the environment, and consumption practices. The results indicated that the teaching-related practices were significantly different from other three respects. Independent sample t-test results indicated that the public sector university teachers have a relatively stronger relationship with the environment as compared to the private sector university teachers. The results further indicated that female university teachers undertake more pro-environmental practices as compared to their male colleagues. In addition, the results indicate that the environmental practices of the university teachers are not influenced by their age or academic disciplines. The findings have implications for further research and policies to promote pro-environmentalism in the universities of Pakistan.

Keywords: Environmental behaviours, environmental attitudes, pro-environmentalism, university teachers

Introduction

The universities are the key spaces to develop students’ pro-environmental behaviours and attitudes. Therefore, it is imperative to study the environmental practices of the university teachers so that universities' success in terms of producing environmentally conscious students or promoting ‘environmentally responsible citizenship’ (Sylvestre, McNeil and Wright, 2013) may be predicted. Moreover, there is a gap in literature in terms of research on environmental practices.

Scholars in the field of environmental education have studied a range of constructs related to environmental behaviours and knowledge. Some of them include: environmental literacy of pre-service teachers (Cheng &
So, 2015; Saribas, Kucuk & Ertepina, 2017); pro-environmental behaviours of teachers (Eze, 2020); environmental awareness of higher education students (Emiru & Waktola, 2018); sustainability and environmental consciousness of pre-service teachers (Kalsoom, Khanam & Qureshi, 2017). There are only a fewer studies on ‘pro-environmental practices’ in the field of education (Kemmis et al., 2014; Krasny et al., 2015; Merritt, Hale & Archambault, 2019). ‘Pro-environmental practices’ have been studied widely in the field of consumer behaviours (e.g. Crissien-Borrero, Cortés-Peña, & Herrera-Mendoza, 2016; Kim & Hall, 2019; Miao & Wei, 2013; Park & Ha, 2012). There are only a fewer studies (Kemmis et al., 2014; Krasny, 2015) that have investigated pro-environmental behaviours in educational or civic contexts.

Addressing the research gap, the current study has investigated the environmental practices of the university teachers in Pakistan.

Study Questions

1. What are the environmental practices of the teachers of public sector universities in Pakistan?
2. What are the environmental practices of the teachers of private sector universities in Pakistan?
3. How do the environmental practices of the university teachers in Pakistan vary in terms of age, gender and fields of study?

Study Hypotheses

H1: Mean score of the university teachers of Pakistan, on the scale measuring environmental practices, is 3.5 or above. H01: Mean score of the university teachers of Pakistan, on the scale measuring environmental practices, is not equal to ‘3.5’. H2: Mean score of the university teachers of the private sector universities of Pakistan differs from the mean score of the public sector universities. H02: There is no difference in the mean scores of the public sector and private sector university teachers in Pakistan. H3: Mean score of the female university teachers is higher than that of male teachers in Pakistan. H03: There is no difference in the mean scores of the female and male university teachers in Pakistan. H4: Mean score of the university teachers belonging to different age groups in Pakistan vary. H04: There is no difference in the mean scores of the university teachers belonging to different age groups in Pakistan. H5: Mean score of the university teachers belonging to different fields of study vary. H05: There is no difference in the mean scores of the university teachers belonging to different fields of study in Pakistan.

The study adds to the literature on environmental practices. The study particularly contributes towards literature on pro-environmental practices, pro-environmental behaviours and pro-environmental attitudes. The study also contributes towards the scales measuring environmental practices.

Study Framework

The study framework consists of on the concept of environmentalism, environmental practices, environmental education, and role of higher education in promoting environmentalism.

Environmentalism

The concept of ‘environmentalism’ has been described differently in literature. Heidmets and Raudsepp (2001) also noticed a large variation regarding description and interpretation of the concept of environmentalism. Milton (1996) described environmentalism as “a concern to protect the environment through human effort and responsibility” (p. 33). Similarly, Haq and Paul (2013) describe environmentalism as a concern for the environment shown at large scale (Haq & Paul, 2013). They believe that as environmentalism involves millions of people it can influence the decisions and policies of the government and corporations (Haq & Paul, 2013). Heidmets and Raudsepp (2001) view environmentalism as a complex social phenomenon that covers thinking about the environment and a way of practically relating to it. They further argue that environmentalism has
three components i.e. cognitive, affective and behavioural. The cognitive component refers to knowledge and awareness about the environmental issues and the harmful consequences of human activities. The affective component is a concern or emotional position taking related to environment. The behavioural component refers to the intentional actions in the favour of environment. These actions include recycling, resource saving, conservation etc. (Heidmets & Raudsepp, 2001).

**Key Concepts related to Environmentalism**

Heidmets and Raudsepp (2001) identified ‘ecological mentality’ and ‘environmental friendliness’ as related concepts of environmentalism. They argue that many scholars have used these concepts interchangeably. ‘Pro-environmentalism’ is another term that has been used interchangeably with ‘environmentalism’ (Bratanova, Loughman, & Gatersleben, 2012).

Heidmets & Raudsepp (2001) explains that pro-environmentalism is a responsible orientation towards environment. In other words, pro-environmentalism is a set of thinking, doing and relating that minimizes harms to the environment. Literature uses some more terms related to ‘environmentalism’. They have been discussed as follows.

‘Pro-environmental’ Behaviour

Steg and Vlek (2009) describe ‘pro-environmental’ behaviour as an act that “harms the environment as little as possible or even benefits the environment”. Kollmus and Agyeman (2002) view pro-environmental behaviour as “the behaviour that consciously seeks to minimize the negative impact of one’s actions on the natural and built world” (p.240). In other words, pro-environmental behaviour is an intentional act/behaviour to achieve an outcome that is beneficial for the environment (Kollmus & Agyeman, 2002). Pro-environmental behaviour is different from ‘acting environmentally’ as people may act environmentally because of some external factors like government laws. For example, people tend to drive significantly less in the countries that charge heavy taxes on gasoline (Von Weizaecker & Jesinghaus, 1992 cited in Kollmus & Agyeman, 2002). This environmental act is not an outcome of one’s intentions; therefore, this behaviour is not ‘pro-environmental’.

Scholars have identified different behaviours as pro-environmental behaviours. For example, recycling (Byrne & O’oRegan, 2014; Zhang, Zhang, Yu & Ren, 2016); responsible energy consumption (Berardi, 2017); transport use (Eriksson et al., 2008); buying green and recycled products (Park & Ha, 2012) and consumption patterns such as purchasing recycled products (Vicente-Molina, Fernández-Sáinz, & Izagirre-Olaizola, 2013).

Researchers have also tried to identify different factors responsible for promoting pro-environmental behaviours. Some scholars argue that knowledge of environmental issues leads to developing pro-environmental behaviours (Burgess, Harrison & Filius, 1998). However, other scholars have found no or negligible correlation between knowledge of environmental issues and pro-environmental behaviour (Bartiaux, 2008; Kollmus & Agyeman, 2002). Chen et al. (2013) found that the people who experienced environmental harm demonstrated more pro-environmental behaviours. This indicates that context plays a role in changing people’s behaviours towards environment. Earlier, Arp and Kenny (1996) found that the people who lived closer to a site of environmental problem e.g. landfill, were more concerned about environment. Cordano et al. (2010) found that pro-environmental behaviour is influenced by environmental beliefs in conjunction with other variables. Ünal, Steg and Gorsira (2018) found that “biospheric values seem to motivate people to consider the consequences of their actions for the environment and possible solutions to reduce their negative impact on the environment, and to do the morally right thing for the environment”.
Environmental/ Pro-environmental Attitude

Attitude is a complex term. It may be defined as a disposition that directs action (Tabachnick & Zeichner, 1984). Eagly and Chaiken (1993) believe that attitude is about favoring or disfavoring something. Petty and Cacioppo (1981) considered an attitude as an enduring feeling (positive or negative) about an issue, object or person. Environmental attitude may be understood as the extent to which an individual is concerned about the environment (Steg, de Groot, Dreigerink, Abrahamse, & Siero, 2011). Kalsoom (2018) has explained the concept of pro-sustainability attitudes. Using that conceptualization, pro-environmental attitude may be described as enduring feelings towards the issues related to environment (earth, biodiversity, ecosystems, natural resources) (Kalsoom, 2019). Dunlap and Van Liere (1978) and Dunlap et al. (2000) conceptualized environmental attitudes in terms of ecological paradigm and developed a scale to measure the attitudes in terms of anti-anthropocentrism; the reality of limits to economic growth; the rejection of the belief that relationship between humans and the natural environment is unimportant (exemptionalism); the possibility of eco-crisis; and the fragility of nature’s balance. Researchers have found that environmental attitudes have an impact on environmental behaviours of the people (Steg et al., 2011).

Environmental Consciousness

Environmental or pro-environmental consciousness is a complex of “environmental knowledge, values, and attitudes, together with emotional involvement” (Kollmuss & Agyeman, 2002). Similarly, Olsson, Gericke and Rundgren (2016) and Kalsoom et al. (2017) also conceptualized environmental consciousness as a set of knowledge, attitudes and behaviours towards environment. Literature shows three dimensions of environmental consciousness i.e. affective dimension; dispositional; and active dimension while cognitive dimension is the underlying dimension for dispositional and affective dimensions.

Affective dimension of environmental consciousness includes beliefs regarding human beings’ relationship with the environment (Dunlap et al., 2000). This view of environmentalism is “eco-centric worldview that emphasizes humanity’s need to establish a balance with nature, the existence of limits to growth for human societies and question humanity’s right to rule over the rest of nature”. O’Sullivan (2002) labels such a consciousness as “planetary consciousness”.

Sánchez & Lafuente (2010) differentiate between affective dimension of EC from dispositional dimensions of EC as: affective dimension is about values and perceptions held by individuals regarding environment and human relationship with it whereas dispositional dimension includes personal attitudes demonstrating internalization of pro-environmental values and beliefs. This might include individual action from the perspective of feelings of self-efficacy and the perception of individual responsibility. This also includes willingness to assume the costs of different environmental policy measures. Sánchez & Lafuente (2010) believe that information about the environmental problems is a prerequisite for pro-environmental beliefs and dispositions. In this way cognitive dimension is part of affective and dispositional dimensions. Sánchez & Lafuente (2010, p) assert that:

“specific information or knowledge is mutually dependent on both personal attitudes and general beliefs about how the world operates, since certain values or attitudes can make one more receptive to environmental information, while the acquisition of new information or knowledge can modify these attitudes and beliefs.

The most visible dimension of environmental consciousness (EC) is active dimension or behaviour dimension. Sánchez & Lafuente (2010, p.737) identify three facets of this dimension. They are: individual behaviours including reusing and recycling; collective behaviours like environmental activism including association with an environmental group; environmental protests; environmental volunteers; and higher cost behaviours like “green” consumerism and reducing car use.
Environmental practices

To understand the concept of environmental practices, it is important to first discuss the notion of ‘practices’.

Practices

A practice may be understood as a set of organized actions. These actions can be bodily doings and sayings or the actions constituted by bodily doings or sayings (Schatzki, Cetina, & Savigny, 2001). These doings and sayings are not random actions. They are guided and organized by understandings and rules. Practices are contextual, social and site-bound (Hards, 2012). Individuals are carriers (Reckwitz, 2002) as well as transformers of societal practices (Hards, 2012). However, transformation in practices is not easy. It requires challenging and breaking the elements and links between elements of the practices before re-making and replacing them with more sustainable elements (Hargreaves, 2011).

Drawing upon the conceptualizations of Schatzki et al. (2001) and Kemmis et al. (2014), current study defines environmental practices as a complex of sayings, doings (mental or physical) and relatings towards the physical and living environment.

Practices are complex of multiple elements and their interactions (Krasny et al., 2015). However, there is no agreement on the elements of practices. Warde (2005) has explained practices in the context of consumer behaviours. He believes that the principal elements of a practice are understandings, procedures, engagement, and items of consumption. Krasny et al. (2015) identify competencies, meanings, and resource as the elements of a practice. They explained these elements in the context of civic ecological practices. The competencies are the skills to act in ecological stewardship activities. The meanings refer to the social and ecological values that people attribute to the natural resource (water, land, plants) that is the focus of the practice or to the practice itself (Krasny et al., 2015).

Environmental practices

Building on Kollmus and Agyeman’s (2002) description of ‘pro-environmental’ behaviour and Kemmis et al. (2014) conceptualization of practices, ‘pro-environmental practices’ may be defined as a set of sayings, doings and relatings that consciously seeks to minimize the negative impact of one’s practices on the natural and built world.

Theories for Pro-environmental Behaviours

Researchers have tried to explain pro-environmental behaviours in the light of different theories or perspectives, e.g., behavioural perspective (Hargreaves, 2011), psychological perspective (Duerden & Witt, 2010; Whitmarsh & O’Neill, 2010), and educational perspective (Rodríguez-Barreiro et al., 2013). Researchers from the field of Psychology have tried to understand the impact of values, beliefs and attitudes on the behaviour (De Groot & Steg, 2009; Nordlund & Garvill, 2002). On the other hand, economists have studied the impact of income or social-economic status of the people on their environmental behaviours (Viscusi, Huber, & Bell, 2011).

Theory of Planned Behaviour (TPB)

Theory of planned behaviour was proposed by Ajzen (1985, 1988 & 1991) and it presents the detailed picture of ‘Theory of Reasoned Action’ that was initially suggested by Fishbein and Ajzen (1975). TBP identifies the factors responsible for leading to specific actions. According to the TPB, attitudes, subjective norm and perceived behaviour control predict “intention” and action of the people (Ajzen, 1991). In other words, according to TPB, people’s actions are not random rather grounded in their attitudes, norms and behavioural control. Researchers from different fields have tried to explain people’s behaviour in the light of TPB. For
example, academic behaviours of students (Heath & Gifford, 2002; White et al., 2008), learners behaviours (Bamber et al., 2003) and environmental behaviours (Nye and Hargreaves, 2010).

According to TPB, behavioural intention refers to the willingness to participate in a specific action or activity (Ajzen, 2002). Subjective norm refers to people’s insights about the people in terms of their importance in a particular performance (Ajzen, 2002). Dulany (1986) explained subjective norms as socio-cultural influences on people’s specific actions or performance. Schwartz and Leonard (1977) described norms as individual expectations about a person’s behaviour in a specific social situation. Norms (at personal level) represent individual’s beliefs regarding how to act. On the other hand, social norms are broader and represent the shared beliefs of the larger group. These beliefs affect the way individuals and the larger group act or behave. Social norms are perceived to be enforced through reward or punishment (Thøgersen, 2002). People usually exhibit those behaviours for which a social norm exist (Liebrand et al., 1986). Social norms are very influential and people might refrain from acting for their own self-interest if the social norms do not allow that (Ajzen, 1991).

Attitude refers to the feeling of an individual related to anything, event, a person etc. The feeling may be pleasant or unpleasant, good or bad (Ajzen, 2002). This feeling is an important predictor of individual actions. Attitude also refers to positive or negative beliefs about the outcomes of specific behaviours (Ajzen, 1991). Fishbein and Ajzen (1975) also believed that individual’s attitude is an important element leading to a behavioural intention. Sparks and Guthrie (1998) argued that attitude is the ultimate cause of individual action.

Perceived behavioural control is another factor in TPB. Perceived behavioural control refers to “perceived ease of performing the behavior based on past experience and anticipated impediments” (Ajzen, 2002, p. 132). Research indicates that a behaviour displayed earlier has a chance to be repeated in future more frequently. In fact it is “the perceived ease or difficulty of performing the behavior” (Ajzen, 1991; p. 188). Repetition can be habitual or intentional (Ajzen, 2002).

Rioux (2011) applied TPB to understand pro-environmental behaviours. He found a correlation between ‘battery collecting behaviour’ and the intention to act (Cordano et al., 2010). Moreover, the researchers explained the use of car (Abrahamse et al., 2009; Wall et al., 2007), recycling behaviour/ practices (Mannetti et al., 2004), the use of public transportation (Heath & Gifford, 2002), and ecological behaviour (Kaiser & Gutscher, 2003) in the light of TPB. Nye and Hargreaves (2010) noticed that TPB can also be applied in workplaces. Klockner and Oppedal (2011) and Mannetti et al. (2004) studied pro-environmental behaviours in household context. They found that the central predictor for the intention to recycle is ‘perceived behavioural control’. Researchers (Fliegenschnee & Schelakovskiy, 1998) have also found that situational factors and leadership support are also important antecedes towards determining the intentions for pro-environmental behaviours.

Derksen and Gartrell (1993) argued that the less people are likely to exhibit pro-environmental behaviours if less possibilities are available. For example if less waste bins are available at public places, people will not exhibit a civic behaviour regarding disposing off the litter.

Higher Education and Environmentalism

Scholars from the field of higher education and sustainable development believe that universities have a central role in promoting pro-environmental and pro-sustainability behaviours (Cortese, 2003; Shephard, 2008; 2015). Traditionally universities have been recognised as sites of creation of scientific knowledge for industrial innovation and preparation of skilled labour force (Castells, 2001; Gunasekara, 2006). States have used institutions of higher education to promote national identity through development of historical and cultural narratives (McCowan, 2012). Scholars, however, (e.g. Brennan, King, & Lebeau, 2004; Harkavy, 2006) view the role of universities beyond producing a labour force and creating knowledge for industry. They argue that universities need to play a role in social transformation and development. Literature indicates that
universities significantly affect people’s capacities and dispositions as citizens (Bynner et al. 2003; McCowan, 2012). Similarly, Sylvestre, McNeil and Wright (2013) insist that universities have a role to promoting ‘environmentally responsible citizenship’.

Realizing the critical role of universities in advancing the agenda of sustainable development and environmentalism, universities have tried to address the issues of sustainability and environment in diverse ways. John Frank, Robinson and Olesen (2011) noted a rise of environmental education in universities globally. They argue that inclusion of environmental education in universities started in the 1970s and later exploded in the 1990s. John Frank et al. (2011) contend that “degree programs in ‘environmental education’ now appear well beyond the original science/policy nexus, in virtually every corner of the curriculum” (p. 547). Universities offer a range of courses related to environment. For example: religion and ecology; green accounting; environmental health risks; religion and ecology; and eco-feminism (John Frank et al., 2011). Wu et al (2010) also noted in their survey of 642 business schools that many universities had included sustainability courses. European business schools mostly offered sustainability courses as elective/optional subjects at graduate level whereas American business schools mostly included sustainability courses at undergraduate level. It is also interesting to note that “environmental course taking rose more rapidly than course-taking in almost any other field between 1982 and 1992” (Adelman 2004 cited in John Frank et al., 2011).

Teachers influence the environmental practices and behaviours of students. Therefore, their own environmental practices are important. Research from the field of teacher education indicates that the teachers who are more concerned for environment and sustainability integrate the concepts of sustainability in their teaching (Evans, 2019). Considering the importance of teachers own environmental practices, researchers have investigated environmental behaviours, knowledge and attitudes of pre-service and in-service teachers (Esa, 2010; Kilinc, 2010; Ozsoy, Ozsoy, & Kuruyer, 2011). Though environmental education has been focused in universities globally, there is lesser literature on university teachers’ environmental behaviours and practices. Jickling (2003) also noted that a lot of emphasis has been placed on ‘teachers as role models’ in school settings. There is much less focus on the university teachers. Instead the role of university teachers has been taken as potential advocates for the environment (Shepherd, 2015). Adams, Martin and Boom (2018) reported a study of the University of Worcester (UW) in terms of its culture to foster environmentally responsible values. They argue that teachers and other people of the university collectively foster a culture that values acting in an environmentally responsible manner. Shephard (2015) refers to environmental tallories signed by universities and highlight the need to build university teachers capacities to teach environmental literacy to all of their students.

Research on Environmental Practices and Behaviours

Scholars in the field of environmental education have studied a range of constructs related to environmental behaviours and knowledge. Some of them include: environmental literacy of pre-service teachers (Cheng & So, 2015; Saribas, Kucuk & Ertepina, 2017); pro-environmental behaviours of teachers (Eze, 2020); environmental awareness of higher education students (Emiru & Waktola, 2018); sustainability and environmental consciousness of pre-service teachers (Kalsoom, Khanam & Qureshi, 2017). There are only a fewer studies on ‘pro-environmental practices’ in the field of education (Kemmis et al., 2014; Krasny, 2015; Merritt, Hale & Archambault, 2019). It is also notable that although the concept of ‘pro-environmental practices’ has been widely researched with respect to consumer behaviours (e.g. Kim & Hall, 2019; Miao & Wei, 2013; Park & Ha, 2012). ‘Pro-environmental practices’ have been studied widely in the field of consumer behaviours (e.g. Crissien-Borrero, Cortés-Peña, & Herrera-Mendoza, 2016; Kim & Hall, 2019; Miao & Wei, 2013; Park & Ha, 2012). There are only a fewer studies (Kemmis et al., 2014; Krasny, 2015) that have investigated pro-environmental behaviours in educational or civic contexts. Moreover, there is no consensus on what constitutes ‘pro-sustainability practices’. In the current study, pro-environmental practices have been conceptualized in the light of literature on ‘pro-environmental behaviours’ and ‘practices’.

The researchers have employed survey methods to measure different aspects of environmentalism i.e.
pro-environmental behaviours, attitudes, knowledge and environmental consciousness (Kaloom, Khanam, Quraishi, 2017; Olsson et al., 2016). The most commonly employed scale to measure environmental attitudes is New Ecological Paradigm (NEP). The scale was developed by Dunlap et al. in 1978 and then revised in 2000 (Dunlap et al., 2000) to measure ecological attitudes in terms of anti-anthropocentrism; the reality of limits to economic growth; the rejection of the belief that relationship between humans and the natural environment is unimportant (exemptionalism); the possibility of eco-crisis; and the fragility of nature’s balance. The scale has been widely used by the researchers in different context and with different populations (farmers, ethnic minorities, students etc.) to measure environmental attitudes and worldviews (e.g., Johnson et al. 2004; Pahl et al. 2005). Hope and Jones (2014) used NEP to measure the “impact of religious faith on attitudes to environmental issues and Carbon Capture and Storage (CCS) technologies”.

Ogunbode (2013) studied used NEP to measure ecological attitudes in African context. He found the Nigerian university students had “lower endorsement of the pro-ecological ideologies... [but] a strong consensus was observed among the sample on the fragility of nature’s balance and possibility of eco-crisis facets of the NEP” (p. 1477).

Though NEP has been widely used, it has some limitations. The most fundamental limitation is that “the origin of the NEP scale and the assumptions that are inherent in its underlying theoretical framework pose a significant limitation to its utility as a universal measure of environmental attitudes” (Ogunbode, 2013, p.1479).

Fleury-Bahi et al. (2015) used 15 item NEP scale in French context. The overall mean score turned 3.85. The mean values on the five items that were similar to the current study were 4.06. also used 15 item NEP scale and found that the mean scores of undergraduate students from New Zealand varied from 3.4 to 4.15. The mean score of the Nigerian students was reported ‘2.5’ by Ogunbode (2013). These findings indicate that ecological orientations of the people vary widely across the world. Ogunbode (2013) and Smith et al. (2017) also noticed that research on environmental issues indicated a difference in environmental worldviews and attitudes of the people on the basis of their countries. Researchers (e.g. Franzen & Vogl 2012; Sandvik, 2008; Tjernstrom & Tietenberg, 2008) found pro-environmental orientations/ worldviews are greater among more developed nations. The major reason for this is that the developed societies are do not face economic problems, therefore, they value environment more as compared to the people living in the developing or poor countries (Smith et al., 2017). Besides the country context, the researchers (Daniels et al. 2012; Franzen & Vogl, 2012; Leiserowitz, 2006) have found that females exhibit more pro-environmental attitudes and behaviours. However, Eze (2020) found that there was no difference on the basis of gender of the teacher regarding the awareness of environmental issues and willingness to engage in pro-environmental behaviours. Researchers like Torgler and García-Valinas (2007) argued that women exhibit more pro-environmental behaviours and attitudes because of their role as caregivers and nurturers.

Research Methodology

Design

The study used a descriptive/survey design of quantitative research methodology.

Population

All university teachers (serving in public and private sector universities) constituted the population of the study.

Sample

Study sample was selected randomly. The researcher searched for the email addresses of the teachers of the four public sector and four private sector universities of Lahore. She sent a participation request to a total
987 teachers. The researcher followed up by sending two more requests. A total of 131 university teachers filled the questionnaire. Response rate was 13.22%.

Table 1: Sample Composition

<table>
<thead>
<tr>
<th>Category</th>
<th>Group</th>
<th>Number of Respondents</th>
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<tbody>
<tr>
<td>Public Sector vs Private Sector</td>
<td>Public Sector University Teachers</td>
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<tr>
<td></td>
<td>Private Sector University Teachers</td>
<td>78</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>59</td>
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<tr>
<td></td>
<td>Female</td>
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<td>25-40 year old</td>
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<tr>
<td></td>
<td>41-55 year old</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>56-70 year old</td>
<td>21</td>
</tr>
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<td>Academic Discipline</td>
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<td>35</td>
</tr>
<tr>
<td></td>
<td>Management Sciences</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Social Sciences</td>
<td>69</td>
</tr>
</tbody>
</table>

Instrumentation

The concept of ‘environmental practices’ has not been investigated quantitatively by earlier researchers. Therefore, there are no instruments available. Building on the conceptualization of Kemmis et al., (2014), the researcher developed a 52- item instrument on Likert scale to measure environmental practices. The instrument had four sections: Section A) Practices related to the Use of Materials; Section B) Conservation Practices; Section C) Consumption Practices; and Section D) Relationship with the Environment. The indicators included in the first three sections were more focused on measuring the behavioral dimension while the items included in the fourth section aimed at measuring the ‘relating’ dimension of the practices. As the potential respondents were university teachers who had a minimum qualification of Masters or MPhil degree, it was assumed that they all were aware of environmental issues. The researcher did not include any items related to the ‘knowing’ dimension of the environmental practices. The instrument was carefully developed in the light of prior research on consumption and conservation practices. Since the potential respondents of the current research were university teachers, therefore, items related to environmental behaviors behaviors in teaching were also included. To enhance the reliability of the instruments, one third of the items were reverse items.

Pilot Testing

The researcher conducted pilot study of the scale with 17 respondents. The Cronbach alpha value with all respondents data turned to be 0.95 which is exceptionally reliable. However, the complete data set had many missing values. The researcher removed the data of three respondents whose responses included missing information. Recalculation resulted in a value of 0.81. However, all individual sections did not have a value of 0.7 or above.

The researcher noticed that after removing item 15, 19, 35 and 40, Cronbach alpha value of all 4 sections turned to be above 0.7 (minimum requirement) and overall value went upto 0.84 which was excellent. The researcher removed those items that were lowering the reliability of the questionnaire.

The revised instrument had 48 items altogether. There were 14 items in the Section A; 15 items in the Section B; 9 items in the Section C; and 10 items in the Section D (Annexure 1). Cronbach alpha value of the final data were 0.876. Sectionwise values of Cronbach alpha have been mentioned in the table 3.1.

Table 2. Cronbach’s Alpha Values for the Questionnaire
The Cronbach alpha values of the individual sections and the overall instrument were above 0.70. The researcher administered the questionnaire after determining the reliability of the overall questionnaire.

### The Procedure of Data Collection

The researcher searched for the email addresses of the teachers of the four public sector and four private sector universities of Pakistan. She sent a participation request to a total 987 teachers. The researcher followed up by sending two more requests. A total of 131 university teachers filled the questionnaire. Response rate was 13.22%.

The researcher collected data during Covid 19 when the universities were using online mode of teaching. The first section of the instrument aimed at measuring university teachers’ classroom based teaching practices. The researcher mentioned in the questionnaire explicitly about the practices they had before Covid 19.

### Data Analysis

The data were initially analyzed through descriptive statistics. For this, mean scores on all 48 items were calculated and compared through bar graphs.

The data were mainly analyzed through t-test and ANOVA. Null hypotheses 1 and 2 were tested through one sample t-test. Null hypothesis 2 was tested through independent sample t-test while hypothesis 4 and 5 were tested through ANOVA. Inferential or parametric tests are done with the data on ratio or continuous scale. Michalos et al. (2015) argues that “strictly speaking the mathematical functions of addition and so on are not applicable on ordinal scale” (p.309). Though inferential statistics are not appropriate for Likert-type scales, they have been used on Likert scales because “Likert scale items are created by calculating a composite score (sum or mean) from four or more type Likert-type items” (Boone & Boone, 2012). Similarly, Norman (2010) reached on a conclusion after reviewing a large amount of data that “parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of coming to the wrong conclusion” (p. 631). Researchers have used parametric tests with the data obtained on the new ecological paradigm (NEP) scale (Hope & Jones, 2014; Johnson et al. 2004; Pahl et al. 2005); attitudes, knowledge and behaviors towards sustainability (Michalos, et al., 2015); and sustainability and environmental consciousness (Kalsoom et al., 2017; Olsson et al. 2016). Following the practice of earlier researchers regarding using parametric tests on Likert scale, the researcher applied parametric test in this study.

The researcher compared the mean scores of the respondents with a hypothetical, expected mean score of ‘3.5’. This value of ‘3.5’ was selected in the light of literature available on environmental behaviors, environmental consciousness, and conservation and consumption practices. Literature suggested that educated people exhibit pro-environmental practices (Smith et al., 2017; Sánchez, López-Mosquera, & Lera-López, 2016). Similarly, Fleury-Bahi et al. (2015) found that the mean score on ecological worldview of the French people was 3.85. Jowett et al. (2014) found that the mean scores of undergraduate students from New Zealand varied from 3.4 to 4.15. Keeping these figures and the educational background of the respondents in view, a
cut of value of ‘3.5’ was decided for the current study. The researcher assumed that a minimum mean score of ‘3.5’ will be required to declare if the practices of the university teachers were pro-environmental.

Results

This section presents analysis of the data to answer the five research questions. First, data analysis has been presented in the form of descriptive statistics including mean scores and bar graphs. Later, analysis through inferential statistics (t-test and ANOVA) has been presented.

Environmental Practices of the University Teachers in Pakistan

The data indicated that the mean score of the respondents was ‘3.29’. A comparison of the mean scores, under four sections of the scale, has been presented below in the Figure 1. The Fig 1 indicates that the mean scores of the university teachers were relatively lower on their teaching-related environmental practices while maximum on the relationship with the environment. Mean score on only two items turned to be ‘4’. Both these items were related to relationship with the environment. Minimum mean score on any item was 2.1 and it was related to teaching-related environmental practices.

[CHART]

<table>
<thead>
<tr>
<th>Teaching Practices</th>
<th>Conservation Practices</th>
<th>Consumption Practices</th>
<th>Relationship with the environment</th>
</tr>
</thead>
</table>

Mean Scores on the individual sections have been presented in the Fig 2, 3, 4 and 5.

Fig 2 indicates that the mean scores of the university teachers’ teaching-related environmental practices are mostly lower than ‘3’ and inclined towards anti-environmental practices. Response to the item 8, shows that the teachers mostly do not give an option to their students to submit their assignments online. This response is contradictory to the response on item 1 i.e. about submitting assignments on paper.

[CHART]

Mean scores on conservation practices have been presented in Figure 3. The Figure 3 indicates that the mean scores in majority of the items were less than ‘3.5’. Response to item 15 in the Fig 3 was exceptionally low indicating that the university teachers’ energy conservation practices at household level were not pro-environmental. Most of the teachers do not keep the temperature of their rooms 26°C or above. However, response on item 19, 20 and 27 look more pro-environmental. These items are about the use public transportation outside the city and within the city and advocacy for the careful use of water. The Figure 3 indicates that conservation practices of the university teachers are close to the expectation (mean score of ‘3.5’).

[CHART]

Mean scores regarding university teachers’ relationship with the environment have been presented in the Fig 4. Figure 4 shows that the means scores of the university teachers regarding consumption practices are around ‘3.5’. However, their score on the item ‘37’ is considerably lower. The item is about the re-use of water bottle.

[CHART]

Fig 5 indicates that the university teachers’ relationship to the environment is more pro-environmental as compare to their teaching-related environmental practices or conservation and consumption practices. Mean scores on two items were ‘4’. However, there are contradictory responses on two related items. Mean score on item ‘43’ i.e. feeling concerned about the waste produced every day’ is lower than ‘3’. On the other hand response, mean score on the item ‘44’ i.e. about considering environment is an important resource, is ‘4’.
University Teachers Environmental Practices: Hypotheses Testing

To test the null hypothesis 1 “Mean score of the university teachers of Pakistan, on the scale measuring environmental practices, is not equal to 3.5”, one sample t-test was employed. The data analysis indicated that the mean scores of the university teachers of Pakistan was ‘3.29’ with a standard deviation of 0.354. The result of the one sample t-test is as follows.

\[ t(130) = 18.33, \ p < .0001 \]

One sample t-test result indicated that this score was significantly lower than the hypothetical mean value of ‘3.5’. As a result, null hypothesis 1 could not be rejected indicating that the environmental practices of the university teachers in Pakistan are not ‘pro-environmental’. The value of standard deviation indicates that the variation in the responses of the university teachers was not very high.

Further ANOVA was run to see if the mean scores on the four sections differed. The results indicated that mean scores of the respondents in the three sections were same while results were different in teaching-related environmental practices.

Details of the mean scores on individual sections of the scale have presented in the Table 2.

Table 2. Environmental Practices of the University Teachers in Pakistan

<table>
<thead>
<tr>
<th>Section</th>
<th>Hypothetical Mean</th>
<th>Actual Mean</th>
<th>t(130) Value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Environmental Practices of the University Teachers</td>
<td>3.5</td>
<td>3.29</td>
<td>18.33</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Section A: Use of Materials in Teaching</td>
<td>3.02</td>
<td>3.02</td>
<td>29.51</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Section B: Conservation Practices</td>
<td>3.32</td>
<td>3.32</td>
<td>14.88</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Section C: Consumption Practices</td>
<td>3.39</td>
<td>3.39</td>
<td>8.67</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Section D: Relationship with the environment</td>
<td>3.42</td>
<td>3.42</td>
<td>8.32</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Comparison of the Environmental Practices of the Teachers of the Private and Public Sector Universities in Pakistan
In order to compare the mean scores of the public sector and private sector university teachers, null hypothesis 2 i.e. “There is no difference in the mean scores of the public sector and private sector university teachers in Pakistan” was tested through independent sample t-test. The test results indicated that the mean score of the public sector university teachers was ‘3.35’ with a standard deviation of 0.35 whereas the mean score of the private sector university teachers was ‘3.23’ with a standard deviation on ‘0.36’. The result of the independent sample t-test is as follows.

\[ t(129) = 1.90, \, p > .05 \]

Though apparently, mean score of the public sector university teachers looked more than that of the private sector university teachers, the t-test result indicated that the mean scores of the two groups were not significantly different from each other. Therefore, null hypothesis 2 could not be rejected. This leads to an inference that the environmental practices of the public sector and private sector universities are same. The standard deviation value indicates that the responses did not vary much. Detailed mean and ‘t-values’ of the two groups have been presented in table 3. The results in the Table 3 show that although the overall mean scores of both groups was similar, the mean score of the public sector university teachers was higher in terms of their relationship to the environment. It is also important to note that the most of the ‘t-values’ (Table 3) are close to ‘2’ indicating a ‘potential difference’ in the two groups if the study includes more people. It indicates a need for further investigation.

### Comparison of Environmental Practices of the Public Sector and Private Sector University Teachers

<table>
<thead>
<tr>
<th>Practices</th>
<th>Mean Scores of the Public Sector Teachers</th>
<th>Mean Scores of the Private Sector Teachers</th>
<th>Comparison of Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Environmental Practices</td>
<td>3.35</td>
<td>3.23</td>
<td>[ t(129) = 1.90, , p &gt; .05 ] Mean score of the public sector university teachers is same as that of private sector university teachers.</td>
</tr>
<tr>
<td>2 Environmental Practices in Teaching</td>
<td>3.09</td>
<td>2.97</td>
<td>[ t(129) = 1.93, , p &gt; .05 ] Environmental practices in teaching of the public sector university teachers are same as that of private sector teachers.</td>
</tr>
<tr>
<td>3 Conservation Practices</td>
<td>3.36</td>
<td>3.28</td>
<td>[ t(129) = 1.89, , p &gt; .05 ] Conservation practices of the public sector university teachers are same as that of private sector university teachers.</td>
</tr>
</tbody>
</table>
### Comparison of the Environmental Practices of the Female and Male University Teachers

To test the null hypothesis 3 “There is no difference in the mean scores of the female and male university teachers in Pakistan” independent sample t-test was employed. The data analysis indicated that the mean score of the female university teachers was ‘3.41’ with a standard deviation of 0.39 whereas the mean score of the male private sector university teachers was ‘3.17’ with a standard deviation of ‘0.31’. The values of the standard deviation indicate more variation in the responses of the female university teachers. The result of the independent sample t-test is as follows.

\[
t(129) = 3.71, p < .05
\]

The t-test result indicated that the mean scores of the two groups were significantly different from each other. As a result, null hypothesis 3 was rejected indicating that the practices of female university teachers were more ‘pro-environmental’ as compared to male university teachers. Detailed mean and ‘t-values’ of the two groups have been presented in the table 4.

The mean scores in the table 4 indicate that the female teachers differed from the male teachers’ maximum on their relationship with the environment. The table also shows that the environmental practices of female and male teachers are same as far as their teaching is concerned.

**Table 4: Comparison of Environmental Practices of the Female and Male University Teachers**

<table>
<thead>
<tr>
<th>Practices</th>
<th>Mean Scores of the Public Sector Teachers</th>
<th>Mean Scores of the Private Sector Teachers</th>
<th>Comparison of Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Consumption Practices</td>
<td>3.44</td>
<td>3.34</td>
<td>(t(129) = 1.91, p &gt; .05) Consumption practices of the public sector university teachers are same as that of private sector university teachers.</td>
</tr>
<tr>
<td>5 Relationship with the Environment</td>
<td>3.51</td>
<td>3.33</td>
<td>(t(129) = 2.53, p &lt; .05) Teachers of the public sector universities have a stronger relationship with the environment as compared to the teachers of the private sector universities.</td>
</tr>
</tbody>
</table>
Practices

<table>
<thead>
<tr>
<th>Practices</th>
<th>Mean Scores of the Female Teachers</th>
<th>Mean Scores of the Male Teachers</th>
<th>Comparison of Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Environmental Practices</td>
<td>3.39</td>
<td>3.185</td>
<td>* ( t(129) = 3.71, p &lt; .05 ) Mean score of the female university teachers is higher than that of male teachers.</td>
</tr>
<tr>
<td>2 Environmental Practices in Teaching</td>
<td>3.03</td>
<td>3.01</td>
<td>* ( t(129) = 0.09, p &gt; .05 ) Both female and male university teachers are involved in same environmental practices in their teaching.</td>
</tr>
<tr>
<td>3 Conservation Practices</td>
<td>3.47</td>
<td>3.17</td>
<td>* ( t(129) = 7.59, p &lt; .05 ) Female teachers undertake more conservation practices as compared to male university teachers.</td>
</tr>
<tr>
<td>4 Consumption Practices</td>
<td>3.48</td>
<td>3.3</td>
<td>* ( t(129) = 5.12, p &lt; .05 ) Female teachers’ consumption practices are more pro-environmental as compared to male teachers.</td>
</tr>
<tr>
<td>5 Relationship with the Environment</td>
<td>3.58</td>
<td>3.26</td>
<td>* ( t(129) = 11.53, p &lt; .05 ) Female teachers have a stronger relationship with the environment as compared to the male teachers.</td>
</tr>
</tbody>
</table>

Comparison of Mean Scores of University Teachers belonging to Different Age Groups

In the current study, 58 respondents belonged to the age group of 25-40 years, 52 belonged to the age group of 41-55 years and 21 belonged to the age group 56-70 years. To test the hypothesis “There is no difference in the mean scores of the university teachers belonging to different age groups in Pakistan”, ANOVA was run. The results indicated that no group differed from each other on the basis of their age. The mean scores of the three groups have been shown in the Table 5.

Table 5. Mean Scores of University Teachers Belonging to Different Age Groups
### Table 5. Age group and Mean Score

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 25-40 Years</td>
<td>3.32</td>
</tr>
<tr>
<td>2 41-55 Years</td>
<td>3.28</td>
</tr>
<tr>
<td>3 56-70 Years</td>
<td>3.29</td>
</tr>
</tbody>
</table>

The score in the table indicates that the mean scores of the different age groups are very close.

### Environmental Practices of the University Teachers belonging to different Academic Fields

The study respondents indicated that 35 respondents were from Natural Sciences, 27 were from Management Sciences and 69 were from Social Sciences. To test the hypothesis “There is no difference in the mean scores of the university teachers belonging to different fields of study in Pakistan”, ANOVA was run. The results indicated that no group differed from each other. The mean scores of the three groups have been shown in the Table 5.

#### Table 6. Mean Scores of University Teachers belonging to different age groups

<table>
<thead>
<tr>
<th>Field of Study</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Social Sciences</td>
<td>3.28</td>
</tr>
<tr>
<td>2 Natural Sciences</td>
<td>3.36</td>
</tr>
<tr>
<td>3 Management Sciences</td>
<td>3.24</td>
</tr>
</tbody>
</table>

Although mean scores of the three groups did not differ statistically, apparently the mean score of the university teachers from the field of Natural Sciences look relatively higher.

### Discussion

This section has been organized under four headings to discuss the study findings.

#### Teaching-related environmental Practices of the University Teachers

The study found that the environmental practices of the university teachers in Pakistan are not pro-environmental. Moreover, the mean scores of the university teachers were found relatively lower on their teaching-related environmental practices while maximum on the relationship with the environment. This finding is in line with the finding of Ogunbode’s (2013) research. He found that Nigerian university students had “lower endorsement of the pro-ecological ideologies…[but] a strong consensus was observed among the sample on the fragility of nature’s balance” (p. 1477). This shows that people feel a relationship with the environment and want a balance of nature, however, their behaviors are not always in line with their ‘relating’.

Responses to some individual items are also important and need a careful interpretation. Response to item 8 shows that the teachers mostly do not give an option to their students to submit their assignments online. This is a very interesting finding as the situation after Covid 19 has made teachers accept online work. This indicates that all the teachers can use online forums and reduce the use of paper. This supports the argument that Covid 19 has made teachers to act in a more pro-environmental manner. This response is contradictory to the response on item 1 i.e. about submitting assignments on paper.
International Comparison of the University Teachers Environmental Practices

In the current study, mean score of the university teachers on the environmental practices scale turned to be ‘3.29’. It is very different from the mean scores reported by the earlier researchers. This finding supports the argument that people’s ecological worldview, behaviors and actions vary across the countries (Smith et al., 2017). For example, Fleury-Bahi et al. (2015) found that the mean score on ecological worldview of the French people was 3.85. Similarly, Jowett et al. (2014) found that the mean scores of undergraduate students from New Zealand varied from 3.4 to 4.15. The mean score of the Nigerian students was reported ‘2.5’ by Ogunbode (2013). This shows that context of the countries is an important predictor of the environmental practices of the people. The mean score of the university teachers in the current study was much lower than the hypothetical mean of ‘3.5’. The cut of value of ‘3.5’ was selected in the light of literature available on environmental behaviors, environmental consciousness, and conservation and consumption practices. Literature suggested that educated people exhibit pro-environmental practices (Smith et al., 2017; Sánchez, López-Mosquera, & Lera-López, 2016). Keeping the educational background of the respondents in view, a cut of value of ‘3.5’ was decided for the current study. The researcher assumed that a minimum mean score of ‘3.5’ will be required to declare if the practices of the university teachers were pro-environmental. The findings indicate that respondents’ education is not a determinant of environmental practices of the people rather their context determines their environmental practices.

The findings of the current study support the argument that pro-environmental orientations/ worldviews are greater among more developed nations. Franzen and Vogl (2012), Sandvik (2008), Tjernstrom and Tietenberg (2008) and Smith et al. (2017) reached to the conclusion that the developed societies do not face economic problems, therefore, they value environment more as compared to the people living in the developing or poor countries. As Pakistan is a developing country and it is expected that the people here are more concerned about the economic matters. Despite being educated the university teachers do not exhibit pro-environmental practices because the context of their country does not support the environmental cause.

The results of the current study do not support the assumption that the educated people exhibit pro-environmental practices (Smith et al., 2017; Sánchez, López-Mosquera, & Lera-López, 2016). However, it is important to note that in the current study, university teachers’ knowledge of the environmental issues has not been investigated. The result could have been different if that aspect was also included in the questionnaire because educated people are aware of environmental issues and they talk about these issues often.

Figure 4 shows that the means scores of the university teachers regarding consumption practices are around ‘3.5’. However, their score on the item ‘37’ is considerably lower. The item is about the re-use of water bottle. This looks alarming to note that the universities teachers do not follow re-use policy. These findings have serious implications for the higher education. The universities are considered sites for social transformation and implementation of social policies. Universities across the world are trying to find the ways to contribute towards achieving Sustainable Development Goals by 2030. They have signed environmental tallories too (Shephard, 2015). University teachers are the key players in advocating any cause. If their own practices are not ‘pro-environmental’ it will not be possible for them to serve as role models for the cause of environment.

Comparison of Different Groups of the Respondents

The study found that the overall mean scores of public sector university teachers and private sector university teachers was same. However, the mean score of the public sector university teachers was higher in terms of their relationship to the environment. This finding suggests further investigation to find out the reasons why public sector university teachers had a stronger relationship with the environment as compared to the private sector university teachers. A possible angle of looking at this finding could be that public sector universities in Pakistan hold more talks, seminars and conferences on different issues and environmental issues are one of them. Exposure to the talks and seminars could be a potential reason for a high mean score regarding relationship with the environment. It is also important to note that the most of the ‘t-values’ (Table 3) are
close to ‘2’. This indicates that the two groups (public sector university teachers and private sector university teachers) have potential to be different.

The mean scores in the table 4 indicate that the female teachers differed from the male teachers’ maximum on their relationship with the environment. This finding is may be explained in the light of earlier research on new ecological paradigm, environmental attitudes and environmental behaviors. The researchers found that women exhibit more pro-environmental behaviors and attitudes. The researchers (Daniels et al. 2012; Franzen & Vogl, 2012; Leiserowitz, 2006) also found that females exhibit more pro-environmental attitudes and behaviors. The researchers (Torgler & García-Valins, 2007) argue that women exhibit more pro-environmental behaviors and attitudes because of their role as caregivers and nurturers. Though female teachers’ overall environmental practices are better than male university teachers, the practices of both groups are same as far as their teaching is concerned. Both groups use paper and other resources equally.

The data analysis indicated that the environmental practices of the university teachers did not differ from each other on the basis of their age. This finding is contradictory to earlier research (Sánchez et al., 2016; Smith et al., 2017) who found that young people exhibit more pro-environmental behaviors and attitudes. Earlier researches (Sánchez et al., 2016; Smith et al., 2017) included much younger respondents and found that their practices were more pro-environmental.

The results indicated that the university teachers from the fields of Natural Sciences, Management Sciences and Social Sciences did not differ in terms of their environmental practices. Although mean scores of the three groups did not differ statistically, apparently the mean score of the university teachers from the field of Natural Sciences is relatively higher. This requires further investigation with a large sample. It will also be appropriate to ask the respondents to mention their subject in the questionnaire. The people from the discipline of Botany, Zoology and Environmental Studies might show higher mean scores on the scale of the environmental practices.

**Environmental Practices and Theory of Planned Behaviour**

The study findings can be explained in terms of theory of planned behavior (Ajzen, 1991, 2002). According to the theory of planned behavior, people’s actions are not random rather grounded in their attitudes, norms and behavioral control. The findings that the mean scores of the university teachers were below the expectation (hypothetical value of ‘3.5) may be explained in terms of two factors: internal and external. Internal factors are related to individual attitudes, personal norms and perceived behavioral control whereas external factor are related to social norms and external conditions.

The results indicated that mean scores of the respondents in the three sections were same while results were different in teaching-related environmental practices. The ‘relationship towards environment’ on the scale consisted of items related to pro-environmental attitudes. The study results indicated that there was no difference in respondents’ mean scores in the sections of relationship with the environment, conservation practices and consumption practices. The mean score of teaching-related practices was lower than other four sections. The finding indicates that there is a relationship between attitude towards environment and conservation and consumption practices of the people. The mean scores on conservation and consumption practices could have been different if scores on environmental practices were high. Attitudes and relating are the constituent elements of the broader concept of practices.

Respondents’ teaching-related practices emerged least pro-environmental in the study. This finding may be explained in terms of ‘perceived behavioral control’. Research indicates that a behavior displayed earlier has a chance to be repeated in future more frequently. In fact it is “the perceived ease or difficulty of performing the behavior” (Ajzen, 1991; p. 188). Repetition can be habitual or intentional (Ajzen, 2002). In the current study, respondents mentioned that they used paper often and encouraged their students to submit their work in paper form. The major reason for this behavior seems ‘habitual action’. It seems that they had never tried an alternative action. The findings support the argument that perceived behavioral control predicts a certain environmental behavior (Klockner & Oppedal, 2011; Mannetti et al., 2004).
The findings may also be explained in terms of the impact of situational factors on the environmental behaviors (Fliedenschnee & Schelakovsky, 1998). Contradictory to the study findings, currently all university teachers are engaged in the alternative practice of online teaching and paper-free practice. The situation of Covid 19 enforced the teachers to adopt more pro-environmental teaching behavior. This example supports the argument that the environmental practices are influenced by the situational factors. Pre-Covid situation allowed the teachers to accept paper-based work. However, the changed situation has changed teachers practices.

The study findings do not support the argument that the less people are likely to exhibit pro-environmental behaviors if less possibilities are available (Derksen & Gartrell, 1993). University teachers have a lot of possibilities to exercise pro-environmental behaviors at the personal and collective levels. Despite of possibilities, if their behavior is not pro-environmental then the reason is not possibilities. The reason could be perceived behavioral control or subjective norms. In Pakistan, pro-environmentalism is not a focus of social norms. People take pride in telling others the amount of their electricity and gas bills. They try to tell others that they belong to affluent social class. A person who consumes less or conserves energy is considered a person belonging to low social status. Similarly, vehicle is a symbol of social status. Knowing that a heavy car consumes more petrol, people use big cars. There is no personal or social norm that can urge people to consume less and conserve energy.

Conclusion

The study findings lead to important conclusions regarding environmental practices of the university teachers in Pakistan. The findings indicate that the level of education is not a predictor of pro-environmental practices. All of the respondents in the current study held an MPhil or PhD degree. They are the most educated people in the country. However, their environmental practices lack pro-environmentalism. This indicates that education is not a determinant of pro-environmental practices. The findings further indicate that the gender is an important predictor of environmental practices. Though the overall practices of the university teachers in Pakistan are not pro-environmental, there is a difference in terms of gender of the respondents. Like other parts of the world, female teachers in Pakistan also exhibit relatively more pro-environmental practices as compared to male colleagues. This shows that gender is a determinant in pro-environmental practices across the counties. In other words, influences of gender on pro-environmental behaviors and practices are not contextual. In addition, the findings indicate that academic fields and age do not predict environmental practices. Earlier researches indicated that younger people exhibit relatively more pro-environmental behaviors. However, the current study found no difference in the environmental practices of the university teachers in terms of their age. This suggests that age is not a universal predictor in determining the environmental practices.

The findings indicate that there is a connection between people’s conservation practices, consumption practices and relationship with the environment. People who have a stronger relationship with the environment are more likely to exhibit pro-environmental consumption and conservation. However, there is no evidence if the stronger relationship with the environment would impact teachers’ teaching-related practices. The findings suggest ‘perceived behavior control’ and situational factors affect teaching-related environmental practices of the teachers. The study findings also suggest that personal and social norms affect university teachers’ environmental practices i.e. conservation practices, consumption choices and relationship with the environment.

Recommendations

The study findings lead to following recommendations.

- The study may be replicated at a large scale (province level or country level).
 Future researchers may study the relationship between teachers ‘perceived behavioral control’ and their environmental practices.

Future researchers may study the relationship between social norms and teachers’ environmental practices.

Most of the ‘t-values’ (Table 3) are close to ‘2’. This indicates that the two groups (public sector university teachers and private sector university teachers) have potential to be different. There is a need for further research with a larger sample to ascertain if the two groups are really same.

There is a need for further research to explore reasons for lesser pro-environmentalism in the university teachers of Pakistan.

There is a need of more research (with a large sample) on the influence of academic background on the environmental practices of the university teachers.

The study findings suggest a change in the culture of the universities to promote pro-environmentalism.

References


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