Analysis of Students' Knowledge, Attitudes and Behavior towards Sustainability and Sustainable Lifestyle: Implications for the Sustainable Future of Africa

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Chapter 5

Analysis of Students' Knowledge, Attitudes and Behavior towards Sustainability and Sustainable Lifestyle: Implications for the Sustainable Future of Africa

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Abstract

Sustainable development has become a critical concern in the 21st Century. While a number of players are actively engaged in the delivery of the SDGs, the unique contribution of educational institutions of higher learning is key to achieving the SDGs. Apart from the fact that quality education can break the shackles of poverty and hunger (SDG 1 & 2), spur economic growth and decent jobs (SDG 8), we argue that quality educational institutions of higher learning play a critical role in grooming future leaders and workers to develop global social consciousness, positive sustainable development mind-set and adopt a sustainable lifestyle. Therefore, this empirical study utilized a cross-sectional descriptive research design and surveyed 422 respondents to examine the level of students' awareness of sustainability issues, their attitudes towards sustainability and their current lifestyle in selected countries in Africa. The results suggest that generally, students have a fair idea of sustainability issues. They seem to know a lot about pollution and deforestation, however, they lack a deep understanding of other key sustainability-related concepts that confront our world today. More so, they appear to have positive attitudes towards the multi-dimensions of environmental sustainability. Nevertheless, their daily actions and lifestyle do not powerfully support what they profess. Implications of the study results are therefore discussed.

Introduction

The Industrial Revolution which began in the late18[th] century has metamorphosed to modern industrial capitalism and materialism. Unfortunately, this modern industrialism has resulted in alarming global crises in energy, climate change, water, biodiversity, pollution, waste management and many areas. Some scholars and scientists have even proposed the designation of a new geologic era—the "Anthropocene," to signify the degree at which human activity is negatively impacting the planet earth (Zalasiewicz et al., 2008). Although environmental degradation is not a new phenomenon (Laasch & Conaway, 2014; Weart, 2013), recent human activities have triggered unprecedented, large-scale exploitation of natural resources at a rate that threatens their capacity for renewal. Scott, Amel, Koger and Manning (2016) opine that globally, humans are consuming resources and generating waste so rapidly that it would take one-and-a-half earths to keep pace over time.

The magnitude of societal and environmental degradation has attracted the attention of the global community of the need to address the negative effects of human activities at all

levels in order to build a more sustainable planet for the present and future generations through the Sustainable Development Goals (SDGs). While a number of players are actively engaged in the delivery of the SDGs, the unique contribution of educational institutions of higher learning is key to achieving the SDGs. Apart from the fact that quality education can break the shackles of poverty and hunger (SDG 1 & 2), spur economic growth and decent jobs (SDG 8), we argue that quality educational institutions of higher learning play a critical role in grooming future leaders and workers to develop global social consciousness, positive sustainable development mind-set, and a sustainable lifestyle.

By extension, students of today are the leaders of tomorrow and as such, they hold a lot of potential to transform our world for the better. They are the future policymakers on sustainability, scientists, business leaders and technocrats in the public and private sectors driving national development. Therefore, their current knowledge and attitudes towards for instance the planet, people and the economy will also determine their passion for engaging in sustainable development practices in the near future. Besides, the extent to which a student understands the depth of the global crises will determine how well the next generation will address those crises. Consequently, this paper examined the level of students' awareness of sustainability issues, their attitudes towards environmental sustainability and their current lifestyle in selected countries in Africa. In seeking to examine these, our aim is to provide an understanding of how the future generation of leaders and workers in Africa perceive sustainability issues and also draw out implications for the sustainable future of Africa.

Sustainability and Sustainable Development

Sustainability generally implies the long-term future wellbeing of the planet earth and its inhabitants. Thus, the aim of sustainable development is to provide a favorable environment in which the behavior of human beings is harmoniously adjusted to improve on the present and future generations.

There is a close relationship between sustainability and sustainable development. Venkatesh, Morris, Davis and Davis, (2003) view sustainable development as a process, which is never completed, and a means of achieving sustainability. According to Jáuregui (2018), the difference between sustainability and sustainable development lies in the fact that sustainability is a long-term goal, while sustainable development is commonly understood as a set of proposals that may lead to long-term sustainability. These proposals are frequently related to processes and strategies such as sustainable agriculture, sustainable production, sustainable consumption, good governance, education and capacity development.

Since the Brundtland Commission Report in 1987, much attention has been given to sustainability and sustainable development, particularly from the United Nations (UN). In September 2015, the UN General Assembly formally adopted the 17 SDGs to deliberately focus on the three dimensions of sustainable development—economic prosperity, social inclusion, and environmental sustainability. Economists generally summarize a country's overall economic development by Gross Domestic Product (GDP) per person in a given time period. Although the world economy is growing rapidly, it is highly unequal in the distribution of income within countries and between countries (Sachs & Souer, 2015). Therefore, the challenge is to create a sustainable economic environment that offers opportunity to all through productive employment and decent work.

On the other hand, social inclusion is about the wellbeing of all people, including shared prosperity and social justice. Frazer and Marlier (2013) define social inclusion as a process in which those at risk of poverty and social exclusion gain the opportunities and resources that are needed to fully participate in societal activities. It is also the process of improving the ability, opportunity and dignity of those disadvantaged on the basis of their identity to take part in society (World Bank, 2016). Thus, health, education, gender, and inequality are among the key global imperatives underscoring the centrality of social inclusion. A sustainable path to development is one that ensures an inclusive society, not only in terms of economic welfare but also in terms of voice and empowerment of all people (World Bank, 2013).

In Africa, social exclusion is often about poverty. Despite a significant reduction in poverty rates, the world's extreme poor will be increasingly concentrated in Africa (World Bank, 2016). The SDGs, therefore, offers a significant opportunity for Africa to address the underlining factors mitigating against social development. Similarly, several factors such as climate change, land use, waste and pollution are significant factors impacting the Planet. For this reason, sustainable development cannot be achieved without safeguarding the ability of the planet Earth to maintain the conditions critical to the achievement of the SDGs. Although the Brundtland Report was not the beginning of sustainable development (Mulligan, 2018), it has gained legitimacy as a pressing issue due to the current disturbing global trends that threaten the wellbeing and survival of current and future generations. More so, the resolve to 'leave no one behind' is arguably what makes the SDGs unique.

Sustainable Living and Higher Education

Sustainable living is a behavioral lifestyle that deliberately ensures a lesser negative impact on the environment through daily decisions and actions. It is the use of goods and related products that provide basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials (cited from Black & Cherrier, 2010). Some have narrowed sustainable lifestyle to the consumption of 'green' products such as organic and locally grown fruit and vegetables, recycled materials, eco-friendly products or efficient use of energy. While these practices are praiseworthy, sustainable living and lifestyle involve a complete paradigm shift to a worldview that fosters the highest quality of life and the efficient use of natural resources. Developing such a lifestyle requires an understanding of the dangers of anthropocentrism and a change in values, attitudes and behaviors. The Marrakech Process Task Force on Sustainable Lifestyles broadly defines sustainable lifestyle as "a way of living enabled both by efficient infrastructures, goods and services, and by individual choices and actions that minimize the use of natural resources, and generation of emissions, wastes and pollution, while supporting equitable socio-economic development and progress for all" (Thidell, n.d.). Thus, while governments have their role to play by creating the appropriate frameworks and infrastructures, society and individuals equally need to make deliberate lifestyle choices through sustainable consumption.

The current deplorable state of our world did not happen without a cause. Much of the issues of sustainability are tied to consumer affluence, materialism, urbanization, population explosion, and industrial activities. For instance, the World Watch Institute reports that the global meat production has more than quadrupled in the last half-century to over 308 million tons in 2013, bringing with it considerable environmental and health costs due to its large-

scale draw on water, feed grains, antibiotics and grazing land. In addition, the high demand for plastics and its corresponding menace have ended up in landfills and oceans—polluting ecosystems, endangering wildlife, and ruining communities. More so, the world's fleet of automobiles now exceeds 1 billion with each vehicle contributing greenhouse gases and reducing air quality. In the second half of the 20th century, world population has doubled, food production tripled, energy use quadrupled, and overall economic activity quintupled (National Research Council, 1999).

The underpinning worldview that continues to shape consumption patterns is what has been identified as the Dominant Social Paradigm (DSP) by Scott et al. (2016). The DSP assumes that human beings have the right to use natural resources in any way for their personal benefit. Similar to the anthropocentric view, this means human beings have unrestricted right to exploit natural resources to their advantage. Although this view is anti-sustainability, it has been endorsed to varying degrees by many people around the globe. Moreover, since this mindset is ingrained in the 21st-Century culture and lifestyle, to change requires individuals who are willing to think and act differently in ways that will lead to sustainable behaviors and lifestyle. Hence, education is one key tool that can be used to redirect the behavior of people towards sustainable living. Universities occupy a unique position in society. The importance tertiary students attach to waste management, conservation, community service, health and wellness, green economy, gender equality, etc., can be shaped in the university. The onus is therefore of tertiary institutions to integrate the values inherent in sustainable development goals into all aspects of learning to encourage changes in behavior that allow for a more sustainable Africa.

Methods

Participants

We used a cross-sectional research design to survey four hundred and twenty-two students from four selected international universities in sub-Saharan Africa. Participants represented approximately 20 countries and their ages ranged from 19 to 57 years with a mean age of 30.41 years ($SD = 7.94$). The majority (79%) of the students were pursuing undergraduate degrees in various areas, and a few (19%) in postgraduate programs. In total, 61% of the respondents were male.

Instrument

A self-designed questionnaire was used to measure the level of students' knowledge, attitudes and behaviors regarding sustainability on a five-point Likert scale. We assessed students' knowledge with a 15-item, with respondents indicating their level of knowledge with each statement (1 = no knowledge on the issues and 5 = very knowledgeable of the issue). We measured environmental attitudes with a multidimensional scale (1 = strongly disagree to 5 = strongly agree) assessing non-anthropocentrism (3 items), government responsibility (5 items), personal responsibility (4 items) and possibility of eco-crises (3 items). Sustainable lifestyle was also measured with a multidimensional scale (1 = never, 5 = always) assessing the components of energy conservation (3 items), responsible consumption (6 items), interest in ecosystem behavior (3 items) and education behavior (3 items). The internal consistency ascertained through the Cronbach alpha scores for knowledge, attitudes and behavior are .915, .748, .876, respectively.

Results

Sustainability Knowledge

Table 1 shows the extent to which students are knowledgeable about sustainability issues in descending order. The Environmental Education and Training Partnership (Wan, 2018) describes an environmentally literate person as the one who is aware of sustainability issues, knows that their daily choices affect the environment and what they need to do to enhance sustainable development. From Table 1, it appears that students have a fair idea of sustainability-related issues. They seem to know a lot about pollution, deforestation, social responsibility, climate change, food security and waste management. However, the results indicate that they lack deep understanding of other key issues that confront our world today and their corresponding implications.

Table 1. Students' Level of Knowledge on Sustainability-related Issues

	N	Mean	Std. Deviation
Pollution (e.g. water, air,)	416	4.23	1.04
Deforestation	420	4.05	1.15
Social responsibility	417	3.84	1.12
Climate change	419	3.65	1.06
Food security	420	3.64	1.22
Waste management	422	3.63	1.20
Sustainable development	418	3.47	1.23
Sustainable living	415	3.16	1.22
Responsible consumption	420	3.10	1.32
Renewable energy	422	2.95	1.27
Green economy	416	2.75	1.28
Acid rain	418	2.60	1.34
Green marketing	418	2.58	1.36
Biodiversity	419	2.55	1.32
Sustainable reporting	418	2.54	1.28
Overall Knowledge	386	3.25	1.23

Interpretation of mean: 1.00-1.49 = never heard of issue; 1.50-2.49 = have little knowledge; 2.50-3.49 = have some/fair idea of issue; 3.50-4.49 = know a lot; 4.50 – 5.00 = fully understand the issue
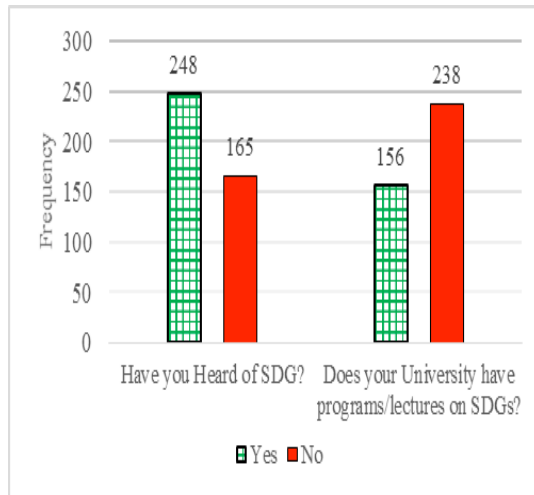
Figure 1. What Do You Know about Sustainable Development Goals?

In addition, the results displayed in Figure 1 shows that the idea of sustainability and sustainable development is relatively unfamiliar to some tertiary students. One-third of the respondents (39%, f = 165) indicated that they've not heard of the SDGs and 56% (f = 238) of the respondents disclosed that their universities have no programs or organized lectures on the SDGs. This may explain the level of students' knowledge of sustainability issues. There is a need to develop tertiary students' understanding of sustainability and to encourage them to fully engage in issues of sustainable development in today's society.

Students' Attitude towards Environmental Sustainability

Table 2 shows the multi-item dimensions of environmental attitudes regarding how students think and feel about the different aspects of environmental sustainability. Students displayed a higher degree of agreement to items related to non-anthropocentrism (M = 4.12, SD = .77). Thus, they believe that "plants and animals have as much right as humans to exist," and "humans have moral duties and obligations to non-living nature". Interestingly, while students believe that the government has a responsibility in caring for the planet, there is relatively low recognition of their personal responsibility toward the same. Individuals tend to defer responsibility for environmental sustainability to governments. This agrees with Wray-Lake, Flanagan and Osgood (2010), who noted that in the USA, adolescents defer responsibility for environmental issues to the government. This study also reveals the level of uncertainty among students on the possibility of looming ecological crises if things continue on their present course.

Table 2. Students' Attitudes towards the Environment

Dimensions	Mean	Std. Deviation
Non-Anthropocentrism	4.12	.77
Government Responsibility	4.17	.69
Personal Responsibility	3.78	.57
Ecological crises	3.42	.79
Overall Attitude	3.90	.50

Interpretation of mean: 1.00-1.49 = Strongly Disagree; 1.50-2.49 = Agree; 2.50-3.49 = Uncertain; 3.50-4.49 = Agree; 4.50 – 5.00 = Strongly Agree

Sustainable Lifestyle of Students

Table 3 shows the typical lifestyle of the respondents concerning conservation and other behaviors; the respondents are not consistent in their lifestyle concerning sustainable behavior.

Table 3. Sustainable Behaviors of Students

Behavior	Mean	Std. Deviation
Energy Conservation	3.97	.87
Responsible Consumption	3.01	.90
Interest in ecosystem	3.07	1.05
Education	2.85	1.02
Overall Behavior	3.18	.75

Interpretation of mean: 1.00-1.49 = Never; 1.50-2.49 = Rarely; 2.50-3.49 = Sometimes; 3.50-4.49 = Often; 4.50 – 5.00 = Always

As illustrated in Table 3, the respondents indicated they often ($M = 3.97$, $SD = .87$) engage in conservation practices such as unplugging electronic devices/appliances when not in use. According to Schuetz et al. (2011), energy conservation is likely to be motivated more by cost savings than environmental concerns. Furthermore, the mean score for responsible consumption is merely 3.01 ($SD = .90$). This shows that they sometimes take deliberate actions such as paying attention to product labels to determine if the products are eco-friendly. Again, they take interest in living and non-living creatures and, take part in tree planting exercises ($M = 3.07$, $SD = 1.05$). Interestingly, a meticulous look at Table 3 shows education as the lowest mean score ($M = 2.85$, $SD = 1.02$); suggesting that students are not keen in voluntarily engaging in activities to boost their knowledge and understanding of the environment and other related issues.

Discussion

This study provides empirical evidence of the level of students' knowledge, attitudes and lifestyle regarding sustainability. Students have an idea of sustainable development concepts, but their understanding is somewhat limited. Our findings suggest they get such information from other sources except their universities. This agrees with previous studies that have indicated that the commonest source of information/awareness about SDGs is the media and

Internet (Omisore, Babarinde, Bakare, & Asekun-Olarinmoye, 2017). Such sources may be misleading, perpetuating myths and misunderstandings about environmental issues (Scott et al., 2016). Walter Leal Filho, Paul Pace and Evangelos Manolas (Schuetz et al., 2011) describe how the issue of climate change is presented incorrectly to the public. The reasons for behavior change are not transmitted in understandable and action-oriented ways, leading to inactivity and disconnection from cultivation of a sustainable development ethic. Knowledge is key to a positive sustainable development mind-set and living. Such knowledge will enable students to have meaningful exchanges about ideas and policies for a better future (Scott et al., 2016). A meta-analysis of 87 published reports containing 253 experimental treatments found that information has an effect on sustainable behavior (Osbaldiston & Schott, 2012).

The results also highlight students' beliefs that the government has a greater responsibility in caring for the environment than individuals. While this is corroborated by Heath and Chatzidakis (2012), environmental stewardship should equally be a personal responsibility (Scott et al., 2016). Individuals can influence the society by starting with their own situational contexts and bring changes that move society in a sustainable direction. Students' current lifestyle imply a lack of commitment to sustainable living, possibly due to lack of understanding about the impact of human activities and the quest for their comfort and luxury. This finding is consistent with other studies (e.g. Wan, 2018). One key challenge hindering sustainable lifestyle is that people do not feel that they have the opportunities or resources to make a difference (Karakiewicz, Yue, & Paladino, 2015). However, deliberate education can foster self-confidence, proactivity and instill a sense of personal responsibility in students.

Implications and Conclusion

Overall, our findings have implications on the extent to which Africa is set to achieve economic prosperity, social inclusion and environmental sustainability by 2030. The idea of sustainability and sustainable development is still relatively new or unknown to some tertiary students. The results show a gap between the SDG acclaimed aspirations and the preparedness of the future generation of leaders and workers mandated to transform Africa in the next few years. Thus, the resolve to 'leave no one behind' is arguably relinquished, as students are left behind. By implication, the very people who are expected to implement and engage in the SDGs to ensure a better Africa for the present and future have no clue of their role and importance.

Although all sectors have been called to participate in achieving the SDGs, tertiary institutions in Africa have a unique role in promoting sustainability and sustainable living via teaching, research, community engagement and campus operations. Mock (2018) rightly remarks that universities are the perfect places to introduce the SDGs to young people from all walks of life because they offer the greatest scope for learning. More so, ''higher education is the level at which we can weave environmental sustainability into every level of academia and the students will [hopefully] listen and respond (Nance, 2009, p. 9).'' By educating youthful people on the SDGs, they become aware of global challenges and become active stakeholders and participants for change for a better world (Pârgaru, Jacob, & Jacob, 2015).

Globally, enrolment in higher education has been growing steadily (UNESCO Global Education Monitoring Report, 2017). Between 2000 and 2014, the number of students in higher education institutions more than doubled, rising from 100 million to 207 million. Over 4.8 million students are enrolled in higher education institutions in Sub-Saharan Africa (UNESCO Institute for Statistics, 2011). Africa has a young population and a growing labor force which is a highly valuable asset to ensure a sustainable future (McKinsey Global Institute, 2016). Hence, the role and impact of higher educational institutions in sustainable development are very distinguished.

Tertiary institutions in Africa should deliberately design effective teaching and learning processes to educate students in the core concepts and merits of sustainable development. When they understand the state of the world from their course instructors, they would be influenced to take actions to reduce their carbon footprint and become more eco-centric. Filho, Pace, and Manolasfact (as cited in Schuetz et al., 2011) say, "long-term achievements in sustainable development require individuals who are critical thinkers equipped with the required knowledge, skills and attitudes that promote action toward sustainable lifestyles. This can only be achieved by a well-planned and implemented educational strategy" (Schuetz et al., 2011, p. 269).

In summary, this study examined the perspectives of tertiary students in Africa on sustainability and sustainable living. The sustainable development of Africa will largely depend on how the future generation of decision-makers view people, the Planet, the economy and their commitment to a sustainable lifestyle. This is essentially determined by the extent to which institutions of higher learning integrate sustainable development concepts in their curriculum, teacher and student development. The younger generation is central in determining the future and the level of achievement of the SDGs in Africa; they represent the future. Leaving such key players 'behind' will be lethal for the sustainable transformation of Africa.

Limitations

The study was conducted at a single point of time; therefore, it did not address changes to students' knowledge, attitudes and behaviors regarding sustainable development. Again, this article was meant to be descriptive; hence the inferred explanations discussed are not based on causal mechanisms among the variables. Future research could use a longitudinal study to explore such changes in students' knowledge, attitudes and behaviors and also examine causal mechanisms among the variables. Besides, the data were based on self-report measures which may entail a risk of common methods biases. Finally, the results and conclusion of the study were based on four selected universities in Africa; therefore, it is unrealistic to generalize the findings to all students and universities in Africa. Nonetheless, this study provides an empirical baseline data that can be used to glean insights into the understanding of students' preparedness and participation in Africa's transformation through the SDGs.

References

Black, I. R. & Cherrier, H. (2010). *Anti-consumption as part of living a sustainable lifestyle: Daily practices, contextual motivations and subjective values*. Journal of Consumer Behavior, 9, 437–453.

Brundtland, G. (Ed.). (1987). *Our common future: The world commission on environment and development*. Oxford, UK: Oxford University Press.

Cafferky, M. E. (2015). *Business Ethics in Biblical Perspective: A Comprehensive Introduction*. Downers Grove, IL: InterVarsity Press.

Frazer, H., & Marlier, E. (2013). *Assessment of Progress towards the Europe 2020 social inclusion objectives: Main findings and suggestions on the way forward—A study of national policies*. Brussels, Belgium: European Commission.

Heath, M. T. P., & Chatzidakis, A. (2012). 'Blame it on marketing': Consumers' views on unsustainable consumption. *International Journal of Consumer Studies*, *36*(6), 656–667. https://doi.org/10.1111/j.1470-6431.2011.01043.x

Jáuregui, K. (2018). Exploring education for wellbeing in Peru. In P. Essens, M.-T. Lepeley, & P. O. Pacheco (Eds.), *Wellbeing for Sustainability in the Global Workplace*. New York, NY: Routledge.

Karakiewicz, J., Yue, A., & Paladino, A. (2015). *Promoting Sustainable Living: Sustainability as an Object of Desire*. New York, NY: Routledge.

Laasch, O., & Conaway, R. N. (2014). *Principles of Responsible Management: Global Sustainability, Responsibility, and Ethics*. San Francisco, CA: Cengage Learning.

McKinsey Global Institute. (2016). Lions on the move II: Realizing the potential of Africa's economies.

Mock, Y. J. (2018). Youth and Sustainable Development: The Case for Student Action on the SDGs. Retrieved from SDSN Youth website: https://sdsnyouth.org/blog-posts/04/30/youth-and-sustainable-development-the-case-for-student-action-on-the-sdgs

Mulligan, M. (2018). *An Introduction to Sustainability: Environmental, Social and Personal Perspectives* (2nd ed.). New York, NY: Routledge.

Nance, M. (2009). The Convergence of Interests. *Issues in Higher Education*, *26*, 8–9.

National Research Council. (1999). *Our Common Journey: A Transition Toward Sustainability*. https://doi.org/10.17226/9690

Omisore, A. G., Babarinde, G. M., Bakare, D. P., & Asekun-Olarinmoye, E. O. (2017). Awareness and Knowledge of the Sustainable Development Goals in a University Community in Southwestern Nigeria. *Ethiopian Journal of Health Sciences*, *27*(6), 669–676.

Osbaldiston, R., & Schott, J. P. (2012). Environmental Sustainability and Behavioral Science: Meta-Analysis of Proenvironmental Behavior Experiments. *Environment and Behavior*, *44*(2), 257–299. https://doi.org/10.1177/0013916511402673

Pârgaru, I., Jacob, C., & Jacob, S. (2015). The interaction of human capital with social development. *Valahian Journal of Economic Studies, 6*(2), 59–64.

Robertson, M. (2017). *Sustainability Principles and Practice* (2 edition). New York, NY: Routledge.

Sachs, J. D., & Souer, B. (2015). *The Age of Sustainable Development*. New York, NY: Columbia University Press.

Schuetz, S., Bhattarai, J., Mealy, B., Schuetz, S., Swopes, N., Harvey, D., … Ohlms, K. (2011). What? The Earth is Sick? Undergraduate Student Awareness of Environmental Problems: A Qualitative Study. *Ecopsychology*, *3*(4), 269–276. https://doi.org/10.1089/eco.2011.0033

Scott, B. A., Amel, E. L., Koger, S. M., & Manning, C. M. (2016). *Psychology for Sustainability* (4 edition). New York, NY: Routledge.

Thidell, A. (n.d.). *Sustainable consumption and green lifestyles –definitions and concepts*. Retrieved from https://mst.dk/media/mst/68633/Background%20paper%20A%20-%20Session%201.pdf

UNESCO Global Education Monitoring Report. (2017). *Six ways to ensure higher education leaves no one behind* (Policy Paper No. 30). Retrieved from https://en.unesco.org/gem-report/six-ways-ensure-higher-education-leaves-no-one-behind

UNESCO Institute for Statistics. (2011). *New Pattern in Student mobility in the southern Africa development Company*. Retrieved from http://uis.unesco.org/sites/default/files/documents/new-patterns-in-student-mobility-in-the-southern-africa-development-community-2012-en.pdf

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425–478. https://doi.org/10.2307/30036540

Wan, S. W. (2018). Inquiring into Hong Kong undergraduate student's environmental attitudes and behaviors. In M. Y. Merrill, P. Burkhardt-Holm, C. Chang, M S Islam, & Y. Chang (Eds.), *Education and Sustainability: Paradigms, policies, and practices in Asia*. New York, NY: Routledge.

Weart, S. R. (2013). *The Discovery of Global Warming: Revised and Expanded Edition*. Cambridge, MA: Harvard University Press.

World Bank. (2013). *Inclusion Matters – The foundation for shared prosperity*. Retrieved from http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/244362-1265299949041/6766328-1329943729735/8460924-1381272444276/InclusionMatters_AdvanceEdition.pdf

World Bank. (2016). *Poverty and Shared Prosperity 2016 – Taking on inequality*. World Bank.

Wray-Lake, L., Flanagan, C. A., & Osgood, D. W. (2010). Examining Trends in Adolescent Environmental Attitudes, Beliefs, and Behaviors Across Three Decades. *Environment and Behavior*, *42*(1), 61–85. https://doi.org/10.1177/0013916509335163

Zalasiewicz, J., Williams, M., Smith, A., Barry, T. L., Coe, A. L., Bown, P. R., … Stone, P. (2008). Are we now living in the Anthropocene? *GSA Today*, *18*(2), 4–8.