Exploration of the Relationship between Demographic and Socioeconomic Characteristics of Ghanaians and Their Psychographic Characteristics with Regard to Sustainable Development

Augustine Kwabena Osei-Fosu

Abstract: The objective of this paper is to demonstrate the relationship between demographic and socioeconomic characteristics of Ghanaians and their psychographic characteristics with regard to sustainable development. A questionnaire was developed to collect data from five hundred ten Ghanaians in Kumasi. Sustainable psychographic characteristics of Ghanaians were investigated with the Theory of Planned Behavior with regard to their demographic and socioeconomic characteristics using Multivariate Analysis of Variance. The Kumasi sample reflected the total Ghana population in relation to gender and age. It demonstrated a significant connection between the demographic and socioeconomic characteristics of Ghanaians and their sustainable behavioral characteristics. It was found that advancement in level of education could enhance sustainable knowledge, personal norm, and perceived behavioral control towards sustainability, and reduce skepticism towards sustainability due to past experience. Understanding the demographic and socioeconomic profile of a population is imperative for sustainable development. The quest for sustainability undoubtedly needs an innovative approach and balance between age range, gender, educational level, occupation, and communities.
Keywords: Sustainability, Psychographic, Demographic, Socioeconomic, Theory of Planned Behavior (TPB)

Introduction

The need to be sustainable is the concern of world leaders and foresighted individuals, and is evidenced by the number of institutions educating and advocating for a sustainable life style (Flôres Jr, 2015; UNDP, 2006). It is also apparent in the number of world leaders challenging humanity to be sustainable (Flôres Jr, 2015; Annan, 2001). And it is clearly shown by the number of published articles and scholarly work in the area (Nidumolu*et al.,* 2009; Perrings, 2007). However, recent publications about sustainability are mostly related to the importance of the concept (Clift, 2007; Anderson, 2006), sustainable behavior (McKenzie-Mohr, 2013; Chan & Bishop, 2013) and green production and product(Baines *et al.,* 2012; Wang& Gupta, 2011). There appears to be very little conscious effort to investigate the impact of demographic and socioeconomic characteristics of the population on sustainable behavior, particularly in developing countries like Ghana. This, of course, is the main motivation for this study.

This study will acknowledge the fact that good work has already been done by several authors who investigated ideas like sustainable behavior and sustainable behavioral characteristics (Park & Ha, 2014; Chan & Bishop, 2013; Wan *et al.,* 2012). In an attempt to avoid gaps in the knowledge, this study will investigate the impact of demographic and socioeconomic characteristics on sustainable behavioral characteristics (defined by Osei-Fosu,2017 p. 68 - 84), instead of examining the impact of demographic and socioeconomic characteristics on sustainability (Annan, 2001). This will inform future study of the impact of demographic and socioeconomic characteristics on sustainable behavioral characteristics.

It is important to investigate the impact of demographic and socioeconomic characteristics of an African country on their sustainable behavioral characteristics for several reasons. First, the existing literature lacks information about the relationship between demographic and socioeconomic characteristics and its effect on sustainable behavioral characteristics, specifically in African countries. The present study will also enrich and give future literature a new dimension, since it aims to explore a never-used theoretical framework in Africa.

Second, knowledge of both the impact and the relationship between demographic and socioeconomic characteristics and sustainable behavioral characteristics of Africans, and more specifically Ghanaians, will help direct the policy makers and the country as to where resources should be invested in their quest for sustainable community, country, or continent. Thus, this study will help regarding resources and time optimization, in order for the country to make better informed decisions for sustainable development.

Third, this study will advance the sustainability agenda of Ghana based on an improved understanding of the profiles of the population, which in turn can explain the impact of the concept of sustainability on the population.

Finally, sustainability is on the program of many business heads in the society, consumers, educationists, governments, and investors, (Carroll, 1999; Palazzi & Starcher, 2006). Thus, exploring demographic and socioeconomic characteristics in relation to sustainable behavioral characteristics will help these "plan to do good" groups.

This study aims to adopt sustainable behavioral characteristics from Osei-Fosu(2017), which used theory of planned behavior (TPB) to develop these characteristics. TBP uses intention toward behavior, attitude, subjective norm, and perceived behavior control constructs to predict certain behaviors. The theory is a popular conceptual framework for human action (Ajzen, 1991), and has been used in numerous areas such as agriculture, biology, business, chemistry, ecology, finance, management, human resources, psychology, sociology, etc.

Considerable time and resources have been spent stressing the importance of sustainability, as well as the predicaments of lack of sustainability. The quest now is to understand how to get people to be sustainable (Park & Ha, 2014; Chan & Bishop, 2013; Wan *et al.,*2012). The world seems to agree that we must be sustainable as humans, given the outcomes of both our actions and in actions as noted in several works in literature and science, and given all the dangers the world faces today (Scharmer & Kaufer, 2013;Wiek *et al.,* 2011). This is supported by Kofi Annan's claim that the biggest challenge in this century is to transform sustainable development from abstract to real for all the people in the planet (Annan, 2001). His claim gains further support with the knowledge that 150 of the 196 countries in the world acknowledged by the UN are constantly in contact with UNDP and UNEP in relation to sustainability and sustainable development goals (UNDP, 2006). And so, more than three-fourths of the countries in the world acknowledge sustainability and sustainable development as a major solution to world troubles. This is further justified by the number of countries (over 190) that agree to the COP21 (Flôres Jr, 2015). Several studies are investigating the idea as to how to get people to be sustainable, some exploring behavior in relation to sustainability, and some exploring behavioral characteristics that impact sustainability (Park & Ha, 2014; Chan & Bishop, 2013; Wan *et al.,* 2012). The idea of understanding how to get people to be sustainable has led to the use of several behavioral theories in studies, with outcomes revealing several behavioral characteristics that impact sustainability (Park & Ha, 2014; Chan & Bishop, 2013; Wan *et al.,* 2012). Most of the literature seems to establish or acknowledge that sustainability is a new lifestyle or behavior, and has established behavioral characteristics that we know can impact sustainable behavior (Chen *et al.,* 2011; Osei-Fosu,2017). Some of the established characteristics that impact behavior, as well as sustainable behavior, are attitude, intention, subjective and personal norm, perceived behavioral control, knowledge, financial situation, skepticism due to past experience and so on (Chen *et al.,* 2011; Osei-Fosu, 2017).

Several authors have made use of different behavioral theories and have established the impact of some of these characteristics (attitude, intention, subjective and personal norm, perceived behavioral control, knowledge, financial situation, skepticism due to past experience) on behavior. For example, (Park and Ha, 2014; Chan and Bishop, 2013; Wan *et al.,* 2012) used TPB to determine recycling behavior, attitude, and intention. All the studies suggested that behavior (Chan & Bishop, 2013) or behavioral intention with regards to recycling is influenced by attitude, subjective norms, and perceived behavioral control.

Having established and acknowledged that sustainability is a lifestyle or behavior, and worthy of adoption (Chen *et al.,* 2011; Osei-Fosu, 2017), one of the concepts that warrants more attention is the impact of demographic and socioeconomic characteristics on sustainability or on behavioral characteristics that have been established to impact sustainability. Studies are practically nonexistent in Ghana that look at the impact of demographic and socioeconomic characteristics on sustainable behavioral characteristics such as attitude, intention, subjective and personal norm, perceived behavioral control, knowledge, financial situation, skepticism due to past experience and so on,. The primary importance of such a study is the enhancement of humanity to optimize time and other resources in their quest for a sustainable future. If a study of this nature is able to identify demographic and socioeconomic characteristics that impact sustainable behavioral characteristics, then policy makers can focus on these specific characteristics.

Credence to the importance of such a study is seen in the recommendation of more than twenty experts on population and development who convened at the International Institute for Applied Systems Analysis (IIASA) in Vienna. Per these experts, "any analysis of sustainable development must recognize the differences among people in terms of their impacts on the environment and their vulnerabilities to risk, which depend on their age, gender, location, and other socioeconomic characteristics." (IIASA, 2011, p. 9). The basis for the recommendations is to affirm that the characteristics and behaviors of people are at the heart of sustainable developmental challenges and the subsequent solutions. Aside from the Vienna expert recommendations, some studies have also considered demographic and socioeconomic characteristics in relation to behavioral characteristics, and have found significant effects on one another. For example, Cilliers *et al.,* (2012) found that differences in socioeconomic factors are important drivers of outcome variations in residential green infrastructures in cities in their urban biodiversity. But aside from highlighting the importance and need for

better understanding, almost no attention has been paid to the impact of demographic and socioeconomic characteristics on sustainable behavioral characteristics. Hence, this study wants to seize the opportunity and contribute to the existing literature, and help to advance the knowledge regarding demographic and socioeconomic characteristics of a population on their sustainable behavioral characteristics.

The remainder of the paper is structured as follows: Section 2 presents the methodology, including data sources and variable descriptions, statistical procedures for identification, and estimations; Section 4 is devoted to the presentation and discussion of the empirical results; and Section 5 concludes with a summary of key findings and policy implications.

Methodology

The study used a cross-sectional, survey research design with a questionnaire to collect data from Ghanaians on intention, attitudes, subjective norms (SN), PBC, personal norms (PN), knowledge, skepticism, and financial situation towards sustainability using systematic sampling with a five periodic interval between individual samples selected. The target population of this study were inhabitants of Kumasi, the second largest city in Ghana (Ghana Statistical Service [GSS]). According to GSS (2014, p5), Kumasi has a diverse population on tribal and ethnic grounds. The number of study participants of 510 was determined based on a-priori sample size calculation (Soper, 2015; Cohen, 2013).

A questionnaire was developed based on a literature review and input from an expert panel of six with specialties in sustainability, behavioral science, education, economics, statistics, and business. Two pilot tests were conducted to test the clarity and relevance of the questions and their direction, and the length of time needed to complete the questionnaire. Major revisions, such as dropping and reconstruction, were made to the questionnaire prior to distribution to the study sample.

The Statistical Package for the Social Sciences (SPSS) version 22 was used for data analysis. Descriptive statistics were computed for means, frequencies, and standard deviations. To enable the study to clean the data, correct miscoding, and present the data in a more meaningful way with any anomalies detected in the descriptive statistics, other statistical techniques were used. Techniques, such as plots and regression, were conducted to detect any non-linear relationships, outliers, and influential data points. Finally, multivariate analysis of variance (MANOVA) and post hoc test were considered to compare mean responses based on demographic socioeconomic characteristics.

Results and Discussion

Comparison of the demographic and socioeconomic characteristics of the sample per Ghana 2010 population census data from Ghana Statistical Service (GSS) indicated that the sample was broadly representative of the overall populations of Ghana, Ashanti region, and Kumasi. Of the 510 participants, 258 were females, representing 50.6%. In comparison, females represent 51.2% of the national population, 51.5% of the regional population, and 52.2% of Kumasi population (GSS, 2014). The sample clearly reflected the three populations under consideration in relation to gender, depicted in Table 1.

The study segmented the age groups into eight, ranging from 20 and below to 51 and above, with an interval of five between groups. In terms of age, once again the sample was a good representation of the three populations under consideration. GSS data merged all ages 25 and below. The proportions of the population 25 and under were 35.2%, 35.7% and 36.3% for national, regional, and Kumasi, respectively, while that of the sample was 34.9%. The other age groups also showed the sample to be representative of the population.

In terms of occupation and level of education, there were considerable differences between the population and the sample figures. For example, the sample population without any formal education was 4.1%, while the country was reported to be 28.5% and the region, 19.9%. Also, the sample population working in the government sector was 27.5%, while the country and region were 9.9% and 19.8%, respectively. Unfortunately, this study could not find data on occupation and educational level for Kumasi. It is very likely that if such data were available for the city under consideration, the sample population would have conformed to that of the country.

Table 1:Demographic Characteristics of the Survey Participants in Comparison with Population

Demographic Attributes	Sample		Population (%)		
Gender	Frequency	Percentage	GP	ARP	KP
Male	252	49.4	48.8	48.5	47.8
Female	258	50.6	51.2	51.5	52.2
Age:					
15 - 25	178	34.9	35.2	35.7	36.3
26 - 30	100	19.6	14.6	14.9	15.7
31 - 35	55	10.8	12.0	12.1	12.5
36 - 40	48	9.4	10.1	10.3	10.1
41 - 45	49	9.6	8.5	8.4	8.1
46 - 50	30	5.9	6.7	6.5	6.1
51 - Above	49	9.6	13.1	12.3	11.2
Educational Levels					
None	21	4.1	28.5	19.9	----
Primary	25	4.9	11.6	10.5	----
Middle School/ JSS/JHS	92	18	36.1	43	----
Form Five/ SSS/SHS	117	22.9	15.4	20	----
Tertiary	218	42.7	2.5	2.7	----
Masters	31	6.1	0.5	0.5	----
PhD	0	0			
Other	6	1.2	3.2	3.4	----
Occupation					
Government	140	27.5	9.9	19.8	----
Private	144	28.3	------	-----	----
Self Employed	101	19.8	35.1	37	----
Student	115	22.6	30.5	16.3	----
Other	9	1.8	24.5	26.9	----

Note: Sample data population is 18 years and above. All data reported under comparison is from Ghana Statistical Service, (2012, p 21-80) GP = Ghana population, ARP = Ashanti Reginal population, KP =Kumasi population.

For the variables, educational level and occupation, there seems to be a considerable difference between the national and regional population. Even though there appears to be a wide gap between the national population and the sample population, the gap between the regional population and the sample population is not that wide, comparatively. Also, cities normally are dominated by students, self-employed, government, and private workers, and Kumasi would not be any different.

Continuation of demographic characteristics of the survey participants as shown in [Appendix]supports the assertion that Kumasi is dominated by students, self-employed, government, and private workers. Of the 510 study participants, only 18.7% claim their work is agriculturally-related, clearly showing that most of the inhabitants of the city are involved in government and private sector occupations. Of those who have agriculturally-related work, only 14.7% said they use or have used genetically modified organisms, synthetic chemical fertilizers, pesticides, herbicides (Weedicide), insecticides, or intensive livestock. Thus, all things being equal, about 85.3% are not involved in unsustainable agricultural practices. For those who have subscribed to the unsustainable practices, the reasons given were for more profit, advice from authorities, easy operation, and others reasons [see: Appendix].

Regional and Sub-Metro distribution of survey participants in comparison with population [Appendix] also supports the fact that the sample population is an excellent representation of the total population. When comparing the percentage of population sample/region to percentage of total Ghana population/region, only the Ashanti region, which has 35.7% of the sample population and is 19.4% of the total population of Ghana, is an exception. There is almost a 2:1 ratio for Ashanti, whereas all others are very close to a 1:1 ratio. Since Kumasi, the research location, is the regional capital of Ashanti, it is reasonable and logical that the Ashanti region sample is higher than that of the population. Noticeably, the sample conformed exactly to the regional ranking of the most populated to the least. The same can be said about Sub-Metro ranking. Just as for region, population had slightly higher values than the sample, so does sub-metro, which is likely due to the variable "Other". Clearly the sample conforms to the population figure, indicating the sample population is a true reflection of the population.

Descriptive Statistics

Descriptive statistics of variables comprised of mean, median, standard deviation, variance, skewness, kurtosis, minimum, and maximum are presented in Table 2. All the variables had approximately equal mean and median (almost all less than 0.1 difference between their mean and median), indicating lack of skewness (von Hippel, 2005). None of the variables had a value of skewness above 0.85, making it no different from a variable drawn from a normal distribution (skewness = 0.0) (von Hippel, 2005). Excepting for Fin-Sit, Skepticism, and Sub-Norm which were found to have mild positive skewness, all other variables were found to have mild negative skewness. Values of kurtosis for all variables were within the acceptable range considered for normal distribution (kurtosis = $\pm$ 2.0) (George &Mallery, 2010).

Table 2: Descriptive Statistics (N = 510)

Variable	Mean	Median	Standard Deviation	Variance	Skewness	Kurtosis	Min.	Max.
Attitude	3.590	3.600	0.5840	0.341	-0.845	1.167	1.2	5
Intention	3.538	3.600	0.5862	0.344	-0.294	0.139	1.2	5
PBC	3.608	3.800	0.7666	0.588	-0.698	-0.060	1	5
Sub-Norm	3.057	3.000	0.6797	0.462	0.356	-0.101	1	5
Per-Norm	3.809	3.800	0.6183	0.382	-0.511	0.161	1.6	5
Skepticism	2.949	3.000	0.8161	0.666	0.123	-0.501	1	5
Fin-sit	2.869	2.800	0.6399	0.410	0.106	-0.225	1.2	4.6
Knowledge	11.235	12.000	2.5431	6.467	-0.550	-.0172	2	16

NB: Sub-Norm is Subjective Norm; Per-Norm is Personal Norm; Fin-sit is financial situation

Correlation Matrix

Table 3 presents a correlation matrix of all the study variables. Most of the variables are correlated significantly with one another with the exception of financial situation (which is not significantly correlated with Attitude, PBC and Per-Norm), skepticism (which is not significantly correlated with Attitude), and Per-Norm (which is not significantly correlated with Sub-norm).

Most correlations conform to the study hypothesis with the exceptions of Knowledge and Intention. The expectation was that Ghanaians sustainable knowledge would have a positive impact on their sustainable behavioral intention. Knowledge and intention, however, demonstrate a significant negative correlation (-.175). Also, the study posited a negative relation between Skepticism and behavioral intention, but that too was significantly positive (.249). The same outcome is seen for financial situation and intention (.165). Apart from these, the rest did conform to the expected, but correlations were far lower than anticipated, ranging from .003 to .478. Some of these were theoretically and logically justifiable to be small. For example, Subjective norms and Personal norms have insignificant correlation of .003. This is justifiable in that if one has strong personal norms, then one should not be significantly impacted by social influence, which is subjective norm. A higher significant correlation coefficient between variables like Attitude and Intention would be expected. And even though it was significant, the coefficient was small (.255).

Table 3: Correlations between Model Variables (N = 510)

	□	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Attitude	.110	1							
(2) Intention	.225	.255**	1						
(3) PBC	.612	.183**	.101*	1					
(4) Sub-Norm	.245	.126**	.313**	−.145**	1				
(5) Per-Norm	.111	.363**	.169**	.478**	.003	1			
(6) Skepticism	.239	.011	.249**	−.245**	.388**	−.146**	1		
(7) Fin-sit	.245	.041	.165**	−.050	.229**	.044	.357**	1	
(8) Knowledge	.371	.221**	−.175**	.335**	.250**	.322**	−.364**	−.260**	1

α = Cronbach's Alpha, ** & * mean correlation is significant at the 0.01 and 0.05 level (2-tailed) respectively.

Discussion of Findings

It was found [see: Appendix] that Ghanaian females living in Kumasi are more skeptical towards sustainability due to past experience than their male counterparts. There is literature to support the argument that females are more skeptical to new ideas than their male counterparts. Harris *et al.,* (2006) established that females are less likely to take risk with any new idea compared to males. This seems to gain support from Lamb *et al.,* (2012, p 19-11), who established that "females have a higher level of apprehension and are more skeptical about e-commence than males", which is also a new idea. However, regarding sustainability, Gould and Hosey (2007, p 131) established that "statistically, women are much more likely than men to support environmental causes—through voting, volunteering, activism, advocacy, charity, recycling, consumer choices, lifestyle habits, business decisions, and investments." It must be noted that the study by Gould and Hosey (2007) took place in the US, where the embracement of sustainability by women as compared to men is not confounded by past experience, as is the case in Ghana, where the idea of sustainability is a new idea, relatively speaking.

It has been established by several disciplines (Miller& Miller, 2011; Diaz, 2007) in the literature that males have a higher degree of perceived behavioral control than females, but no study was identified in the field of sustainability. Thus the finding whereby Ghanaian males living in Kumasi are perceived to have more control over their acceptance of sustainability compared to their female counterparts is a new one in the field of sustainability. This study acknowledges the finding of a single study in another field that established females have a higher degree of perceived behavioral control than males (Emanuel *et al.,* 2012).

It has been established by UNESCO (2002) in most of their current publications, for example, "Education for Sustainable Development", that higher education is essential, and more or less, a prerequisite for sustainable development. Nelson Mandela once said "Education is the most powerful weapon you can use to change the world". Based on the aforementioned, the study investigated as to whether or not educational levels impact sustainable behavioral characteristics. It was found [see: Appendix] that Ghanaians with Tertiary and masters (higher education) living in Kumasi experience stronger feelings of obligations within, prompting them to engage in sustainable practices more so than those with No education or lower educational level. This finding conforms to that of Jansson and Dorrepaal (2015), where they found that higher education was related to personal norms with regard to climate change issues.

Knowing that formal education has a significant impact on personal norm towards sustainability, this study took further interest to investigate the link that formal education has on sustainable knowledge. Ghanaians with Tertiary and masters (higher education) living in Kumasi have higher sustainable knowledge compared to those with no education or lower educational level. However, those with tertiary education did not have any significant mean difference when compared to those with no education, unlike those with masters. This gives empirical support to the study by Brazier (2014) that higher education improves sustainability knowledge. Both UNESCO (2002) and Brazier (2014) support the notion that formal education has a critical role to play in sustainable development and embedment of sustainability. Even though there is a statistically significant mean difference between those with higher education and those with lower or no education in terms of sustainable knowledge and personal norms, UNESCO (2006, p. 12) has established that "more highly educated people with higher incomes consume more resources than poorly educated people who tend to have lower incomes. In this case, more education increases the threat to sustainability". Could outcomes be the same for Ghanaians in terms of financial situation? It was found[see: Appendix] that the financial situation of Ghanaians with Tertiary and masters (higher education) living in Kumasi has less restriction on their intention to be sustainable as compared to those with no education and lower education. This clearly contradicts the UNESCO (2006) study finding.

Additionally, this study was interested in the impact of education level in relation to perceived behavioral control towards sustainability, given the public health study by Pooreh and Nodeh (2015) which established that higher education leads to a high degree of perceived behavioral control. Could this be the same for the field of sustainability? In fact, it was found that Ghanaians with Tertiary and masters (higher education) living in Kumasi perceived to have more control over their acceptance of sustainability as compared to those with lower or No education.

Finally, this study found [see: Appendix] that participants with Tertiary and masters (higher education) living in Kumasi are less skeptical towards sustainability due to past experience than those with No education and lower education. Surprisingly, there has been no study that has investigated the difference in educational level on skepticism due to past experience in relation to sustainability. However, studies (Solar City, 2013; Stevenson *et al.,* 2014) were found that investigated educational level on skepticism in relation to sustainability. Solar City (2013) established that consumers with more education are less skeptical in renewable energy, while Stevenson, et al. (2014) highlighted that those with low education enter sustainable conversation with some level of skepticism. The findings of this study agree with the findings of Solar City (2013) and Stevenson *et al.,* (2014).

It has been established by Macura *et al.,* (2011) that attitude towards protection of forests in India is different, depending on the area in which one lives. This study found that those residing in Nhyiayeso sub metropolitan assembly have a better attitude towards sustainability than their counterparts in Asokwa sub-metro. Moreover, Ghanaians in the age range of 26-30 living in Kumasi were perceived to have more control over their acceptance of sustainability as compared to those within the age range 51 or above. Notably, these two age ranges had a significant mean difference between them; the rest did not. None the less, no previous studies could be found to confirm nor contradict these findings.

The study set out to investigate whether different occupations had significant mean differences between their behavioral characteristics in relation to sustainability. The study found[see: Appendix] that those living in Kumasi who work for the private sector have better intention towards sustainability than those working in the government sector, students, and self-employed. Also, intention to be sustainable by those living in Kumasi who are self-employed, as well as those in private sectors, were restricted more by their financial situation as compared to those working in the government sector and students. Self-employed living in Kumasi have worse attitude towards sustainability than those working in the government sector, students, and the private sector. Ghanaians living in Kumasi working in the government sector perceived to have more control over their acceptance of sustainability as compared to those who are self-employed or in the private sector, while students perceived to have more control than those in the private sector. Ghanaians living in Kumasi who work in the private sector have higher sustainable knowledge as compared to those who are self-employed and in the government sector, while those in the government sector are more knowledgeable sustainably than students. Ghanaians living in Kumasi who work in the private sector are more skeptical towards sustainability due to past experience as compared to those who are self-employed, in the government sector, and students. Finally, Ghanaians living in Kumasi who work in the private sector perceived to have more social pressure from significant others to be sustainable than their counterparts who are self-employed orin the government sector. All these findings [see: Appendix] support the work of Lebel *et al.,* (2014) and Curtin and Busty (1999) that indeed different occupations and sectors can have different behavioral characteristics towards sustainability.

Limitations

Questionnaire scales were developed for the purpose of the study. Although a pilot study was performed to refine the questionnaire, the questionnaire scales were not cross-validated using other instruments. The internal consistency of the questionnaire as indicated by Cronbach alpha coefficients was low. This may reflect the fact that this study investigated broad range sustainability scales that would be expected to be multidimensional rather than focused on a single construct. It is worth noting that social scientists have recognized two categories of psychological scales: 1) Reflective scales, whose items are expected to be highly correlated, but items on the scale are from a larger domain of possible items (Diamantopoulos & Siguaw, 2006), and 2) Formative scales, whose components are not necessarily correlated, however all components of the underlying construct must be identified and measured by the scale items (Diamantopoulos & Siguaw, 2006). In the case of the present study, the questionnaire scales may be viewed as formative rather than reflective. However there would need to be further development of the study instrument so that all relevant constructs are taken into account.

Conclusion and Recommendation

It was found that the sample clearly reflected the three populations under consideration in relation to gender, occupation, and age. The study, therefore, established that the sample is a fair representation of the Kumasi population.

Almost 79% of participants had more than half of the Knowledge questions correct. Thus, sustainable knowledge is not the issue of non-sustainability in this research location.

This study has confirmed that there is a significant connection between Ghanaians' demographic and socioeconomic characteristics and their sustainable behavioral characteristics. It was found that an improvement in education level would enhance sustainable knowledge, their personal norm, and perceived behavioral control towards sustainability, and reduce their skepticism towards sustainability due to past experience. It was found that male and age range, 26-30, have better perceived behavioral control towards sustainability than female and all other age ranges, respectively. Males are more skeptical towards sustainability as compared to females.

Finally, it was also found that different occupations have different intention, attitude, perceived behavioral control, Knowledge, and skepticism towards sustainability, while different occupations intention to be sustainable are restricted differently due to financial situation. These findings provide certain implications. Theoretically, they support the premise that understanding the demographic and socioeconomic profile of a population towards sustainability is imperative to improve sustainable behavior. Practically, the human quest for a sustainable world undoubtedly needs an innovative balance between age range, gender, educational level, occupation, and communities.

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Appendix
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