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## **Assessment of Environmental Consciousness among Patrons in Selected Academic and Public Libraries in Lagos Metropolis**

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### **Introduction**

Environmental consciousness encompasses a lot of engagements and actions either to reverse or repair the damage done to the environment. As part of ensuring safe living, "going green," has therefore become an intensifying international and multidisciplinary concern in contemporary society (Fallik, Soper and Sparks, 2012). The United Nations has been actively involved in environmental protection through the Eco Day or World Environment Day celebrated annually in over 143 countries every 5<sup>th</sup> day of June since 1974. The Eco Day is the United Nation's main flagship campaign for raising awareness on protection of the environment from pollution, global warming, climate change and so forth. With the increasing emphasis on prevailing poor environmental conditions in most countries, environmental sustainability is a major area of research and concern in this current dispensation (Kurbanoğlu and Boustany, 2014).

In an attempt to lessen the damage done to the environment by man, a growing body of research has sought to establish and identify appropriate behaviour that should be exhibited towards the environment. This habit is termed Pro-Environmental Behaviour (PEB). Pro-environmental behaviour according to Akpan et al. (2003) as cited in Latif, Omar, Bidin, and Awang (2013) involves consciously applying an environmentally sound and socially responsible ethics to lifestyle choice. Previous scholars have argued that pro-environmental behaviour such as waste recycling, use of non-toxic substances, energy conservation, waste avoidance, transportation and mobility serve as foot path to environmental sustainability (Turaga, Howarth and Borsuk, 2010). Nevertheless, there are challenges such as cost, inconvenience, and lack of time in observing PEB among individuals (Macovei, 2015). It was also reported in literature that individuals who have time, money, and knowledge are more likely to adopt and engage in pro-environmental behaviour (Schultz and Oskamp, 1996). Narratives from literature also indicated that environmental knowledge affects the inculcation of environmental values, and this in turn affects pro-environmental behaviour (Latifet. al., 2013). Environmental knowledge and positive behaviour can be increased using appropriate media sensitisation and the introduction of environmental education (Abiolu, 2018).

Scholars such as Kurbanoğlu and Boustany (2014) note the relevance of green information literacy instruction on environmental behaviour. The library and information science discipline through IFLA's Environmental Sustainability Special Interest Group (ENSULIB) has also taken keen interest on issues of environmental sustainability by demonstrating many green ethics to make the environment safe for living. Consequent upon this, the concept of green libraries have evolved in libraries. According to McElrath and Sutherland (2015:14), green libraries are "those that apply environmentally friendly policies and practices". Such environmentally friendly initiatives include but are not limited to development of eco-friendly buildings, that is buildings that generate as much electricity as they consume, use of energy saving bulb, green operations and practices: subscription to e- books, journals, magazines and newspapers instead of the print versions and having kindles or other e-readers, and provision of energy efficient laptops instead of desktops; green programmes and services; green information systems and green collections (Kruse, 2011; Kurbanoğlu and Boustany, 2014; Stark, 2011).

Students are fairly concerned about the protection of the environment and do not feel adequately informed about the issue (Balog and Siber, 2017). A review of preceding studies indicated that the state and pattern of environmental awareness among library patrons has not received appropriate research attention. This is considered important in view of the cultural and operational differences between libraries in the developed and developing nations. This study seeks to provide some thoughts for today's information professionals in taking a forward looking initiative into offering information services that are targeted towards the green library movement. This paper explores the practice of distinct dimensions of environmental consciousness among library patrons using the self-determination theory as the theoretical framework underpinning this research. This study is important because Goal 3, 6, 13 and 15 of the Sustainable Development Goals (SDGs) are interlinked with environmental sustainability. Moreover, it has implications for the design of policies intended to influence pro-environmental behaviour among library patrons as well as other citizenry. In practice, it has serious implications for libraries and librarians in prompting ingenious green programs in their communities; providing resources and information on green ethics; and serving as centre for green education.

Lagos, the commercial capital of Nigeria is the largest and most environmentally complex metropolitan area in Africa with about 21 million inhabitants (Campbell, 2012). In terms of land mass, it is one of the smallest states in Nigeria, yet the most industrialised. It is described as an emerging megacity in Nigeria, yet subjected to several predictions of the negative impacts of changing climatic conditions due to prevalent air pollution. (Komolafe et.al, 2014). Lagos metropolitan area according to Adeyemo, Oketola, Adetula and Osibanjo (2013) covers Lagos Island, Lagos Mainland, Mushin East (Shomolu), Mushin West, Ikeja, Badagry, Ikorodu, Agege, Alausa, Isheri and Ketu.

### **Research Questions**

The study was guided by the following research questions:

1. What is the major environmental issue in Lagos metropolis?
2. How environmentally conscious are library patrons in academic and public libraries?
3. What value do library patrons place on the environment?
4. Is there any motivation guiding library patrons' awareness towards the environment?
5. How can futuristic libraries sensitize patrons on being more environmentally responsible?

### **Literature Review**

Environmental consciousness refers to the ability to understand the environment and solve related environmental problems (Bandhu and Ramanathan 1982). It is also a mental attitude and behaviour of man towards keeping the environment clean (Rim, 2009). It depicts the attitudinal (or psychological) dimension of pro-environmental behaviour (Lafuente and Sánchez, 2010). More recently, the environmental consciousness signifies a reduction of the burden on the environment for the purpose of future generations (Scherer, 2013). Environmental awareness is used synonymously with the term environmental consciousness. Climate change is perhaps the highest global environmental challenge facing the world today (Maponya, Mpandeli and Oduniyi, 2013). Its cause according to Odjugo (2011) is attributed to anthropogenic (human) and natural (bio-geographical) processes. Some of the human activities leading to climate change come from poor handling of industrial waste, poor solid waste management, gas emission from vehicles and deforestation (Oloke, Ijase, Ogunde, Amusan and Tunji-Olayeni, 2013). Climate change threatens the quality of the environment by bringing about an upsurge in sea level, tropical cyclones, heavy precipitation, extreme heat, drought, hailstorm, fire outbreak as well as health, economic and social impacts (Oloke et al, 2013).

Another societal problem constituting a nuisance to the environment is air pollution. Previous studies addressing issues on the environment revealed that many developed and developing countries are still contending with an identified air pollution and its health risk on the citizenry (Carducci et. al., 2017; Komolafe et al., 2014). Some of the health risks associated with air pollution include premature death arising from heart and respiratory diseases, blood vessels conditions and strokes, and lung cancer (Carducci et al., 2017). In most developed countries, air pollution arises from transport, energy, industry, heating systems, agriculture and wastes treatment. Major sources of air pollution in Lagos metropolis as over-population, dump sites, open incinerators, vehicular emission, chemicals, industrial wastes and fumes from generators (Komolafe et al., 2014).

Waste management remains an insistent challenge to the environment. The volume of wastes generated annually in Lagos is on the high side with plastic bottles being the highest (Adekomaya and Ojo, 2016). Despite series of efforts in achieving a cleaner Lagos, people still drop their waste along roadsides, thereby littering the environs with domestic waste and non-biodegradable materials such as plastic bottles, polythene bags and sachet water nylons. Some scholars state that lack of eco-friendly consumption patterns among individuals, the growing population, lack of fund to acquire treatment and waste disposal facilities, political, economic and social factors remain impediments to proper waste management in Nigeria (Desa, Kadir and Yusoooff, 2012; Otitoju, 2014, Taufique, Siwar, Talib, Sarah and Chamhuri, 2014). Recycling of wastes has been recommended as an antidote to poor solid waste management, however, Otitoju (2014) notes that there is a lack of standard waste collection strategy in Lagos metropolis.

The hazardous effect of climate change, air pollution and poor solid waste management on the environment can be curbed through awareness and education among residents (Sridhar, 2016). Otegbulu (2011) adds that energy saving actions such as installation and use of energy efficient electrical appliances also helps in minimising the effect of climate change on the environment. The author notes that energy saving initiatives in developing countries like Nigeria remains low due to lack of access to appropriate technology, funds and lack of awareness on the need to adopt energy efficient measures. The disposition of man towards the environment is guided by socio-psychological and socio-cultural values (Asilsoy, 2012). Social psychological variables include attitude towards environmental issues, and involvement in activities that help reduce environmental degradation, which is popularly known as pro-environmental behaviour. Social psychological variables generally have stronger connotations with responsible behaviour than do demographic variables, however, situational factors such as income and parental education could strengthen or weaken attitude towards the environment (Hines, Hungerford and Tomera, 1987). Environmental consciousness among individuals is influenced by level of education and income (Chanda, 1999). However, Hampel and Holdsworth (1996:27):

“... relationship with the environment is “shaped by culture - by our identity or notion of what we are and our social and material goals, and by the means we use to achieve such goals. That is our consciousness of the environment is related to self-consciousness, our understanding of ourselves and the part we see ourselves playing in society”

Differences exist between the western world and third world in terms of concern about the environment (Mitsuda, 1992). For instance, Australia has clear policies towards waste management through the ACT Waste Management Strategy 2011–2025. This policy ensures recycling of over 70% of waste generated, and efforts are on-going by the Australian government to ensure that zero recoverable waste is sent to landfill. Similarly, in Asia, since 2007, Malaysia through the parliament has adopted a new bill targeted towards raising environmentally conscious citizenry, and university students are not left out because many universities have successfully implemented a ‘greening’ university campus initiative (Smyth, Fredeen and Booth (2010) to encourage proper waste disposal among students. The disparity in the display of pro-environmental behaviour between people from developing countries and developed countries has been attributed to over-population, inability of government towards being responsive to environmental issues, lack of education, and technological problem and individual consumption (Dunlap, 1994).

Previous scholars such as Komolafe (2014) argued that majority of residents in Lagos are not conscious of the consequences of their actions on the environment. Singh (2016) examined the level of environmental consciousness among undergraduate students of District Ambala. Findings revealed that the students are environmentally responsible and no significant difference was found between the level of environment consciousness and stream of study. The study also found a high mean score in level of environmental consciousness among those in science stream as compared with arts and commerce students. They adduced that this could be due to the exposure of science stream students (than non-science stream students) to environment related contents and activities in their curriculum.

Abbas and Singh (2014) note that a higher proportion of university students possessed high level of environmental consciousness but exhibited low level of participation in environmental activities. Desa, Kadir and Yusoooff (2012) used the Theory of reasoned action (TRA) and theory of planned behaviour (TPB) as framework for predicting environmental behaviour among undergraduate students from eight

different faculties at the National University of Malaysia. Findings showed that a little above half of the respondents are environmentally conscious. Further findings revealed that less than half of the students showed positive attitude towards waste management.

Ifegbesan (2010) found significant relationships between demographic variables such as sex, age and class and level of environmental consciousness. The discourse in literature on correlates of environmental consciousness and environmental behaviour is tended towards two school of thoughts. One school believes that women are significantly more likely than men to be concerned with environmental problems. This is because often times, girls are made to carry out sweeping and cleaning activities and other domestic chores (Raudsepp, 2001).

Oloke with others (2013) assessed the level of environmental consciousness among residents in three local government areas in Lagos State based on appliance usage and energy consumption. They submit that the manner and use of household appliances and energy consumption by respondents indicate lack of knowledge on the impact of these activities on the environment. The authors recommended in addition to raising awareness on environmental issues, there is a need for government of developing nations to invest in alternative energy sources that are environment-friendly such as biomass, natural gas, wind and solar energy. Similarly, Otegbulu and others (2011) examined environmental behaviour of Lagos residents based on energy efficient practices and awareness among residents in four metropolitan local government areas of Lagos state. Findings revealed that residents have poor attitude towards energy efficiency. Further findings showed that majority of the respondents forget to put off electrical appliances when not in use, and many rely on purchase of fairly used appliances which are not energy efficient.

Environmental values are “defined as an individual’s orientation towards the environment and the natural world” (Latif et al. 2013: 868). According to scholars such as Kollmuss and Agyeman (2002) and Price and Pitt (2011) environmental values are internal factors influencing environmental behaviour. It has been argued that individuals with more positive environmental values are more likely to have higher levels of environmental behaviour (Asilsoy, 2012). At the National University of Malaysia, several efforts have been put in place to raise the consciousness of the university community on waste management. According to Desa, Kadir and Yusooff (2012), some of these efforts are targeted towards raising awareness and educating lecturers, students, staff, hostel operators, cleaners, security staff and Canteen/cafeteria operators on environmentally responsible behaviours through a programme known as Integrated SWM UKM Campus towards “Zero Waste Campus”, a programme based on the Waste Hierarchy – reduce, reuse. Some of the efforts include briefing staff on the importance of proper waste management and recycling; holding special programmes such as recycling week; e-waste recycling day, no waste day, flora green message to all staffs and exhibitions and awareness talks regarding the greening of the campus and the Zero Waste Club. The study conclude that it is imperative for universities to produce environmentally responsible graduates. The study of Tabernero and Hernández (2011) considered the rationale for eco-habits. The authors posit that there are two approaches to exhibiting eco-behaviour. These are external and internal approaches. The external approach explains that people engage in eco-habits to gain maximum benefit for themselves, maintain custom or to satisfy a social norm. Hartig, Kaiser and Bowler (2001) argued that from the internal approach perspective, the action of individuals towards the environment is driven by internal motivations, values, beliefs, or attitudes. However, such internal motivations are drawn from personal interest and satisfaction (Kalinowski, Lynne and Johnson, 2006). This internal motivation is referred to as intrinsic motivation and its overall aim is to satisfy psychological needs (Kasser and Ryan, 1996).

The narratives among libraries on responsiveness to environmental sustainability have been overly directed towards implementation of green ethics. Although, these greening initiatives contribute to environmental sustainability in libraries, it is imperative for the library professionals to play prominent roles in increasing library patrons’ awareness, sensitivity and responsibility towards the environment by acting as eco-educators (Hauke and Werner, 2013; Oyelude and Alabi, 2013). However, Hauke and his colleague suggest libraries can help their patrons develop pro-environmental behaviour. In their article, the authors highlighted several examples on the eco-behaviours displayed by some of the libraries in developed countries. The examples include provision of secure bicycle racks as done in Amsterdam Public so that patrons need not gain access to the library using their cars. Another approach include green library management (green procurement) such as the use of eco-labels;

display of environmentally-themed literature on a separate shelf and taking proper statistics on usage of such resources.

## Theoretical Framework

The Self Determination Theory (SDT) was used as the theoretical underpinning for this study. SDT has been found to predict behaviour well (Ryan and Deci, 2000; Sweeney, Webb, Mazzarol and Soutar, 2014). It is one of the theories of moral motivation in social psychology. The theory suggests that when people feel more autonomous about their behaviour, they are likely to find a particular issue more interesting or personally important. SDT has three psychological constructs: competence, autonomy and relatedness. Competence, a construct that extends beyond self-efficacy, signifies the desire to efficiently interact with one's environment with a view to achieving desired outcome (Deci and Ryan, 2000; Vallerand and Ratelle, 2002). The ability to reflect volitional control, self-organised experience and behaviour consistent with one's self is known as autonomy (Deci and Ryan, 2000). Autonomous motivation refers to motivation resulting in behaviours that are voluntary and willing as a result of the ability to recognise and internalise the value of the behaviour (Vandercammen et al., 2014). In other words, autonomy spans across choice and control and it is interlinked with intrinsic motivation. Relatedness refers to the psychological need for a sense of belonging, which is fulfilled when one feels connected with others (Schuler, Brandstatter and Sheldon, 2013). Other social psychology theories often used to explain environmental behaviour are Norm-activation theory (Schwartz, 1977), Value-belief-norms theory (Stern et al., 1999) and the Theory of planned behaviour – TPB (Ajzen, 1991).

## Method

The study adopted the positivism research paradigm, which allows the use of quantitative approach to research inquiry. Questionnaire was used as the instrument for data collection. The study was conducted in academic and public libraries within Lagos metropolis. The stratified sampling technique was used. Essentially, Lagos State was first stratified into local government areas (LGAs) and three local government areas were selected out of the existing twenty in the State. The local government areas of choice were Lagos Mainland, Ikorodu and Ikeja. What informed the choice of these LGAs was the basis that they have both academic and public libraries. The study population comprises library patrons in seven libraries in Lagos metropolis (University of Lagos (UNILAG) Library, Yaba College of Technology (YabaTech) Library, Herbert Macaulay Library (You Read), Lagos State Polytechnic Library LASPOTech (Ikorodu Campus), Ikorodu Public Library, Lagos State College of Medicine (LASUCOM) Library and Lagos State Library Board).

Using Saunders, Lewis and Thornhill's (2012) table on determination of sample size, a sample size of three hundred and eighty three (383) library patrons were chosen at 95% confidence level. Before the administration of the questionnaire, a pilot study was carried out at the Federal College of Education (Technical) Akoka, Lagos and Ipaja Public Library. Cronbach's alpha coefficient was used to determine the internal consistency and reliability of the multiple item scales. The least Cronbach's Alpha value returned for the variables in the questionnaire was 0.79, suggesting a high inter-item reliability (see Table 1). Questionnaire items on environmental consciousness were adapted from Hiramatsu, Kurisu and Hanaki (2015). Library patrons' environmental consciousness in daily activities was measured using a four point Likert Scale ranging from strongly disagree, disagree, agree and strongly agree. The values were set at 4 for strongly agree, 3 for agree, 2 for disagree and 1 for strongly disagree. The data collected from the survey was quantitative in nature. Data was collected by the researcher between April and May, 2018. At the end of the survey, quantitative data was analysed using descriptive and inferential statistics. Out of the 383 copies of the questionnaires used, 299 (74 %) were returned and found usable.

**Table 1: Cronbach's alpha correlation for major variables**

Construct	Cronbach's alpha	Items in Constructs
Environmental consciousness	0.87	12
Environmental values	0.84	3
motivation	0.79	10

strategies	0.84	6
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### Results: Response Rate

Out of the 383 questionnaires administered to library patrons in the selected libraries, 293 were completed and returned, giving a response rate of 76.5%. Table 2 presents the actual number of copies of the questionnaires administered in each of the libraries and the number returned.

**Table 2: Response Rate from the Survey (N = 293)**

Library	LGA	Type of Library	Copies of Questionnaire Administered	Copies of Questionnaire returned	Response rate (%)
UNILAG Library	Mainland	Academic	61	45	73.8
Yabatech Library	Mainland	Academic	62	42	67.7
LASPOtech Library Ikorodu	Ikorodu	Academic	55	43	78.2
LASUCOM Library	Ikeja	Academic	51	39	76.5
Herbert Macaulay Library (You Read)	Mainland	Public	52	44	84.6
Ikorodu Public Library	Ikorodu	Public	52	42	80.8
Lagos State Library Board	Ikeja	Public	50	38	76.0
Total			383	293	76.5

### Demographic Characteristics of Respondents

The demographic characteristics of the respondents showed that majority of them are females (61.2%). A majority of the respondents were also between 26- 30 years category with 34.4% as the highest percent. This was followed by those in 21-25 years age category. The educational profile of the respondents revealed that nearly half of the respondents are pursuing their first degree in the university while 110 (36.8%) are pursuing the Higher National Diploma (HND) (see Table 3).

**Table 3: Demographic Characteristics of respondents**

Demographic characteristics	Freq.	Percent
Sex		
Male	116	38.8
Female	183	61.2
Age (years)		
16-20	19	6.4
21-25	75	25.1
26-30	103	34.4
31-35	54	18.1
>35	48	16.1
Educational Profile		
OND	25	8.4
HND	110	36.8
First Degree	128	42.8
Others	36	12.0

### Major Environmental Issue in Lagos Metropolis

Respondents were asked to indicate the most disturbing environmental issue in Lagos metropolis. Findings showed that a majority of the respondents indicated waste disposal as the most disturbing environmental issue, followed by air pollution and then flooding (See Figure 1).

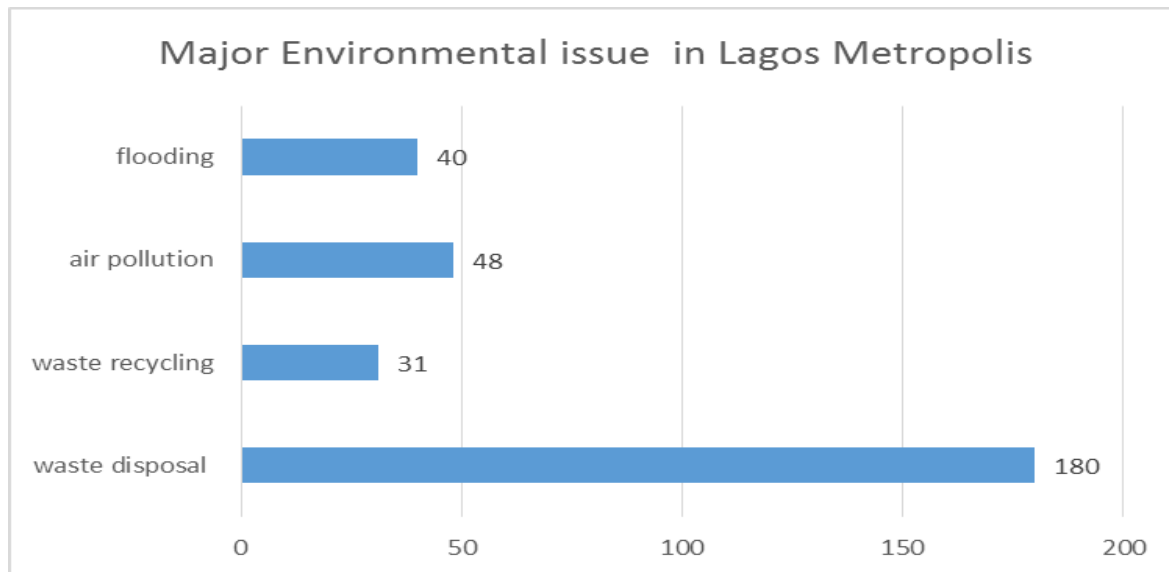


Figure 1: Major Environmental issue in Lagos metropolis

### Environmental Consciousness among Library Patrons

Table 4 shows the results on environmental consciousness among library patrons. Respondents from both academic and public libraries agree that there is not enough useful information on adopting pro-environmental behaviours (PEBs). Respondents from both academic and public libraries also agree that they do not particularly care about environment when purchasing items. Further findings also showed that respondents avoid pro-environmental behaviours because they do not want to inconvenience themselves (See Table 4). With  $p > 0.05$ , there is no significant difference in environmental consciousness pattern of patrons academic libraries and those in public libraries. This result indicates library patrons' attitude towards the environment.

Table 4: Environmental Consciousness among Library Patrons

Statement	Academic		Public		Comparison	
	Mean	SD	Mean	SD	t-statistics	p-value
My behaviour towards the environment is based on custom rather than environmental consciousness	2.00	0.87	2.02	0.28	0.208	0.835
In reality, I do not particularly care about the environment	1.64	0.80	1.82	0.80	1.85	0.064
I do not understand why people should be concerned about the environment	1.47	0.66	1.53	0.72	0.748	0.455
Individual action will not improve the environment	1.67	0.89	1.74	0.97	0.595	0.552
I do not think my behaviour is responsible for climate change	2.08	0.92	2.11	0.97	0.416	0.678
When purchasing items, I do not particularly care about environment	2.56	0.85	2.48	0.86	0.721	0.471
I avoid pro-environmental behaviours because I do not want to inconvenience myself	2.50	0.87	2.41	0.86	0.702	0.483
There is not enough useful information on adopting Pro-Environmental behaviours (PEBs)	2.72	0.97	2.50	1.02	1.896	0.059
There are more important things than environmental issues	1.90	0.82	1.91	0.92	0.081	0.936
Honestly, I do not know what behaviours are good or bad for the environment.	1.90	0.84	1.87	0.85	0.268	0.789
I display PEBs depending on whether others are paying attention to my behaviour	2.03	0.85	2.00	0.85	0.317	0.751



I do not care about environmental issues even if my behaviour will destroy the earth in future	1.79	0.95	1.75	0.90	0.389	0.698
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#### Environmental Value among Library Patrons

Table 5 shows the results on environmental value. The result shows that a majority of the respondents from both academic and public libraries agreed with the statement that they know what to do in protecting the environment, but they do not always pay attention. Respondents from public and academic libraries differ on knowing what to do to protect the environment and paying attention ( $t=2.03$ ,  $p<0.05$ ).

**Table 5: Environmental Value among Library Patrons**

Statement	Academic		Public		Comparison	
	Mean	SD	Mean	SD	t-statistics	p-value
I know what I should do in protecting the environment and I pay attention	2.03	0.88	2.24	0.90	2.032	0.043
I know what to do in protecting the environment but I do not always pay attention	2.82	1.00	2.72	1.01	0.846	0.398
I do not know what to do in protecting the environment and I am not interested	1.66	0.78	1.68	0.90	0.149	0.882

Respondents were asked to indicate motivation towards environmental consciousness (see Table 6). Findings showed that a majority of the respondents from both academic and public libraries agreed with the statement they are contributing to the collective good of the society. No significant difference exists between patrons from academic and public libraries in terms of motivation towards environmental consciousness ( $p>0.05$ ).

**Table 6: Motivation towards environmental consciousness**

Statement	Academic		Public		Comparison	
	Mean	SD	Mean	SD	t-statistics	p-value
I engage in Pro-environmental behaviour (PEB) because:						
I am doing something worthwhile	2.78	0.93	2.75	0.94	0.689	0.491
I am contributing to the collective good of the society	2.88	0.99	3.00	0.95	1.012	0.313
I have the possibility of receiving a reward	1.94	1.01	1.95	1.00	0.009	0.993
taking care of myself and the environment are inseparable	2.68	1.05	2.70	0.98	0.205	0.838
I want to gain social acceptance	2.59	0.99	2.68	1.02	0.853	0.394
I want to avoid penalty	2.56	1.00	2.69	1.05	1.105	0.270

With mean score values that are above 3, all the parameters set to measure the strategies libraries could use to sensitise patrons to become more environmentally responsible ( see Table 7). Respondents from public libraries agree that libraries should make eco-friendly information accessible and awaken interest of citizens through regular exhibition on themes relating to the environment, while those from academic libraries agree that libraries should organise special events such as talk shows on Eco day to disseminate goals of environmental sustainability on environmental issues. With  $p>0.05$ , no significant difference was found between patrons in academic and public libraries in terms of strategies libraries could use in improving environmental consciousness among patrons.

**Table 7: Strategies libraries can use to sensitise patrons in becoming more environmentally responsible**

Statement	Academic		Public		Comparison	
	Mean	SD	Mean	SD	t-statistics	p-value
Making eco-friendly information accessible	3.01	1.23	3.96	1.25	0.372	0.710
Awaken interest of citizens through regular exhibition on themes relating to the environment	3.31	1.29	3.83	1.37	0.035	0.972
Organise awareness campaign on waste reduction and education	3.30	1.32	3.32	1.39	0.109	0.913
Creating recycling points for books, newspapers etc	3.33	1.37	3.38	1.36	0.348	0.728
Organise special events, lecture, talk shows or projects such as "Sustainability Day", "Climate Week", "Environmental Project of the Year" etc. to disseminate goals of environmental sustainability on environmental issues	3.68	1.35	3.24	1.44	0.549	0.583
Collaborate with other professionals in forming a solid team to combat environmental pollution	3.34	1.40	3.29	1.43	0.308	0.759

## Discussion

It is not surprising to find waste disposal as a major environmental issue in Lagos metropolis. This is consistent with the findings of Ojeshina and Longe (1996), Ayotomuno and Gobo (2004) and Okwesili, Ndukwe and Nwuzor (2016). Waste disposal remains one of the most disturbing environmental issues in many metropolitan areas in Nigeria due to over-population, and lack of modern equipment for waste management. These reasons though tenable, could not be compared with the inability of individuals to comply with proper waste disposal habits. Other studies (e.g. Adenrele, 2014; Oyeniyi, 2011) observed that the poor housing planning in Nigeria is also a major constraint to effective waste collection, disposal and management, as most houses were built without conformity to standard. To avoid the health risk associated with indiscriminate disposal of wastes among the populace, appropriate measures should be taken by individual organisations other than those in environmental protection and health to educate the individuals on the consequences of their actions. The study of Yoda, Chirawurah and Adongo (2014) from Ghana underscores the importance of enlightening individuals on proper waste disposal. The series of effort put in place by the Lagos State Government on proper waste disposal and management will continue to be futile if the issue of waste management is not addressed at the individual level. The study revealed that patrons from both academic and public libraries agreed that there is not enough useful information on adopting pro-environmental behaviours (PEBs). It was also found that respondents from both academic and public libraries do not particularly care about environment when purchasing items; and avoid pro-environmental behaviours. Hiramatsu, Kurisu and Hanaki (2015) categorised the predictors of individual's environmental consciousness into five clusters: personal responsibility, attitude towards the environment, environmental awareness in daily life, caring about the perception of others and environmental information. The findings of this present study indicate a psychological factor that signifies information shortage. The present study demonstrated the need for libraries to render services that will help address the information needs of library patrons on eco-habits. Jankowska, Smith, and Buehler (2014) argued that academic libraries should incorporate environmental sustainability content into information literacy courses, and that students should be taught eco-habits. Benedek and Takácsné György (2013) pointed out that it is possible for individuals to possess positive environmentally conscious attitude, but that many times, this is not exhibited in actual behaviour. The results show that a majority of the respondents from both academic and public libraries agreed with the statement that they know what to do in order to protect the environment, but they do not always pay attention. This could be as a result of lack of requisite information on pro-environmental behaviour and its effect on the environment as reported by Nagy, Piskóti and Molnár (2012) that environmental values strongly support pro-environmental behaviour. As regards motivations towards environmental consciousness, findings showed that patrons from both academic and public libraries opine that their motivation is derived from contributing to the collective good of the society. This could largely be described as intrinsic motivation.

In terms of strategies futuristic libraries could use in improving environmental consciousness among patrons, findings indicate that public libraries should make eco-friendly information accessible and awaken interest of citizens through regular exhibition on themes relating to the environment, while academic libraries should organise special events such as talk shows on Eco day to disseminate goals of environmental sustainability on environmental issues. These findings corroborate those of Mulumba and Nakazibwe (2017) and Hauke and Werner (2013). The studies of Mulumba and Nakazibwe (2017), Hauke and Werner (2013) and Abiolu and Okere (2012) support the view that libraries should accept their responsibility as change agents and eco-educators in the community. Hauke and Werner (2013) argued that libraries should play the dual role of information service provider and propagators on environmental sustainability, as well as role models in eco-friendly behaviours to library patrons.

### **Conclusion and recommendation**

Environmental sustainability becomes possible when library patrons are conscious of the consequences of their action on the environment. The study concludes that public libraries should be involved in rendering services that will promote environmental awareness among the citizenry while academic libraries on the other hand should engage in serious advocacy programmes on eco-education. Librarians should desist from being quiet on eco-habits and develop keen interest in promoting environmental sustainability through environmental literacy programmes within the four walls of the libraries and beyond.

The following recommendations are made:

1. LIS professionals at local, national and regional level should imbibe the culture of celebrating the World Environment Day every 5<sup>th</sup> of June in their libraries and promote green ethic/pro-environmental behaviour among their patrons.
2. Academic and public libraries can organise eco-essay competition and this should be tied with reward system.
3. Libraries should promote awareness on waste reduction and proper disposal of waste.
4. Libraries should develop and integrate courses related to environmental literacy in information literacy courses.
5. Public libraries should organise, regularly, programmes on teaching people (Children, teenagers and young adults, artisans, the unemployed and women) on how to make crafts from wastes such as plastic straws, plastic bottles, old cartons and so forth. This will support poverty alleviation and reduce environmental degradation.

### **Implication of Findings**

The outcome of this study is capable of enhancing suitable actions from stakeholders, policy makers and LIS professionals towards achieving environmental sustainability.

### **Research Limitation**

The limitation of this research is that the paper is limited to environmental consciousness patterns of individuals who are library users.

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