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CASE STUDY

Psychosocial factors as determinants of littering prevention behavior

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ARTICLE INFO	ABSTRACT
	This study investigated psychosocial factors as determinants of littering prevention behavior among residents of Ilorin, Kwara state, Nigeria. The independent variables are; personality traits, gender, Residential characteristics, Educational level, Age and Organizational factors while dependent variable is littering prevention behavior. Descriptive survey was utilized for research design and accidental sampling technique to collect data from a total of 601 participants. The sample comprised of 263(43.8%) males and 338(56.2%) female respondents. Ten Item Personality Inventory (TIPI) was used to measure personality traits while Littering Prevention Behavior Scale (LPBS) was used to assess littering prevention behavior of respondents. The results revealed that there is significant positive relationship between littering prevention behavior and personality traits (extraversion, agreeableness, neuroticism, openness, conscientiousness) [R= (.260; P<.01), (R=.200; P<.01), R=(.144; P<.01), (R=.248; P<0.1), (R=168 P<.01). Also, female participants scored significantly higher on littering prevention behavior than males [t (599) =-3.429; p<.01]. It further shows that personality factors predicted about % significant joint influence on littering prevention behavior {R= .327; R2=.107; F (5,595) =820.56; P<.05}. It was recommended that government should attract recycling companies to explore the country utilizing the rampant litters in our environs by monetizing the submission of litters to those companies to encourage the conformists; there should be public enlightenment on how to manage one's personality to prevent littering behavior also, government should engage law enforcement agents to implement specific policies guiding and restricting littering behaviors.

INTRODUCTION

One of the pressing problems facing developing world most especially Nigeria is indiscriminate disposal of litter which invariably culminate into poor attitude towards the disposal of refuse, this has degenerated to social and health problems (Idamah, 2015). The

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high rate of littering in some countries are high and its implications has resulted in health, psychological, societal, and environmental deteriorations. Littering in Nigeria is a continuous problem, this has almost become a way of life involving both old and young of both genders. Governments, stakeholder, leaders, waste management, and environmental protection agencies in public health sector are seriously concern on how to control or prevent littering in cities and

rural areas in Nigeria (Climate Policy Watcher, 2020; Onibokun, 1999). In addition, there are two principal agencies responsible for the management of urban waste in Ilorin viz Kwara State Environmental Protection Agency (KWEPA) and Kwara State Waste Management Company (KWMC). Presently, KWMC handles the gathering and disposal of dirt from municipal waste bins (7.54m3-capacity Roll on – Roll off) (MK and Okot., 2012). As at the time this research was conducted, a total of 108 of waste bins were within the metropolis of Ilorin and KWMC utilize a fleet of medium-duty trucks to haul the waste bins. Despite the deployment of these regulatory tools, littering remains a problem in this state and Nigeria as a nation. Meanwhile a recent study has discovered that the problem with littering behavior is psychological and not only inability to manage physical surrounding by government (Oguntayo *et al.*, 2019); it therefore seminal to explore this social problem from a behavioral angle. In the field of environmental psychology, safety, hygiene keeping and littering prevention behavior are very core aspects whereas this area is yet to be fully explored in the developing countries and this may be one of the reasons responsible for careless human made environmental hazards in sub-Sahara Africa (Tanner, 1999). Tanner sees individual's difference as preventive measures taken into consideration of the physical environment. The deterioration of cities environment in Nigeria in matters of indiscriminate dumping and accumulation of litter is most apparent and has been discovered as contributing factors to the decline of

health of majority of the citizens, as such they turn out to be breeding grounds for vermin which are potential vectors of illness and diseases. (Aderemi and Falade, 2012; Oguntayo *et al.*, 2019).

Littering is an environmental pollution problem, particularly in those areas where population density is relatively high (Climate Policy Watcher, 2020). This problem raises concern among different stakeholders, hence finding ways to tackle it is paramount, moreover at a world conference held in 1992 on environmental management and development, littering of surrounding was globally tagged as a major barrier in the pathway to sustainability by all nations (Earth Summit, UNCED, 1992). Litter is untidy, injurious and hazardous to the health of humans and nonhuman species in a particular setting or area. However, due to human needs for survival and crave for development, a way out on this menace have been created (Climate Policy Watcher, 2020; Onibokun, 1999). A huge amount of resources running into Billions of naira is spent annually by the Federal Government of Nigeria to tackle this menace via Street sweeping, pro-littering prevention campaigns on both mass media like radio, television and billboard aiming at modifying people's behavior towards littering, promulgation of law to avert littering and indiscriminate dumping of refuse into gutter, tunnels and rivers (Ajaegbo *et al.*, 2012). Littering prevention behavior has been revealed as an implicit method of addressing the problem of littering disposal action (Ojedokun, 2016). The high rates of littering in most countries is leading to health and

Fig. 1: The littered street and the Cleaning Agent at Work in the city of Ilorin

environmental problem, as a result, some of nations has tagged it an atypical action (Keep Australia Beautiful Queensland, 2012; Oranjewoud, 2009). Currently, in Nigeria the act of littering is also a recurrent challenge that government environmental management protection agencies and some other bodies of public health are facing as serious menace or threat to both the environment and the inhabitants (Ojedokun, 2016; Rahji and Oloruntoba, 2009). Indiscriminate disposal of refuse is one of the man-made destructive behavior that is hampering the global environment, with a lot of negative consequences on both the living beings and the entire earth itself in terms of environmental degradation, low quality of life, health sequalae, aesthetic and social side effects, economic costs etc. (Bator *et al.*, 2011; Ojedokun, 2016). In bid to curb the menace of littering and further dissuade such act in Nigeria, some measures have been taken drastically such as; anti-littering laws and penalties to deter littering acts (Ogwueleka, 2013). Public awareness and campaigns, formal environmental restructuring (Adedibu, 1986); imposition of environmental sanitation and protection acts (Lohor, 2005) however, littering behavior amongst residents is unabated. Unfortunately, there is very few researches carried out so far to investigate the role of psychosocial patterns in the littering prevention measures in Nigeria. Researches have shown that dwellers or residents that are favorably disposed to littering prevention have tendency to take discretionary actions that could prevent dumping of refuse in an abnormal manner or choosing a wrong location for dumping (Ojedokun, 2016; Oguntayo *et al*, 2019). Also initiating behaviors that could discourage littering; dissuading refuse from blowing out of a litter bin, orientating and educating citizens on the socio-economic, financial, environmental, and artistic consequence of littering of surroundings (Ojedokun, 2016). There are various psychosocial factors that serves as determinants in littering prevention behavior such as; gender difference and personality traits. A lot of researchers have revealed that individual females are more likely to encourage pro-environmental sanitation and influence people to indulge in hygienic behaviors than male individuals (Gatersleben *et al.*, 2014). In addition, some studies conducted on the influence of social and cultural factors on littering prevention showed that male individuals have higher likeliness to litter surroundings than female individuals

(Curnow *et al.*, 1997, Oguntayo *et al.*, 2019), though some literature contradicted it that there is no gender difference in littering prevention behavior. A study on psychosocial factors found that psychological factors especially individual personality differences and the socio-environmental factors have influence on physical (hygiene) and mental wellness of people (Woodward and Kath, 2015). Personality is the logical and coherent combination or dimensions of affect, cognition, and needs or desires (goals) as they initiate an enduring trait or behavior (Revelle, 2015). Also, the American Psychological Association (APA), 2017) defined personality as individual differences; an enduring characteristic pattern of thinking, feeling, and reasoning that lead to behavior. The most prevalent means of explaining behaviors is the Big Five personality dimensions, otherwise known as the five-factor model of personality. This model of personality does not only apply to littering behavior among people in many countries and cultures around the world but explanation of hygienic behavior (Schmitt *et al.*, 2009), it also, provides an effective and efficient means of assessing personality. The study of Milfont (2007) revealed that persons with pro-environmental attitudes are dominated with helping personality that fully altruistic (highly concerned about the welfare and wellbeing of others) which is engulfed in individual personality. Although a tentative list of personal characteristics are constantly manifested inform of positive disposition towards recycling as seen in specific attitudes, knowledge, income, and locus of control therefore culminating as personality traits (Schultz *et al.*, 2013). Looking at the socio-cultural factors, littering actions can be explained as a responsive behavior arises from the activation of a personal and moral norms as prescribed by a particular society (Oguntayo *et al.*, 2019). This activation occurs when a person learns about environmental problems and their consequences and feels an obligation to act (Scwartz, 1977; Oguntayo *et al.*, 2019). Oguntayo *et al* (2019) asserted that, residents that have sound social responsive behavior especially positive morality are necessary for good littering prevention behavior. If these attitudes are translated into a generally accepted behavior, then there might be reductions in littering behavior. Sex as a demographic variable that has received persistent attention among researchers, for instance, Raudsepp (2001) discovered that middle-aged women had significant tendency than middle-

aged men to be concerned with environmental destruction. Female individuals have been found incessantly to have higher environmental consciousness and positive attitudes towards aesthetic surrounding than men. The commonest reason this for gender differences is rooted in the different in the pattern of socialization between young males and females. Much more common than not, young girls are trained to take the responsibilities of almost all the cleaning and sweeping activities; they are trained to pay more attention on their personal hygiene and tidiness of their environment than boys, this responsibility is even mostly saddle on them both at home and in school settings (Oguntayo *et al.,* 2019). In the recent centuries, some studies investigated on socio-demographic variables predicting perception of environmental have helped in pricking to citizen's views, judgment and thinking about their environment. Those studies have attempted to show the determinants of positive attitude towards environmental awareness, also pattern of attitudes of people that encourage pro-environment al behavior considering the socio-demographic features in individuals. For instance, Raudsepp (2001) revealed that age, level of education and difference in gender are strong factors that are related with pro-environmentalism. While Chanda (1999) in a study recorded that concerns on environmental beautification are common among residents of Gaborone, however, these concerns vary by levels of education and income status, and that age and gender difference do not have any significant influence on littering concerns. Scutt (1999), also found that there is positive association between pro-environmental behavior and age. Nonetheless, some researches revealed that younger individuals are more concerns about the things in their surroundings than the older individuals especially making the environment habitable, for instance; Curnow *et al.,* (1997) showed that older people do not litter more than younger people and that, individual with high education in general are more concerned about the environmental related issues compare with those with low education. Having explored the previous literature, it is no gain saying that people disposition towards the making environment healthy and hygienic is of great menace that deserve researchers' concern. Citizens must be oriented to know the consequence of indiscriminate disposal of litter. In Nigeria, an estimate sum of waste generated daily was being 476 tons in 2014 according to an average per capital generation rate of 0.49kg in Nigeria (Solomon, 2019). Added to that, a total of 207.3 tons of solid litter was generated in Port Harcourt alone in 2010, this is one of the biggest and the main city in Nigeria. Giving a per capital annual waste generation rate of 0.53 tones equivalent to waste per capita daily (Ogbonna, 2007). Despite the efforts of government in recent times in maintaining proper disposal of collected wastes residents seems not too compliant to proper disposal of their waste, cases of indiscriminate disposal of waste is still evident in the volume of litter seen at every nooks and cranny of the city. Open and fallow spaces as well as drainages are defaced and littered with refuse. The disposition of citizen towards these agencies' services prompted this kind of study, to investigate psychosocial factors that could determine littering prevention behavior because the littering as social problem has led to poor growth and reduction in standard of living of the community (Taiwo Grace , 2015). A study has it that, polluted pipe water can impact food chain negatively such as; epidemic, other health implications and hazard to animals in the environs. Taiwo Grace stressed that both women and children are the major victims of environmental pollution and that over 40,000 infants die from disease and other epidemic everyday due to the poor waste disposal and dyadic management which is as a result of lack of adequate follow up and management on the side of government. Although accurate numbers of citizens who have suffered from health outcomes that are traceable to inappropriate litter disposal could not be ascertained but diseases outbreak such as malaria, cholera, typhoid, diarrhea etc. cannot be disassociated nor separated with decomposed refuse matter and unhygienic environment (Odeleye, 2015). The current study has been carried out in Ilorin the capacity of Kwara State, Nigeria in the year 2019.

Hypotheses

The following hypotheses are postulated for testing in the current study thus:

1) There will be positive relationship between littering prevention behavior and personality traits (extraversion, agreeableness, conscientiousness, neuroticism, openness).

2) Female participants will significantly score higher on littering prevention behavior than male participants.

3) Personality factors will have significant joint and independent influence on littering prevention behavior among resident of Ilorin metropolis.

MATERIALS AND METHODS

Design

The study adopted a survey method to gather data from the target population utilizing an ex post facto design because the variables of interest in this study cannot be manipulated. The independent variable are psychosocial factors (personality traits and gender) while, the dependent variable is littering prevention behavior. The participants involved in this study are adult residents of Ilorin metropolis. For this study, data were collected from residents of the three (3) local government areas that make up Ilorin the capital city of Kwara state viz Ilorin East, Ilorin South, and Ilorin West Local Government Areas, in other to have a wide and fairly uniform representation. These areas are considered as the most populated areas in Ilorin city and with high rate of waste management related constructs also, the place is full of different ethnic groups that constitute the three major tribes in Nigeria. They possess aggregate of diverse ethnic, religious and social profiles. The city of Ilorin is also characterized by environmental problems arising from improper individual habit in disposal of litter. According to the socio-demographic attributes of respondents; 263(43.8%) were males, 338(56.2%) females. Their age range were between (18-55 years). Frequency distribution for education level indicated that those with primary school certification were 16(2.7%), secondary were 261(43.4%), 361(52.61%) were within the range of tertiary qualification while 8(1.3%) of the respondents as no formal education. Also, 220(36.6%) respondents were living in flat apartments, students living in hostels were 151(25.1%) while 100(16.6%) were from single family house apartment, 29(4.8%) were living in the mansion house apartments, while 43(7.2%) of the respondents were living in government reserve area, and 58(9.7%) were living in the range of a room apartment. A structured questionnaire containing standardized instruments was used to collect data in this study. The questionnaire contained three (3) sections; the demographic information of the participants, Ten Item Personality Inventory (TIPI) designed by Rammstedt and John (2007) and Littering Prevention Behavior Scale (LPBS) developed by Ojedokun (2016) to assess personality traits and littering prevention behavior respectively. The scales are briefly described below:

"Big Five" Inventory 10-item (BFI-10), is a scale consists of 10 items; this is adapted from Rammstedt and John (2007). The 10-item short version of personality inventory measures 5-dimension of personality traits which is openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. The test retest correlations reported for the BFI-10 scales are thus: extraversion .83, agreeableness .68, conscientiousness .77, and neuroticism .74, openness to experience .72, the test reliability for the big five is .75 convergent validity with the NEO-PI-R domains average of .63 for the TiPI and .67 for the BFI-10. While Littering Prevention Behavior Scale (LPBS) measures the level of littering prevention behavior of respondents. It is a 44-item developed by Ojedokun (2016). The items measure personal conscious actions grouped under littering prevention behavior with format in Likert scale ranging from never (1) to always (5), and the higher the scores indicates the tendencies of the person to engage in littering prevention acts. The items on the LPBS showed high internal consistency with $\alpha = .73$ while the Cronbach's alpha recorded for this study was .94. In addition, the sample size consists of 601 participants drawn from the population. The questionnaires were distributed to the resident living in Ilorin East, Ilorin South and Ilorin West Local Government Areas. The participants were randomly selected using the accidental sampling technique in this study in each Local Government. The frequency distribution of 165 (27.5%) of the respondents were from Ilorin east, 185 (30.8%) were from Ilorin south, while 251(41.8%) of the respondents were from Ilorin west. Questionnaires were administered to respondents both in their place of work as well as residential area, these areas were covered in order to have an array of sample that cut across both the industrial and street settings as well as among the employed and unemployed individuals. Instruction on how to fill the questionnaire was given and through explanation as well as translating the item of the questionnaire to Yoruba language for those that cannot read or write and where necessary the researchers helped the illiterate ones to interpret the questionnaires. However, 601 were retrieved by the researchers while 49 out of 650 questionnaires initially administered were lost. Their inform consent were sought.

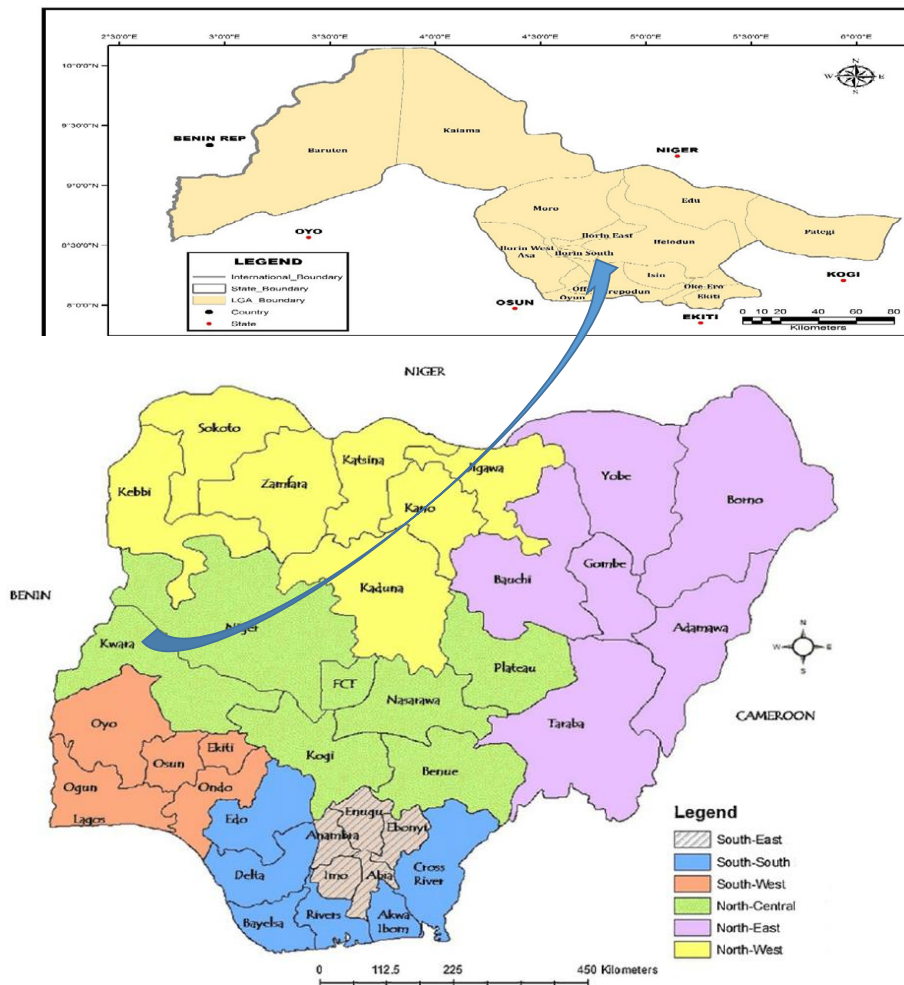Fig. 2*:* An overflowing bulk storage container in the street of Ilorin

Fig. 3: Geographic location of Ilorin, the capital city of Kwara State, Nigeria (Map Data, 2019)

Statistical analysis

The data was analyzed using the statistical package (SPSS), statistical package for social scientist version 20. Pearson product moment correlation was used to analyze hypothesis one While hypothesis two and three were analyzed using independent sample t-test and multiple regression respectively.

RESULTS AND DISSCUSION

From Table 1 above, the results showed that there is significant positive association between littering prevention and extraversion (r=.260; p<.01). There is significant positive relationship between littering prevention and agreeableness (r=.200; p<.01); littering prevention and conscientiousness (r=.144; p<.01); littering prevention and neuroticism (r=.248; p<.01); littering prevention and openness (r=.168), among residents of Ilorin metropolis. However there is significant positive relationship between extraversion and agreeableness (r=.266; p<.01), extraversion have significant association with conscientiousness (r=.281; p<.01) and the relationship is weak; extraversion also show a positive significant association with neuroticism(r=-.341; p<.01) and the relationship is strong, extraversion significantly correlated positively with openness among. (r=.359; p<.01) and the relationship is strong. In addition agreeableness has positive significant relationship with conscientiousness (r=.223; p<.01); agreeableness also show a positive significant relationship with neuroticism (r=-.310;p<.01) and the relationship is strong; agreeableness also significantly correlated positively with openness (r=-.175;p<.01) and

the relationship is weak; conscientiousness also significantly correlated positively with neuroticism (r=-.380;p<.01) conscientiousness also significantly correlated positively with openness (r=-.357;p<.01) neuroticism also significantly correlated positively with openness (r=-.327;p<.01) among residents of Ilorin metropolis. The result showed that there was insignificant relationship between extraversion, agreeableness, conscientiousness, neuroticism, openness and littering prevention behavior; as a result, the hypothesis was accepted. The result is similar to the finding of Hines *et al*., (1987); Ojedokun and Balogun (2010).This implies that the type of individual personality traits determines the level at which they will maintain a regular sanitary behavior or cleaning of their environments.

The Table 2 results indicate that female participants scored significantly higher on littering prevention than the males among residents of Ilorin metropolis t (599) =-3.429; p<.01). However, female participants recorded a mean score of (153.32) and male participants recorded a mean score of (143.68). This finding shows that there is significant different in the gender of respondents on the measures of littering prevention behavior among the study sample. That is, female respondents scored higher on littering prevention behavior than their male counterparts. Therefore, the result confirmed the stated hypothesis. Though these findings contradicted some previous researches like Samdahl and Robertson, (1989) who reported no difference between gender and environment related attitude. However, recent results were in line with the present study (Oyedokun *et al*.,

Table 1: Correlation matrix showing relationship between personality traits and Littering prevention

SN	Variables	1	2	3	4	5	6	$\bar{x}$	SD
1	Littering prevention	-						149.09	34.49
2	Extraversion	.260**	-					9.23	3.25
3	Agreeableness	.200**	.266**	-				7.65	2.68
4	Conscientiousness	.144**	.281**	.223**	-			7.81	2.64
5	Neuroticism	.248**	.341**	.310**	.380**			8.76	2.79
6	Openness	168**	.359**	.175**	..357**	.327**		7.92	2.74

**Correlation is significant at the 0.01 level (1-tailed)

Table 2: Summary of t-test for the independent samples showing the influence sex on littering prevention

	Sex	N	Mean	S.D	**Df**	**T**	P
littering prevention	Female	337	153.32	35.06	599	-3.429	<.01
	Male	254	143.68	33.03			

2010; Oguntayo *et al.,* 2019), these studies found that females make environment neater compare to males. A study conducted in Scotland and Nigeria respectively found that females have stronger littering prevention behavior than males and that females are likely than males to think that littering is wrong (Scotland's local environmental quality in decline, 2016; Oguntayo *et al.,* 2019). These differences in the literature could be as a result of cultural differences in the gender role, and can be attributed to the peculiar environment where both male and female individuals were raised also, the culture imbibe in them various morals and values pertaining to keeping hygienic environment. For instance, some cultures in Nigeria do train females to give more attention to issues relating to environment cleanliness and they are made to believe that keeping their environment tidy is the sole responsibility of females. This could cause the gender differences in or across ethnicity and races in the country.

From Table 3 above, the result showed that extraversion, agreeableness, conscientiousness, neuroticism and openness predicted about 11% significant joint influence on littering prevention among residents of Ilorin metropolis. {R = .327; R^2 =.107; F (5, 595) = 820.56; P<.05} However, the remaining 89% can be attributed to other variables not considered in this study. Similarly, the analysis of the independent prediction showed that extraversion, agreeableness and neuroticism had significant independent prediction on littering prevention (β = .168; t = -3.851; P<.01); (β = 107; t = 2.476; P<.05); (β = 143; t = 3.191; P<.05) among residents of Ilorin metropolis. This result implies that, extraversion, agreeableness, conscientiousness, neuroticism and openness predicted significant joint and independent influence in littering prevention among residents of Ilorin metropolis. Therefore, the result is supported by the stated hypothesis. Though, there are scanty literature on the present findings especially in Nigeria, it is still supported by the results of Hines *et al.,* (1987) who found in a metal-analysis that diverse traits are associated with environmental related behavior; also, Vanikka (2015) suggested that part of personality traits such as; self-concept influences individual's feeling, thinking learning, action, values, and relationship with others in their social environment. Added to that, some studies reported that individual's tendencies to have pro-environmental attitudes could be determine through personality (American Psychological Association, 2017; Milfont, 2007; Bator *et al.,* 2011). This implies that personality types did contribute to the conscious effort of littering prevention behavior and that some psychological factors can be used to identify littering habits in individuals. The dimensions of personality as a whole can be used to predict the level at which individuals will liter the environment. The conscientious individuals are patriotic, follow the judgment of their heart in line with the norms and values of the environment; they have powerful sense of responsibility and tend to always plan ahead and take assigned task serious while one with openness to experience indulge in serious mental image of his/her environment, sensitive to artistic work or beautification of surrounding, attentive to inner feelings and intellectually curious to learn innovative ideas. While the introverted may not be sociable but shy, some can be lazy in keeping hygiene but very calm while extroverted individuals can be too careless in keeping things tidy but vey sociable and friendly, agreeableness person get along quickly with laws, sympathetic, considerate, cooperate with society and warm in relating with surrounding nature while neurotic persons can overly and covertly be concerned about distressing environment, as a result they can have mood disorder, anxious and fatigued, they can also be psychologically imbalanced if unable to cope with situations. Though personality traits are enduring traits that are both learnt and inherited genetically, one can still but change the way it is affecting them negatively by devising means of coping and dealing with it.

Table 3: Summary of Multiple Regressions showing the independent and joint prediction of extraversion, agreeableness, conscientiousness, neuroticism and openness on littering prevention

Predictors	B	T	P	*R*	R^2	F	P
Extraversion	.168	3.851	<.01				
Agreeableness	.103	2.476	<.05	0.327	0.107	14.33	<.01
Conscientiousness	.005	.119	>.05				
Neuroticism	.143	3.191	<.05				
Openness	.041	.926	>.05				

Dependent variable: littering prevention

CONCLUSION

In this study, some specific psychosocial factors determining littering prevention behavior have been examined. This study investigated whether; there will be positive relationship between littering prevention behavior and personality traits (extraversion, agreeableness, conscientiousness, neuroticism, openness), female participants will significantly score higher on littering prevention behavior than male participants, personality factors will have significant joint and independent influence on littering prevention behavior among residents of Ilorin metropolis. After examining the 601 residents of Ilorin area of Kwara state, Nigeria, the statistical analysis concluded that there is a significant positive relationship between personality traits and littering prevention. Also, female participants scored significantly higher on the measures of littering prevention behavior than their male counterparts. In addition, some patterns of personality traits (i.e. extraversion, agreeableness, conscientiousness, neuroticism and openness) did have significant joint and independent prediction of littering prevention behavior among the sampled respondents. Personality traits and gender difference have been discovered as one of the psychosocial factors to be considered when considering means of enhancing littering prevention behavior among citizens in the sampled area. Although, previous findings from western world indicated that there is no gender difference in the littering prevention behavior but, the present study was able to found contradictory results however, the study was able to explain the reasons behind this disparity in result considering cultural difference, social expectation and gender role in sub-Sahara Africa compare to the western countries. Also, future researchers should consider investigating the influence of psychosocial factors especially personality traits on littering prevention behavior by involving larger numbers of participants than the present study to ascertain the generalization of the current findings. It is also possible that outcomes would vary if measured over a thousand or more participants.

RECOMMENDATIONS

Considering the findings of this research, it is therefore recommended that:

i. Various agencies and stakeholders concerned with environment and refuse management in Kwara state and in Nigeria as a whole, should lobby government to integrate pro-environmental behavior with school curriculum at basic and post basic levels of education system so that individuals especially male who are not nurture to avoid illicit dumping of refuse at home can be trained in school to develop littering prevention behaviors.

ii. Health or Environmental Psychologists should organize seminars, workshops, media campaigns and symposiums for environmental agencies' personnel in order to train them on how to use behavioral modification to enhance pro-environmental behaviors in the citizens.

iii. Government and stakeholders should build in psychological intervention into their methods of environmental management or policies to allow collaborative approach where potential offenders could be prevented and psychological methods of managing behavior could be rendered on offenders to control their littering behaviors and forestall undesirable behavior that could be unfavorable to our environment.

CONFLICT OF INTEREST

The authors declare that this study has no conflict of interests in the publication of this manuscript. So also, the ethical issues were observed and informed consent of the participants were sought with plagiarism check.

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