

Factors Influencing Green Purchasing Behaviors: Some Insights from Tamale, Ghana

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Authors' contributions

This work was carried out in collaboration between all authors. Authors JAA and JD designed the study. Author JAA wrote the first draft of the manuscript. Author EY contributed to the literature searches, revision and editing of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Green purchasing can reduce negative environmental impacts as well as promote sustainable development. As related literature from the African context is limited, this paper tries to bridge the gap by investigating the green purchasing behaviors of residents in the Tamale Metropolitan area of Ghana. The theory of planned behavior (TPB) served as a theoretical framework for identifying the main antecedents of green purchasing behavior. Standard and hierarchical regression techniques are used to analyze data gathered from 325 residents of the city. The results indicates that the TPB variables explained 44.4% of the variance in green purchasing intentions, but only 13.2% of the intentions are translated into actual behavior. Academically, this study has provided further evidence for the application of the theory of planned behavior in explaining environmentally responsible purchasing behaviors. Practically, this study has enhanced understanding of the antecedents of green purchasing behaviors among the urban residents and has also provided useful information which could aid in crafting suitable policies for a transition towards more sustainable consumption patterns in a developing country.

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1. INTRODUCTION

Goal 12 of the Sustainable Development Goals (SDGs) aims to ensure sustainable consumption and production patterns by the year 2030, which should help to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty. However, commentaries on the recently expired Millennium Development Goals (MDGs) suggest that progress on many of the developmental issues were less than satisfactory in the poorer countries of sub-Saharan Africa. As a result, questions are being raised about the potential of the SDGs to succeed, if they cannot succeed in the African continent, whose rapidly growing population most needs the change that the agenda describes [1]. Recent figures from the United Nations indicate that between 2014 and 2050 continuing population growth and urbanization are projected to add 2.5 billion people to the world's urban population, with nearly 90 per cent of the increase coming from Asia and Africa [2]. As developing countries strive to overcome poverty and deprivation by growing their economies, the growing urban middle classes are increasingly joining into the material-intensive lifestyles of their counterparts in the already developed regions [3].

Ghana has witnessed considerable urbanization and a growing middle class, made possible by robust economic performances over the last few decades [4,5]. Consequently environmental impacts from consumption activities are growing, with limited financial and human resources to adequately address the challenges [6-8]. Green consumerism has emerged a means of motivating consumers to make a contribution to environmental protection and to promote sustainable development [9-13]. Accordingly, the issues of green consumption have attracted the attention of researchers and practitioners all over the world. Various empirical studies have investigated the determinants of sustainable consumption behaviors [11,12,14-18]. A salient conclusion from these studies is that governmental effort is critical at promoting green consumption, just as the environmental value of consumers is necessary to motivate green consumption behaviors.

In the wake of the aforementioned developments and a dearth of related literature from the African

context, this paper attempts to examine the antecedents of green purchasing behaviors in the Tamale Metropolitan area of Ghana from the Theory of Planned Behavior [19] perspective. Applying the theory of planned behavior (TPB) framework in the context of an African country, provides further evidence of its worth in explaining environmentally responsible purchasing behaviors. Results could provide important insights into the predictors of green purchasing behaviors. From these insights, policy strategies could be crafted to better target the rising urban middle class consumers in Ghana and the West African sub-region. Hence, the study contributes not only by empirically testing the TPB on environmentally responsible purchasing behaviors in an African context, but also by revealing the underlying factors of such behaviors and their respective relevance for policy strategies.

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 The Theory of Planned Behavior

According to the theory of planned behavior (TPB), an individuals' intention to perform a behavior is the immediate determinant of that behavior [20]. Intention is determined by three antecedents: (a) attitudes toward the behavior, (b) subjective norms and (c) perceived behavioral control (PBC). Attitudes stem from beliefs about probable outcomes of the behavior. Subjective norms pertaining to a particular behavior depend on the perceived behavioral expectations of the relevant others and the motivation to comply with those expectations. Perceived behavioral control comes from beliefs about one's ability to control the targeted behavior and the perceived power of those beliefs. In recent years, a number of researchers have employed the theory to explain environmental behavior in a variety of context: Zhu, Li [11] have reported that promotion/diffusion can bring about green food consumption intention. Han, Hsu [21] found that attitude, subjective norm, and perceived behavioral control positively affect intention to stay at a green hotel. In a large sample survey, Moser [9] found willingness to pay (WTP) as the strongest predictor of green purchasing behaviors among German households. The present study extends the literature on the application of the theory of planned behavior by

examining the antecedents of green purchasing behaviors in relation to urban residents in a developing country.

2.2 Attitude towards Environmental Concern

According to Lee, Kim [22], attitude towards environmental concern is any behavior that impacts positively on the availability of materials or behavior that positively alters the structure and dynamics of ecosystems/biosphere. Earlier research into the relationship between environmental concern and environmentally responsible behavior show mixed results. While some studies found that people concerned about the environment are more likely to engage in environmentally responsible behaviors [22-27], other studies have reported insignificant relationship between environmental concern and pro-environmental behavior [15]. The notion that individuals act on their environmental interests or the lack of it, suggests that researchers should continue delineating the factors that may influence such behaviors [28]. Therefore, we propose the following hypothesis:

H1: There will be positive relationship between attitude towards environmental concern (EnvC) and green purchasing intention.

2.3 Subjective Norms

The subjective norm construct of the theory of planned behavior refers to perceived social pressure to approve and adopt a particular style of behavior [19]. Consumer research recognizes that consumers' image concern, and peer opinion can have strong influence and predict sustainable consumption behavior [17,29]. A considerable number of previous studies have utilized the subjective norm construct to measure consumers' green behavior. The work of Park and Yang [30] confirmed the role of subjective norms in affecting intentions to participate in environmental activities. Biswas and Roy [17], found that the strongest influence behind sustainable consumption behavior comes from peer opinion and social recognition. Gupta and Ogden [31], demonstrated that trust, in-group identity, expectation of others' cooperation and perceived efficacy—were significant factors in differentiating between “non-green” and “green” buyers. Based on the literature discussed above, we propose the following hypothesis:

H2: There will be positive relationship between subjective norms (SBN) and green purchasing intention.

2.4 Perceived Behavioral Control

The TPB proposes that if an individual is confident of his or her abilities to perform a behavior, that individual is more likely to intend to, and subsequently perform the behavior [19]. Over the years, various studies have empirically tested the link between PBC and intention. A strong relationship was observed between safe food handling and PBC [32,33]. In an extension of the theory of planned behavior, Chen and Tung [34] found that PBC positively affects consumers' intention to visit green hotels. Therefore, we propose the following hypothesis:

H3: There will be positive relationship between perceived behavioral control (PBC) and green purchasing intentions.

Unlike attitude and subjective norms, PBC can directly predict a targeted behavior [35,36]. For instance, Mullan, Wong [33] found PBC as the most influential factor of behavior in an adolescent population. Following on the above discussion, we propose that:

H4: There will be positive relationship between PBC and green purchasing behavior.

2.5 Green Purchasing Intention

According to Ramayah, Lee [15], intention is a determination to act in a particular way. However, the presence of a behavioral intention does not guarantee actual behavior [19]. There are studies which found behavioral intentions as strong predictors of actual behaviors [37,38], whereas in other studies, a weak intention-behavior relationships have been reported [33,39,40]. In rural China, behavioral intention plays an important role in explaining sustainable consumption behaviors [37]. On the other hand, Collins and Mullan [39] reported a large intention-behavior gap among Australian undergraduate students. Therefore, we propose the following hypothesis:

H5: There will be positive relationship between green purchasing intention (GrPI) and behavior (GrPB).

2.6 Demographical Control Variables

Over the years, demographical factors such as age, gender, income and education have often been employed in studies concerning green consumer behaviors. Higher educational attainment is positively linked with green consumerism [11,16,41]. In the UK, it was found that people in the lower income bracket were less likely to be committed sustainable consumers when compared with those with higher income [41]. In terms of age, several studies have concluded that older consumers are more likely to go green than younger consumers [15,16,24,42,43]. Also, females are more inclined to pro-environmental behaviors than males [24,25,44-47]. Therefore, the present study considers gender, age, income and education as moderator variables.

3. METHODOLOGY

3.1 The Model

Based on the theoretical background and hypotheses discussed in section 2, Fig. 1 shows the research model. Fig. 1 shows that attitude towards environmental concern, subjective norm and perceived behavioral control are necessary to bring about green purchasing intention, whilst perceived behavioral control could directly influence green purchasing behavior. The model predicts that higher levels of behavioral intention should translate positively into green purchasing behavior, but demographical factors could affect such a relationship.

3.2 The Study Area

The survey was conducted in the Tamale Metropolitan area of Ghana. The Republic of Ghana is centrally located on the West African coast and has a total land area of 238,537 square kilometers. In 2013, the population of the country was estimated at 26.427 million, made up of 48.92% males and 51.08% females. The annual GDP reached 47.93 billion USD in 2013 with a per capita GDP of 1,850 USD. Key sectors of the Ghanaian economy include: services sector (50.0%), industry (27.3%) and agriculture (22.7%). The Tamale Metropolis, which is the capital city of the northern region, is one of six metropolitan cities in Ghana and the only metropolitan city in the northern part of the country. It lies between latitude 9.16° and 9.34° north and longitudes 00.36° and 00.57. The city has undergone remarkable changes in population over the years. The most recent

census in Ghana put the total population of the city at 223,252, made up of 111,109 males (49.7%) and 112,143 females (50.2%) [48].

The rapid population growth trends observed in the city has been attributed to its position as the administrative capital of the Northern Region, and the ensuing opportunities it presents to residents of the outlying rural communities [4]. Tamale is an ideal city for this study owing to its strategic location in the West African Sub-region and by this strategic location, the Metropolis has a market potential for goods from the agricultural and commerce sectors. The city is host to much retail, wholesale and informal business activities. Besides, the area stands to gain from markets within the West African region from countries such as Burkina Faso, Niger, Mali and the northern part of Togo and also en-route through the area to the southern part of Ghana.

3.3 Instrument

Based on a thorough literature review, we adapted questionnaire items from previous studies and developed a questionnaire consisting of two main sections: the first section solicited demographic information including gender, age, income, education and employment category and the second part of the questionnaire contained items meant to obtain data for the TPB variables. The wording of questionnaire items for the TPB variables were modified to suit the purpose of this study, based on items used and validated by Karim Ghani, Rusli [38] and Han, Hsu [21]. We pre-tested the questionnaire to a sample of 40 student volunteers. Apart from a few typographical and grammatical errors, no major problems were observed during the pre-testing.

The main survey was undertaken from August 11 to September 15 of 2014 at the premises of two main shopping centers in the city of Tamale (Forsmuel Shopping Centre and Quality First Supermarket) and also at a cluster of medium-sized supermarkets close to the Nyankpala Campus of the University for Development Studies. There were two kinds of products attached to the introduction of the questionnaires: a recycled tissue paper, adopted to represent a green product and a virgin tissue paper, adopted to represent the conventional alternative. The participants were asked to rate the questionnaire items, with each response being measured against a five-point Likert scale (1, strongly disagree; 2, disagree; 3, neutral; 4, agree and 5, strongly agree). Attitude towards

environmental concern was assessed as a mean of four items, with a higher score indicating a more positive attitude. Subjective norm was assessed by three items, with a higher score indicating more normative pressure. Perceived behavioral control was assessed as the mean of two items, with higher score indicating more

control. Behavioral intention and behavior were each assessed as the mean of two items. By means of mall-intercept interviews, we handed out 340 questionnaires and 325 usable questionnaires without missing answers to all questions were received. (The questionnaire is shown in Table 1).

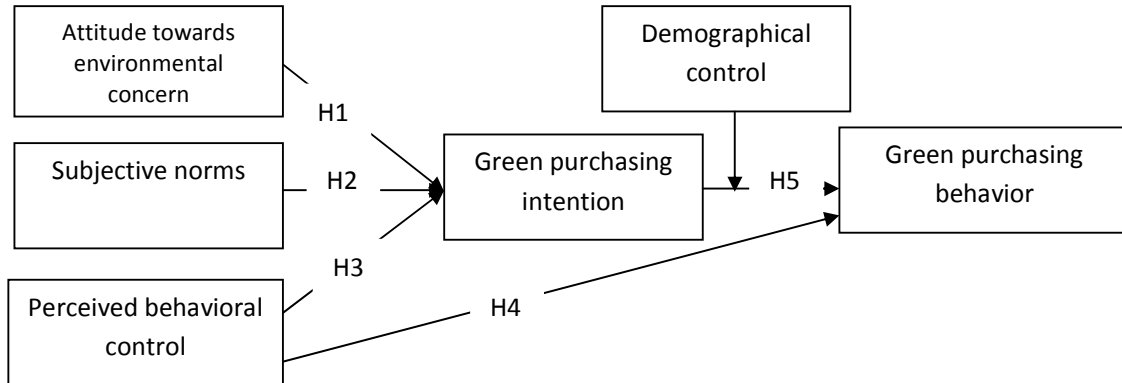


Fig. 1. A conceptual model of the antecedents of green purchasing behavior

Table 1. The questionnaire

Constructs	Questionnaire item	Adapted from
Attitude towards Environmental concern	In my opinion, taking actions that are more environmentally friendly is a good activity I think that the product I purchase should not be dangerous to environment For me, humans are severely abusing the environment For me, if things continue on their present course we will soon experience a major environmental disaster	[38]
Subjective norm	My family would think that I should buy green products My associates would think that I should buy green products The community where I live think I should buy green products	
Perceived behavioral control	Whether or not I buy green products is completely up to me I am confident that if I want to, I can buy green products	[21]
Green purchasing Intention	I am willing to buy green products I plan to buy green product for ecological reasons	
Green purchasing behavior	I regularly make a special effort to buy paper and plastic products that are made from recycled materials I regularly recommend green products to my friends and family members	[38]

4. RESULTS

4.1 Sample Characteristics

The demographic composition of the sample is shown in Table 2. A majority (70.5%) of the respondents fell within the ages of 21 years and 30 years, with about 56.0% of them being male. Concerning educational attainment, there were 59.1% undergraduates and 16.0% postgraduates. A majority of interviewees reported an annual disposal income between GHS 6,000 to GHS 10,000. The income levels are consistent with results of the Ghana Living Standards Survey Round 6 [49] for the area, so the survey results may reflect the real situation of the Tamale Metropolis.

4.2 Reliability of Measures and Descriptive Statistics

Before testing the hypothesis of this study, we conducted reliability test on each construct. Reliability was assessed using Cronbach's alpha values. As shown in Table 3, all the reliability values were above 0.7, indicating high reliability for measurements used.

The mean scores and items correlations were computed (Table 4). The sample produced mean scores between 3.16 and 4.19. Contrary to our expectation the mean score for green purchasing behavior was the highest (4.19), suggesting that the residents of Tamale metropolis are keen on purchasing green products. However, mean PBC score was lowest (3.16), an indication of the existence of some constraints over green purchasing activities.

4.3 Predicting Green Purchasing Intention

Standard multiple regression analysis was performed with attitude towards environmental concern, subjective norms and PBC 'forced entered' as independent variables and green purchasing intention as the dependent variable. The adjusted R^2 (0.444), shows that the independent variables accounted for 44.4% of the variance in the green purchasing intentions of the respondents. One important assumption of multiple regressions is that, the predictor variables should be independent of each other. The variance inflation factors (VIF) of the three predictor variables shown in Table 6 are all less

Table 2. Profile of the subjects

		N(number)	Percentage
Gender	Male	182	56.0
	Female	143	44.0
Age	18-20	29	8.9
	21-30	229	70.5
	31-40	67	20.6
Education	Postgraduate	52	16.0
	Undergraduate	192	59.1
	College Certificate	62	19.1
	Senior High school	16	4.9
Employment category	Junior High school or lower	3	0.9
	Student	198	60.9
	Teacher	64	19.7
	Health Worker	19	5.8
	Civil Servant	9	2.8
	Farmer	-	-
*Income (GHS, thousand Ghana cedi)	Self-employed	9	4.3
	Others	14	6.5
	Less than 6	21	0.3
	6 -9.988	205	63.1
	10-19.988	115	54.4
	20 -30	4	1.2
	Greater than 30	0	0.0

*1USD = 3.88 GHS

than five, an indication of the absence of multicollinearity. Thus, our model is an appropriate one for the data obtained. The results of the regression analysis (Table 5) indicates that attitude towards environmental concern, subjective norms and PBC, exert a positive and significant influence on Tamale residents' green purchasing intentions. This supports H1, H2 and H3. However, further examination of the results reveals a rather weak link between attitude towards environmental concern and green purchasing intention in the metropolis.

Table 3. Reliability test

Construct	Cronbach's alpha
Attitude towards environmental concern	0.88
Subjective norm	0.71
Perceived behavioral control	0.87
Green purchasing Intention	0.81
Green purchasing behavior	0.74

4.4 Predicting Green Purchasing Behavior

Hierarchical regression analysis was performed to examine the influence of demographics and the TPB variables of behavioral intention and PBC on green purchasing behavior. In the first step, we entered gender, age, income and education as control variables. Results (Table 6) show that only the education variable was significant and explained 2.9% of the green purchasing behavior. In the step 2, we added the TPB variables of intention and PBC, and only the intention variable was significant in predicting green purchasing behavior. The adjusted R² (0.132), shows that our model could only explain 13.2% of the variance in green purchasing behaviors compared to 44.4% of intentions explained. This shows a large intention-behavior gap among the Tamale residents. It should be noted that when the TPB variables of intention and PBC were entered into the regression, the education variable remained a significant predictor of behavior. This suggests that residents in the metropolis with relatively higher levels of education are more likely to engage in green purchasing practices. The results (Table 7) show that hypothesis 5 is supported but hypothesis 4 is not.

5. DISCUSSION

The present study developed a conceptual model based on the theory of planned behavior to explain green purchasing behaviors in the Tamale metropolitan area of Ghana. Our model was significant in explaining 44.4% of the variance in green purchasing intentions. However, the results (Table 5) revealed a rather weak contribution of the environmental concern construct to green purchasing intentions, even though a favorable attitude towards environmental concern was reported (See in Table 4). Previous investigations on the relationship between environmental concern and behavioral intentions show mixed of results. High environmental concern has been found by many [16,22,23] to significantly influence environmentally responsible behavioral intentions. However in Malaysia, Ramayah, Lee [15], found evidence that environmental concern may not necessarily translate into ecological conscious purchasing intentions. Thus, our findings indicate that residents' of the Tamale Metropolis may be concerned about the environment, but such concerns do not sufficiently translate into environmentally responsible purchasing decisions. Such results suggest that solely emphasizing on the importance of environmental protection and persuading environmentally-friendly behaviors is not enough to attract residents of the metropolis to consider the environmental consequences of their purchasing plans. Despite previous pro-environmental interventions such as the "campaign for greater discipline" spearheaded by the late Vice President Alhaji Aliu Mahama, household waste management is still a huge problem in the main cities of Accra, Kumasi and other metropolitan areas in Ghana [6,7]. Consequently to promote green purchasing and other pro-environmental behaviors in Ghana, government and key stakeholders should move away from a focus on increasing environmental concern, at least in the case of urban residents. Extant literature points to the usefulness of a combination measures such as social influences, consumer effectiveness, subsidies and providing access to green products [14,50]. The results (Table 5) show that PBC has a significant influence on the green purchasing intentions of the Tamale residents. Such results suggest that the ease or difficulty of embarking upon environmentally responsible purchasing behaviors could have direct impact over whether urban residents in Ghana would consider the environment in their purchasing plans. Providing

sufficient and accurate information about green products and expanding sales points could be important strategies in increasing visibility and encouraging participation in green purchasing [11, 14, 24]. Again, results in Table 5 show that normative pressures have significant influence on the Tamale residents' green purchasing intentions. This means that the formation of favorable attitude toward green purchasing is influenced by the respondents' perception of the relevant others. A previous study in India found that the strongest influence behind sustainable

consumption behavior came from peer opinion and social recognition [17]. Thus, governments and stakeholders aiming to promote green purchasing practices among urban residents in Ghana should not ignore the importance of social connections in designing intervention strategies. Promotional strategies should find ways of increasing the influence of friends, family members and other close associates, since it could in the long-term; contribute in building favorable attitudes towards green purchasing activities.

Table 4. Correlation and mean of constructs

Constructs	1	2	3	4	5	
1 = Attitude towards environmental concern	1	0.181**	0.265**	0.239**	0.152**	(3.55)
2 = Subjective norm	0.181**	1	0.883**	0.642**	0.282**	(3.39)
3 = Perceived behavioral control	0.265**	0.883**	1	0.647**	0.236**	(3.16)
4 = Green purchasing Intention	0.239**	0.642**	0.647**	1	0.346**	(3.64)
5 = Green purchasing behavior	0.152**	0.282**	0.236**	0.346**	1	(4.19)

Note: Mean values are in brackets
 **: Correlation is significant at the 0.01 level (2-tailed)

Table 5. Results of multiple linear regression analysis

Independent variable	Standardized coefficients	p-Value	VIF	Adjusted R ²
Attitude towards environmental concern	0.092	0.034*	1.09	0.444
Subjective norm	0.342	0.000***	4.61	
Perceived behavioral control	0.320	0.000***	4.80	

Dependent variable: purchasing intention
 Notes: VIF= Variance Inflation Factors; *p < 0.05; **p < 0.01; ***p < 0.001

Table 6. Hierarchical regression analysis: TPB variables and demographics predicting behavior

Variables	Std. coefficients	P-value	Adjusted R ²
Step1			
Gender	-0.037	0.509	0.029
Age	-0.003	0.954	
Income	-0.081	0.149	
Educational level	0.147	0.009***	
Step2			0.132
Gender	-0.042	0.416	
Age	-0.008	0.882	
Income	-0.060	0.251	
Educational level	0.152	0.004***	
Perceived behavioral control	0.025	0.712	
Purchasing intention	0.329	0.000***	

Dependent variable: green purchasing behavior
 Notes: std = standardized; *p < 0.05; **p < 0.01; ***p < 0.001

Table 7. Summary of significance of hypothesis

Hypothesis	Result
H1: There will be positive relationship between EnvC and GrPI	Significant at 5% level
H2: There will be positive relationship between SBN and GrPI	Significant at 1% level
H3: There will be positive relationship between PBC and GrPI	Significant at 1% level
H4: There will be positive relationship between PBC and GrPB	Not significant
H5: There will be positive relationship between GrPI and GrPB	Significant at 1% level

Notes: EnvC= attitude towards environmental concern; SBN= subjective norms; PBC= perceived behavioral control; GrPI = green purchasing intention; GrPB= green purchasing behavior

People in lower income bracket are less likely to be committed sustainable consumers when compared with those in higher incomes bracket [41]. Our results (Table 6) show that income is not a significant predictor of green purchasing behavior in the Tamale metropolitan area. Such an outcome could be due to the relatively low levels of disposal incomes reported by the residents (Table 2). However, the results (Table 6), shows that education is a significant predictor of green purchasing behavior in the area. This indicates that residents in the metropolis with relatively higher educational attainment are better enlightened and are more likely to consider the environmental consequences of their purchasing decisions. This is consistent with the findings of studies elsewhere [11,41].

After controlling for demographics, the TPB variables of intention and PBC significantly increased the proportion of green purchasing behavior explained to 13.2%. Similar to previous studies [33,39,40], the model was more successful in predicting behavioral intention (44.4%) than behavior (13.2%). The large intention-behavior gap suggests that residents in the metropolis fail to engage in intended green purchasing behaviors. In addition, the hypothesis that PBC will directly influence green purchasing behavior was not supported, an indication that prevailing conditions in the city are not favorable for green purchasing practices. The statistic results (Table 4) show that mean PBC score was lowest. Such results could mean that residents keen on patronizing green products or performing behaviors considered less harmful to the environment, encounter constraints which prevent them from actually doing so. If people desirous of patronizing green products have to pay high non- monetary price to find stores they often lose interest by the end of the search [14]. Therefore, in order to increase PBC and its subsequent influences on intention/ behavior, city authorities of the Tamale metropolis should introduce measures that make it possible for the

residents to put into practice environmentally responsible consumption initiatives.

6. CONCLUSION

The present study applied the theory of planned behavior framework to explain the green purchasing behaviors of residents in the Tamale metropolitan area of Ghana. Standard and hierarchical regressions techniques were applied to data collected from 325 respondents. The results obtained could help city authorities to better understand the drivers of green purchasing behaviors and to devise policy strategies relevant for a transition towards more sustainable consumption patterns.

For city administrators, regression results revealed a minuscule contribution of the environmental concern construct to green purchasing intentions. High levels of environmental concern are not enough to attract residents of the metropolis into more sustainable consumption practices. Even though residents of the city are keen on adopting green purchasing practices, they are faced with constraints which prevent them from actually doing so. In Ghana, current promotions on sustainable consumption activities are mostly based on TV commercials designed to increase knowledge on the consequences of non-environmental practices. However, the findings of the present study support the need for city authorities to introduce measures that makes it possible for residents to put into practice environmentally responsible purchasing initiatives. Thus, awareness-raising activities must be backed by the creation of opportunities for people to be more environmentally inclined in their purchasing activities. The subjective norm construct was significant and positively connected to green purchasing intention. Therefore, campaign activities aimed at promoting environmentally responsible consumption practices should find ways of increasing the influence of friends, family members and other close associates that could

contribute in building favorable attitudes toward green purchasing in the long-term.

7. LIMITATION AND FUTURE RESEARCH

Even though the present study makes a significant contribution to the literature on green purchasing behaviors, there are shortcomings which should be noted. While the mall-intercept method used for collecting data is adequate for the goal of the study, certain demographic characteristics of the respondents maybe less diverse as in the overall situation of the city from which the sample was drawn. This could limit the generalizability of the study results and it should be considered when interpreting the findings. We suggest that future studies should follow the enumeration areas set by the Ghana statistical Service. Another limitation was the sample itself; targeting only consumers in the Tamale metropolis might be a hindrance for generalizing the findings. Therefore, we suggest that future studies should consider collecting data from more cities.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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