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Consumer awareness, practices and purchasing behavior towards green consumerism in Kenya

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Abstract

Sustainable consumption and production are related to maximizing natural resource use while minimizing waste generation to reduce the environment's negative impacts. There has been limited research on consumer approaches to Kenya's environmental concerns, and their consumption behaviours remain unknown. This study sought to assess the Kenyan consumers' knowledge of green products, their sustainable practices (SCP), and eco-labels influence on their purchasing decisions. A semi-structured questionnaire was administered to 205 participants randomly selected in five constituencies within Nairobi County. The consumer's educational level significantly ($p<0.01$) correlated with the knowledge of sustainable consumption and production (39%) as compared to 61% who are not aware of SCP practices. However, SCP knowledge was not significantly different ($p=0.76$) among the male and female respondents. The prices (86.3%) and product quality (79.5%) were the most considered during purchase than only 40% of the consumers who preferred environmentally friendly products during purchase. Even though only 27% agreed that eco-labelling plays a key role when purchasing products, most (70%) of the respondents would buy green products if green credentials were emphasized. The respondents' trust levels on eco-labels were not significantly different among male and female respondents ($\chi^2 = 5.89$, $p=0.47$) and regardless of the educational levels ($\chi^2 = 5.51$, $p=0.99$), However, the high costs (69.8%), lack of adequate information (44.4%), and unavailability (39.5%) were the primary constraints to buying green products. While environmental activists were found to be the most important (66.1%) sources of information, increased awareness (98%), environmental education (90.7%), and provision of monetary incentives (78%) would help promote sustainable consumption and production. In conclusion, there is a need for creating more awareness on the consumption and production of green horticultural food products to sensitize the public on sustainable environmental practices among Kenyan consumers to promote green consumerism.

Keywords: *Consumption; production; consumer; sustainable; environment*

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Introduction

Sustainable consumption and production practices aim at ensuring efficient use of natural resources, mainly water and energy, while maximizing production to achieve desired development and improvements in food productivity. They simultaneously minimize the

adverse effects on the environmental and social costs to produce green or sustainable products (United Nations, 2015). Generally, green products are defined as environmentally sustainable and compatible products that are significantly less harmful to the environment as their manufacture entails environmentally-friendly resources (Sdrolia, 2018). They are processed using less natural resources, with conservation and recycling maximized besides imparting the least negative environmental impacts at all stages of their lifecycle (Sdrolia, 2018).

Consumers' purchase of green products is of interest to policy-makers to understand and encourage the adoption of sustainable consumption practices (Darnall *et al*., 2012). Unlike pollution, consumers cannot be coerced through regulations personal consumer choices. This is further complicated because, for most consumers, quality and satisfaction are often prioritized as opposed to buying products with minimal protection for the environment (Kianpour *et al*., 2014).

The consumer perception towards the environmental impacts highly influences the successful adoption and implementation of sustainable consumption and production practices since their attitudes and approaches in daily activities have various effects on the environment (Jonkutė, 2016). Therefore the motivation and barriers to effective, sustainable behaviours among consumers are critical. They play significant roles in decision-making since uncontrolled actions lead to unsustainable production, consumption, and poor waste disposal (Redman & Redman, 2014).

The effectiveness of sustainability among consumers is highly dependent on consumer behaviour whereby the activities involved in the procurement, consumption, and disposal of respective products and services are a function of the derived satisfaction (Kianpour *et al*., 2014). However, studies have found that among the most important consumer decision-making processes, the environmental concerns are not directly reflected in their purchasing intentions and the processes that precede and follow their purchasing decisions are often a limiting barrier to establishing adequate sustainability (Junior, 2014; Thompson, 2005). Consequently, it has been found that the willingness to pay for green products is practically minimal as more than 50% of the consumers are inactive green consumers (Bengtsson *et al*., 2018). These may be attributed to the inability to differentiate green and normal products and the implications of consumption and production of these products on the environment (European Commission, 2008).

There have been increased concerns about the sustainable use of natural resources worldwide in the recent past. These have been proven to be finite and would result in long-term ecological disruptions with severe constraints among future generations (Thompson, 2005). Consequently, manufacturers have increased intensification in eco-labelled products to signify that their products are environmentally friendly, although some are hogwash (Jin *et al*., 2018). Furthermore, most manufacturers are oriented towards reducing pollution associated with production, and therefore, there is a need for extensive consumer education to ensure sustainable consumption (Bleda & Valente, 2009).

Eco-labels usually transmit producers' messages to consumers and have been shown to promote green consumerism (Daugbjerg *et al*., 2014). Eco-labels are, therefore, sources of free environmental information, and they help endorse sustainable practices among consumers without interfering with their freedom of choice (Grunert & Wills, 2007). However, they have to influence consumers' purchasing decisions to be effective, and therefore, the targeted consumers have to be knowledgeable on the eco-labels attributes and meaning (Grunert & Wills, 2007). Eco-labels have also significantly increased consumers' behavioural change towards adopting sustainable consumption (Testa *et al*., 2015). There has, however, been limited information on consumer understanding of eco-labels in Kenya and the influence they have on their purchasing decisions.

Horticultural produce in both fresh and processed forms are some of the most consumed foods globally, Kenya included, and are easily traded in open-air markets and retail shops (Joosten *et al*., 2015; Tschirley *et al*., 2010).

However, horticultural food production involves intensive utilization of natural resources, with the later stages of transportation, processing, consumption, and disposal having a significantly negative impact on the environment (Wainwright *et al.*, 2014). Therefore, the current study was carried out to establish consumer knowledge, perceptions, and attitudes towards green horticultural products and the influence of eco-labels on their purchasing decisions in Kenya.

Materials and Methods

Research design

A cross-sectional survey targeting processed and fresh fruits and vegetable consumers was conducted in April 2019. Enumerators with a minimum of tertiary education, good communication skills, and the ability to interpret the questions into the local dialects were recruited and trained on the pre-tested semi-structured data collection tool. The research assistants used the Open data kit (ODK) mobile digital data collection platform to collect data from the consumers. The survey tool was a pre-tested semi-structured questionnaire administered to the study population (n=205) obtained using Fisher's *et al*., (1991) formula. It was distributed across Embakasi, Dagoreti, Westlands, Kasarani areas of Nairobi County, Ruiru, and Kabete areas of Kiambu County. The tool was written in English but was translated to Kiswahili and local dialects necessary for ease of interpretation. Consent was sought from the participants before the commencement of the survey. The respondents were assessed on choices of horticultural food products (processed and fresh fruits and vegetables) and their perception of green products, among other attributes related to sustainable production and consumption.

Data analysis

Data were collated and retrieved from the server (Ona.io, 2019). These were cleaned and then subjected to analysis using Statistical Package for Social Science (SPSS) Version 25 (IBM, Corp, 2017). Descriptive statistics were used to obtain the frequencies, percentages, means, and standard deviations for the study variables. Inferential statistics were obtained by use of Chi-square tests ($\chi 2$) and Pearson's correlation coefficient (r) with the *P*-value set at ≤ 0.05.

Results

General description of the respondents

The respondents constituted 56% males and 44%, females. The majority of the participants were youths (<35 Years) who made up 73.7%, followed by the middle-aged people (35 – 50 years) at 21.5%, while upper middle age and the retirees comprised 3.9% and 1%, respectively. The latter two may have been difficult to trace as most are not as active while the youths were easily traceable. The educational level of the respondents varied significantly ($p<0.05$), with most respondents having attained tertiary level education (50.2%), while 41.9% had attained secondary school and the rest had primary and no formal education at 7.3% and 0.5 %, respectively. Approximately 4 in every 10 (39%) respondents were aware of SCP practices compared to the majority who did not know these. However, there was a significant ($p<0.01$) association between the consumer educational level and sustainable consumption and production practices. Consumers with tertiary level education were more familiar (55.3%) with SCPs terms than about 78% of the respondents with secondary and primary education who have never heard similar words..

These findings agree with Jonkutė (2016), who also reported that the older and more educated the consumers were, the more they comprehended and understood environmentally-related information. Concerning this, the United Nation's Environment Program has recommended educating the population on the need for sustainable production and consumption (UNEP, 2009) for successful implementation, especially in areas where illiteracy and low education levels are prevalent.

Most (56%) consumers believed that their consumption activities, including purchase and use of food, clothing, and housing, among others, had an impact on the environment, while 5.4% disagreed. On environmental responsibility, consumers strongly agreed (64.9%) that it is their

responsibility to take care of their environment, and only 1% were of the contrary opinion. However, 41% of the respondents knew little or nothing about the environmental impact of the products they buy or use than those fully aware (22.9%). In comparison, 36.1% knew about significant environmental impacts. There were also no significant differences in this knowledge among the male and female respondents (p= 0.76).

SCP and green products knowledge and awareness

The consumer's familiarity with sustainable green products and consumption was generally low regardless of the gender of the respondents (p>0.05). Although a significant number of respondents are familiar with green products (36.1%), most of them have never heard of sustainable products (53.7%), sustainable consumption (52.7%), and green consumption (42.9%) and only 12.7 % admitted to being green consumers. Consequently, most (40.5%) of the consumers admitted to being unsure whether what they buy is green or not. In comparison, 33.7% of consumers indicated that they would buy green products if they were affordable. However, 15% of consumers rarely do or do not buy green products, and only 10.7 % would buy them even if the prices were high as long as they are available in the markets (Table 1).

The consumer purchasing habits would change if green credentials were emphasized on products through advertising and packages, as observed by most (70%) of the respondents. However, 19 % were not sure whether they would change their practices. Although most of the respondents (52.7 %) were ready to purchase green/sustainable products, 28.8% were not sure, and 18.5% were not prepared to. Moreover, a significant number (28%) of respondents were unsure whether they had purchased green products in the last year, compared to 62% who affirmed to have bought the same. A further slightly more than half (55.1%) of the respondents believed that they would have to compromise on prices, low functionality, and quality, among others, most of the time to be green consumers, while 22 % were not sure of this.

Table 1: Green products familiarity

SCP	Familiarity	Gender		Total %
		Female(n)	Male(n)	
Sustainable Product	Familiar	17	29	22.4
	Heard of	16	33	23.9
	Never heard of	57	53	53.7
Green Product	Familiar	30	44	36.1
	Heard of	28	35	30.7
	Never heard of	32	36	33.2
Sustainable Consumption	Familiar	17	24	20
	Heard of	19	37	27.3
	Never heard of	54	54	52.7
Green Consumption	Familiar	22	30	25.4
	Heard of	31	34	31.7
	Never heard of	37	51	42.9

Factors considered when purchasing

Consumers' purchasing of products was mainly influenced by prices (86.3%) and product quality (79.5%), which were considered the most important compared to only 40 % of the respondents who think the products' environmental impact is the most essential when buying the same. However, 21.4% cared less about the effect. The benefits of products on the environment when purchasing were found to have a low influence on consumers (18.5%), indicating a low level of environmental consideration and, therefore, a need to educate consumers about sustainable consumption. The product brand (24.4%), product advertisements (12.7%), and celebrity endorsement (6.3%) did not have much significant influence on purchasing habits as compared to food safety/public health implications of the products (50.2%) and low maintenance cost (37.6%). The buying of green products was majorly hindered by their high prices (69.8%), lack of adequate information (44.4%), unavailability (40%), and royalty to other brands (26%) of green products, among others-greenwash (16%), lack of interest and lack of adequate time to look for these products (16%).

Sources of information on environmental issues

The environmental activists and media at 66.3% and 59.5% were the most important sources of environmental information to consumers, respectively, compared to the political players. The latter made the least important (42%). The government also scored well (49.3%), as their role may influence this in regulations and policy formulation and implementation (Table 2).

Sources of information on environmental issues

The sources of information play a vital role in sustainable consumption and production awareness and practices (Bengtsson *et al*., 2018). The environmental activists and media at 66.3% and 59.5% respectively, were the most important sources of environmental information to consumers than the political players. The latter made the least important (42%). The government also scored well (49.3%), as their role may influence this in regulations and policy formulation and implementation (Table 2).

Table 2: Sources of environmental information

Sources of information	**Frequency (%)**			
	Not Important at all	**Rather not**	**Somewhat Important**	**Very Important**
Environmentalist/Activist	5.4	8.3	20	66.3
Family Members	5.4	13.2	20	61.5
Media News/programs	2.9	3.9	33.7	59.5
Social Media	7.8	5.9	30.7	55.6
Friends	8.8	11.7	25.4	54.1
Advertising	5.9	10.2	33.7	50.2
Government	5.9	14.6	30.2	49.3
Employer	20.5	7.3	30.7	41.5
Residents of the area	16.1	17.6	24.9	41.5
My political party	42.0	26.8	16.6	14.6

Role of Eco- labels in purchasing decisions

Most (41%) of the respondents were unaware of the eco-labels. A fifth (21%) of the consumers were not sure of the terms and what they mean, indicating the limited familiarity of the eco-labels role and their influence on the purchasing decisions. There was a significant ($p < 0.001$) correlation between the educational level and the familiarity with eco-labels. Only 26% of respondents with secondary and primary education were knowledgeable on the eco-labels on products than 50% of respondents with tertiary level education. There were, however, no significant differences ($p=0.079$) in either male or female participant's knowledge of eco-labels. Eco-labeling played an essential role in the purchasing decisions of 27.3% of the respondents. The eco-labels did not influence the purchasing decisions of about 24 % of the consumers, and the rest neither read the labels (16.6%) nor considered them essential (35.1%). The product ingredients were considered by the consumers (46.3%) to be most important before purchasing green products and certifications from relevant authorities (39%). In contrast, the energy ratings, green credentials, and carbon footprints from the products scored the least - 8.8%, 6.8%, and 3.9%, respectively (Table 3). The energy efficiency of machinery and electronics was rarely of concern to consumers as 42% of the respondents didn't mind purchasing these products than 30.7 % who are always keen on energy use and 27.3% who check out these most of the time when making purchases.

Table 3: Importance of environmental information on eco-labels

Eco-labels information	**Percentage Respondents**
Details about the products' ingredients	46.3
Certification from authorized government/third party institutions	39.0
Whether products can be recycled/reused	33.2
Confirmation that products come from the environmentally-friendly manufacturer	32.7
Instructions to dispose of the product	29.8
Clear instructions on using the product efficiently	24.9
Confirmation that packaging is eco-friendly	20.0
The energy rating of products	8.8
Green credentials of manufacturers	6.8
The amount of greenhouse gas emissions from products (carbon footprint)	3.9

Interventions for environmental awareness

Most respondents (98%) strongly support increasing awareness of environmentally friendly consumption and increasing environmental education (90.7%) as an intervention to increase consumer ecological responsibility. Although a significant number of respondents (31.2%) did not support the idea that NGOs should be the leader in environmental issues, more than half (56.1%) were of the contrary opinion. About 78% of consumers thought that financial incentives

would promote sustainable production and consumption (Table 4).

Table 4: Intervention for increasing sustainable environmental practices

Intervention	No (%)	Not Sure (%)	Yes (%)
Increase awareness on sustainable/environmentally friendly consumption	0	2.0	98.0
Increase environment education opportunities	4.9	4.4	90.7
Provide financial incentives to promote sustainable production and consumption	13.7	8.3	78.0
Let others (NGOs, business, etc.) take the lead	31.2	12.7	56.1
Introduce further legislation	12.2	11.2	76.6

Discussion

General description of the respondents

The current findings on the consumer's awareness in relation to age and the education levels agree with Jonkutė (2016), who reported that the older and more educated the consumers were, the more they comprehended and understood environmentally-related information. Concerning this, the United Nation's Environment Program has recommended educating the population on the need for sustainable production and consumption (UNEP, 2009) for successful implementation, especially in areas where illiteracy and low education levels are prevalent.

A similar study among Sri Lankan consumers showed comparable findings with the current results, where 98% of the respondents agreed that environmental protection was a personal responsibility (NCPCSL, 2018). Correspondingly, only 48% of these respondents were found to understand the impact of the respective products purchased and consumed on the environment, whereby slightly more than a third (35%) of the people were considerate of the products' impacts at consumption levels only. Consumers' environmental concerns have been reported to influence their purchasing decisions in cases where they are informed about the adverse environmental effects and are therefore likely to adopt measures that help prevent unsustainable practices (Mamun et al., 2018). It is thus necessary to enhance environmental sensitizations among Kenyan consumers. However, green products require monetary sacrifices as they are sold at premium prices, which often hinder accessibility by most consumers (Yue et al., 2020). The situation may not be any different among Kenyan consumers.

Consumer SCP and green products knowledge and awareness

Familiarity with sustainable consumption and production terms positively correlated with consumers' attitudes and apparent sense of ecological responsibilities (Hojnik et al., 2019). Therefore, the current study may be an indication of a low inclination towards environmental sustainability. This also corroborates reports by Joshi & Rahman (2015), who asserted that the purchase of eco-products is usually a trade-off between the consumer's environmental regards and the functional attributes desired from these products.

The consumers' willingness to shift their habits should be pegged on adequate sensitization. It is recommendable that programs and policies focusing on promoting environmental awareness and knowledge are implemented (Biswas, 2016). It has, however, been reported by Xu et al. (2020) and Jonell et al. (2016) that as much as there may be declarations on green products, the consumers' determinants before making any green

purchasing decisions are not based on such information at all times but rather the effort required are based on the perceived strategic skills and knowledge of green consumerism. The current findings are in agreement with other studies where it has been found that as much as consumers are capable of preventing environmental damages through purchase and consumption of green products, there is limited evidence that they fare well in the markets occupying only 1-3% of the market share (Joshi & Rahman, 2015) and therefore the success of green consumerism is a function of the willingness of the consumer to go green.

Factors considered when purchasing

The current survey on consumers' considerations of the quality characteristics and pricing before making any purchasing decisions agree with Siddique & Hossain (2018) and Chowsdhury et al. (2020), who found that prices and quality are critical during purchases. Furthermore, the authors reported the ability to buy green products is directly proportional to the level of income whereby consumers with higher pay are the primary clientele of green products. However, increasing awareness of the need to buy environmentally friendly products could help change these perceptions and, in the long run, promote sustainable practices (Biswas, 2016). Other social demographic factors among consumers that have been found to determine positive attitudes towards green products have established that the purchase and consumption of green products are more successful among the female gender compared to the male as the former are more concerned about environmental degradation as a result of their actions (Migheli, 2020).

Sources of information on environmental issues

According to Bengtsson et al. (2018), creating consumer awareness is among the crucial factors influencing purchases of green products, and the sources of such information should also be reliable and objective. Therefore, the successful transition towards sustainable consumption and production practices requires implementing promotional and educational activities and should be prioritized in areas where the concept is yet to be adopted (Siddique & Hossain 2018). A more educated and well-informed population on the status of the environment and the benefits acquired from responsible consumption influences the utilization of green products compared to consumers uninformed about ecological degradation (Shen & Saijo, 2009).

Role of Eco- labels in purchasing decisions

Eco-labels have been shown to generate significant changes that inculcate positive changes in eco-friendly consumption and disposal patterns as they play a role in conveying the manufacturer's information to consumers about environmental impacts along with the product's lifecycle analysis and consequently the need to invest in sustainable agricultural production systems (Liu et al., 2017). Consumers keen on ecolabelling are characterized by reading product labels to ensure green attributes are in tandem with environmental conservation, as reported by D'Souza et al. (2007). These classes of consumers are always willing to buy environmentally-friendly products even if they cost more regardless of the product quality. However, eco-labels are relatively ineffective in markets where consumers' environmental awareness is low (Bleda & Valente, 2009), and therefore, their role may be insignificant among most Kenyan consumers. Additionally, these are limited among repeat customers for a given brand (Bleda & Valente, 2009). On the other hand, they may not be as effective among consumers who find the information quite technical to understand (Kumar & Kapoor, 2017). The extent to which the green declarations made an impression on the Kenyan consumers purchasing decisions in the current study may be an indication of similar behaviour to previous studies, which have shown that as much as consumers may be aware of green consumerism, this does not reflect in the buying and consumption of green products (Bengtsson et al., 2018; Mahenc, 2008).

Interventions for environmental awareness

Most of the environmental problems result from human behaviours, and therefore, there is a need for human behavioural change to counteract the effects (Daugbjerg et al., 2014). These findings show a low consideration of the impacts that purchased products have on the environment and, therefore, a need for consumer sensitization

and education. Successful adoption and implementation of interventions for energy use and energy-saving behaviours at the household level have differed significantly even when the consumers are knowledgeable (Abrahamse et al., 2005). Consequently, information leads to increased knowledge levels, although this doesn't result in behavioral changes or energy savings (Shen & Saijo, 2009). Low rating for the manufacturer's green credentials and gas emissions from products shows low green consumption and indicates limited knowledge of carbon footprint among Kenyan consumers (Shen & Saijo, 2009).

Similarly, Pickett-Baker & Ozaki (2008) also reported that consumers question the credibility of eco-labeled products in the markets. These may be hogwash as much as they can influence the consumers' knowledge of the impacts these products have on the environment (Brécard et al., 2009). There is a need to evaluate the credibility of similar information on the Kenyan products as limited studies on the same have been conducted

Transiting to sustainable consumption and production requires an educated and informed citizenry through various platforms that are beyond academic institutions (Chowdhury et al., 2020). Education is expected to enable consumers to acquire the necessary knowledge and skills to implement sustainable practices, while accessible environmental information through eco-labels, consumer information services, and product information will allow consumers and other stakeholders to adopt sustainable lifestyles (UN, 2015). For effectiveness, however, there is a need for enhancing consumer knowledge on the potential solutions towards minimizing the environmental deterioration through the change of attitudes and practices among consumers (Hojnik et al., 2019).

Although monetary incentive as an intervention in promoting environmental responsibility scored highly, it may be counteractive given that financial rewards or "hidden cost of reward" have been shown to depreciate the worth of an individual's motivation towards responsible environmental sustainability (Brécard et al., 2009). Therefore, this should be discouraged to promote an intrinsic culture of SCP practices among Kenyan consumers. However, given that developing countries are the most affected by climate change, the negative environmental impacts lead to high poverty levels and low development. Accordingly, the United Nations (2015) recommends that financial incentives to fund the scientific and technological infrastructure for capacity to implement sustainable practices be implemented.

Through legislation and the non-governmental organizations (NGOs) involved in environmental matters, the government plays crucial roles in enforcing environmental laws and regulations, promoting environmental protection, conservation, and development, which help ensure environmental sustainability (Badruddin, 2015). The NGOs are also diverse and include operations at the local, national, regional, and international levels, and are collectively dedicated to various environmental governance areas (Gemmill & Bamidele-izu, 2002). The current finding agrees with Popovic et al. (2019), who also reported that consumers assume that the government, in collaboration with other interested organizations, needs to promote pro-environmental purchasing decisions among consumers.

Conclusion and recommendations

The green consumerism concept remains low among Kenyan consumers. The purchasing decisions are driven mainly by product quality and price, whereas the environmental impacts were minor concerns. Although there was low cognizance of sustainable consumption and production practices, most consumers are willing to change environmentally friendly products. We recommend implementing programs and strategies to increase consumer sensitization on consuming ecologically friendly products to achieve these. The influence of eco-labels on the purchasing decisions was also low due to limited knowledge on their relevance, comprehension of these labels, and the possibility of hogwash on the green labels declarations leading to inadequate awareness among most consumers. There is, therefore, a need for processors to develop affordable, sustainable products with minimal trust issues on the declared eco-labels information to boost customer confidence. Although the proposed interventions may help change consumer SCP practices, adoption may

still be low. Therefore we recommend a multi-sectoral approach among key stakeholders on environmental governance to combine efforts to inform and educate the public on the need for sustainable consumption practices.

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