

AN EMPIRICAL INVESTIGATION OF GREEN PURCHASING AND ENVIRONMENTALLY FRIENDLY BEHAVIOUR

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Abstract: The worldwide environment consciousness has increased in healthcare sector while globalization has led to major trend of medical products all over the world. Due to an increasing recognition in environmental impact, hospitals are more precision towards when their purchasing decisions making. The propose of this paper is to demonstrate the importance of green purchasing practices and analyze the effect of environmentally friendly behaviors of healthcare personnel on the purchase process of the public hospital. This study have intended to understand the healthcare personnel behavior to purchase green products in context of a developing country; Turkey. Data were collected from survey of healthcare enterprise in Istanbul and analyzed using SPSS 22. A usable responses were collected with the help of a questionnaire survey using the convenience sampling approach. The analysis result confirms that the ecological awareness of healthcare personnel are significant in determining their hospital's purchase. The results show that green purchase behavior was significantly related with environmentally friendly behavior in public hospital. The research findings provide useful insights for healthcare sectors in Turkey to adopt green purchasing practices.

Keywords: Environmentally Friendly Behavior, Green Purchasing, Hospital.

Introduction

Today the environmental issue has become an important issue among hospitals as well as consumers. The environmental concern has led to an increase in consumers' demand for environmentally friendly products. Hospitals have responded by introducing a variety of green initiatives such as green medical products and equipment. They can develop sustainable marketing strategies targeting these consumers (Kanchanapibul et al. 2013). It is clear that the ways in which consumers choose goods and services have both direct and indirect effects on the environment (Lai and Cheng, 2015). The promotion of environmentally friendly and green purchase behavior is one of the ways to minimize the environmental impact.

The concept of green purchasing is gaining increasing attention among academicians as well as practitioners. The increasing attention towards protection of the natural environment and environmental issue has changed the consumer purchasing preferences (Yadav et al. 2017). The green purchasing has expanded rapidly in the developed nations, but with time this concept is also getting its foothold in the developing nations such as Turkey. The present research has used the theory of planned behavior framework to understand the consumers' behavior towards purchasing green products in the different sectors. In the purpose of this study to evaluate a relationship between the healthcare personnel behavior and purchase green products in Turkey. The analysis findings supported that the ecological awareness of healthcare personnel are substantial in the determination of hospital's purchasing decisions. The results show that there are a positive correlation between green purchase behavior and environmentally friendly behavior in public hospital.

The rest of this paper is organized as follows. Section 2 reviews more relevant literature. Section 3 includes research design, data collection and hypotheses are developed. Also, data analysis is presented including validity and reliability test and hypotheses testing. Section 4 discusses the analysis result and green purchasing implementation in hospital. Finally, we draw conclusions and highlight possible future work in section 5.

Literature Reviews

Purchasing of environmentally friendly products and avoiding of purchasing products, which are harmful to environment, calls green purchasing (Chan, 2001). Consumers' green purchase behavior and their willingness to purchase green products, which is called intention, are the most often indicators of the green purchasing measurement.

In recent times, environmental consciousness has been increased dramatically across to the world. Because of the social and territorial problems as well as consciousness of consumers, the importance of ecology and natural balance has been discussed from the 1980s to the day-to-day process. In our changing world where technology is rapidly developing, modern companies should keep up with approaches to conservation of the environment. Worcester (1993) determined that the pollution and other environmental damage are impacted on their daily life according to 69 percent of the general public. He demonstrated his survey that the public was demanding action by companies and by governments on environmental issues. Another study recommends than consumer awareness of environmental troubles has been growing rapidly in this decade (Cartel et al., 2000).

According to a survey, which held among USA university students, environmental sensitivity vary with age, so, younger people are more sensitive to the environment than the elderly ones. Further results states that women are more interested in environmental issues, education level is positively related to environmental attitudes and behaviors, and people living in cities have more environmental concerns than living in rural areas (Straughan et al., 1999). So organizations not only have to produce more services and contribute to economic development but also have to pay attention to their services and products into conformity with environment. Consumers are closely interested in both purchasing and consuming environmentally friendly goods, furthermore, details of the production process using scarce resources and the waste assessment become an important indicator. As long as the consumers' sensitivity to environmental issues grows, companies' starts to initiate environmental friendly programs, which is called "proactive environmental programs", these programs mainly focus on developing reusable products, conserving energy, reducing and recycling wastes, developing environment first orientation on their corporate culture and codes so on (Handfield et al., 1997; Min et al., 2001). Environmental sensitive management enhanced financial performances of enterprises and values of shares outstanding (Klassen et al., 1996). Due to consumers' this environmental sensitive behaviors, businesses which discharge the duties and responsibilities, and sustaining practices that better protect on nature will be able to survive in the future.

Green logistics is also to be organized sensitively to the environment activities of supplier, distributors and customer. Green logistics involves four main functions such as green purchasing, green product and materials management, green distribution and marketing and lastly reverse logistics. Waste management, such as reducing and recycling of the production related wastes and reclamation of recycled wastes, is also an important part of the green purchase decision making (Min et al., 2001; Sarkis, 2003). Green purchasing refers to manufacturing, buying, packaging, distributing, reusing or disposing an environmentally preferable raw material, product or service. It also means buying a service or product which affects human health or the environment less or poses lower risk compared to its competitor which is used for the same function or purpose (Clinton, 1998).

Over the last decades to explain consumer's environmental purchasing behavior, there are various new articles about green purchasing and related subjects such as green production, green acquirement so on in the literature. Green supplies construction and impacts become a popular subject among researchers, and their journals have been published on several high profile journals such as, journal of purchasing and supply management, transportation research and other journals. Most of them analyzed the correlation between the consumer or personnel behavior and purchasing green products in different markets. Schlegelmilch et al. (1996) assessed the strength of relationship between the measures environmental consciousness and pro-environmental purchase behavior. They stated that attitudes were the most important predictor of pro-environmental purchase behavior. There had been relatively small approaches to classify consumers especially their levels of green purchasing behavior. Follows and Jobber (2000) have tested a consumer model using covariance structural analysis for environmentally responsible purchase behavior and values that are fundamental to explain attitude formation. Individual consequences, taking the personal implications of consumption into account, had been found to be just as important in predicting intention as the environmental consequences of a product. Companies green purchasing effects their performances. Furthermore, green purchasing not only, effects firms net income, but also, effects the cost of sold goods as long as, the firm has been controlling its size, leverage so on (Carter et al., 2000). It was determined the influence of consumers' environmental sensitivity on product choices in another study (Seitz et al., 2001). They found the behavioral factors played a major role in purchasing environmentally sensitive packaged products.

A survey has been held on US firms, which have greater environmental risks. That survey presents empirical results to purchasing department professionals about environmental friendly oriented purchasing strategies, in order to reduce their risks (Min et al, 2001). Empirical results mainly oriented to practicing green purchasing, green purchasing's effects on supply chains, waste management and regulation compliance. In addition, a structural equation model for ecological consumption orientation has been modelled by using previous green purchase orientation (Kim et al, 2005). According to the model, believing about consumer effectiveness vary on social value orientation. As a result of that, social value orientation influence green purchasing orientation. Another survey has been held on young consumers' of Hong Kong, in order to figure out their green purchase behavior. According the Hong Kong survey; young peoples' main aim for green purchasing is social influence which is followed by, environmental concern, self-image in environmental production and sensed environmental responsibility (Lee, 2008). Green supply adoption has five parameters such as, effectiveness, purchase pricing, organizational concerns, health-safety and other partners (Salam, 2008).

A structural model states the relation between environmental performance and the purchasing performance. According to the model, environmental performance has a positive impact on purchasing performance, moreover, green performance vary on both green supply assessment degree and applying level of green collaboration (Large et al, 2011). Young generations' green purchasing behavior's in the context of the influence of ecological affect and ecological knowledge has been examined, and empirical results showed that both the ecological affect and ecological knowledge were very significant on their green involvement and purchasing orientation (Kanchanapibul et al, 2013).

Dubey et al. (2013) argued that green purchasing behavior positively affects the customer satisfaction and market share in manufacturing companies of India. They analyzed their article the theoretical framework and obtained the result that there was a positive correlation between the market pressure, leadership, regulatory framework and quality management. Joshi and Rahman (2015) reviewed 53 empirical articles related to attitude - behavior inconsistencies in the context of green purchasing on green purchase behavior from 2000 to 2014. They have put forward two main reasons that affect consumers' green purchasing behavior; Consumer's environmental concern and functional attributes of the products. Yadav and Pathak (2016) analyzed the consumers' environmental purchasing behavior markers using the theory of planned behavior in emerging markets. The findings described that TPB fully supported the consumers' intention to buy green products which in turn influences their green purchase behavior. In contrast to the others, Schlossberg (1991) and Winski (1991) have argued that there is a weak correlation between consumers' behavior on environmental issues and converting these behaviors into real purchasing behavior.

Liobikien et al. (2017) states the differences between green purchase and their determinants, with subject to, Lithuanian and Austrian data sets. That study recommends that Lithuanian data sources requires to encourage for green purchasing, for practicing environment friendly behavior. The green purchasing intention of the consumers are significantly affected by environmental behaviours and eco-label and cultural values (Chekima et al, 2016). Furthermore, packaging and advertising strategies of the products are the main factors of the consumers' purchasing orientation. As a result of that, packaging and advertising should emphasize individuals' positive effects on particular environmental issues and their green purchase orientation (Lai et al, 2015).

Research Design and Data Collection

In this paper, questionnaire survey has been used to comprehend the green purchasing in healthcare sector. Sample was taken from the public hospital in İstanbul. The survey was executed from January to May 2017. Questionnaire is asked to selected healthcare personnel such as doctors, nurse, and administrative staff in hospital. They are in best position to give opinion on the strategic aspects related to green purchasing in healthcare sector in İstanbul. The questionnaire is devised as "five point Likert scale". Besides, face to face survey method is implemented for administration of the questionnaire. For the purpose of carrying out statistical analysis individual responses are conducted from 1 through 5 accordingly. Furthermore, questions asked to respondents regarding environmentally friendly behaviors related with green purchasing by using 5 point Likert scale.

Collected data are collated both in SPSS 22 and analyses by using an exploratory factor analysis. We employed the principal components analysis with varimax rotation. This contributes to determine the presence of meaningful patterns between the original variables and extract the major factors. Principal component analysis with varimax rotation is employed in order to clarify the dimensions of environmentally friendly behaviors and green purchasing in hospital. Some variables are allocated as an effect of the demographic findings. Since the objective of the questionnaire was to collect the healthcare's personal attitudes, six demographic variables were investigated, namely, gender, age, level of education, income, jobs and operation time of job.

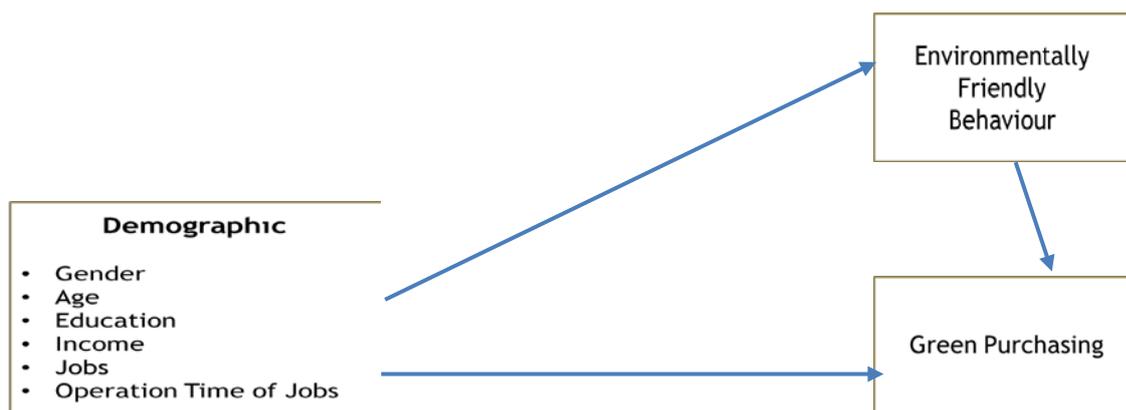


Figure 1: Research Model

Results and Discussion

The profile of respondents includes gender, age, education, income, jobs, and operation time of jobs. The gender has minimal next to less than eleven percent difference; 44.7% male and 55.3% female. The respondents' age is mostly between 20 -30 years old (22.4%), 31-40 years old (24.7%), 41-50 years old (27.1%), 51-60 years old (25.9). Regarding educational attainment; 11.8% graduated a high school, 18.8% graduated a vocational school and 40% had a bachelor degree, 29.4 % had a master degree. In this study, all of the participants are healthcare personnel, moreover, majority of the participants have bachelor degree from different universities and institutes.

In terms of jobs, 38.8% of respondents are nurse, 26.1 % of respondents are doctor, and 34.1% are administrative staff. Healthcare personnel major payment scale lies either in 1500-2000 or 2501-3500 intervals. Furthermore, 38.8% of the participants have been working more than 11 years, as a result of that, employees works long periods in this public hospital.

Table 1: Preliminary characteristics

Measure	Value	Frequency	Percent
Gender	Female	47	55,3
	Male	38	44,7
Age	20-30	19	22,4
	31-40	21	24,7
	41-50	23	27,1
	51-60	22	25,9
Education	High School	10	11,8
	Vocational school	16	18,8
	University	35	40
	Master	25	29,4
Income	1500-2500	18	21,2
	2501-3500	20	23,5
	3501-4500	16	18,8
	4501-5500	10	11,8
	5501-6000	9	10,6
	6000 and over	12	14,1
Jobs	Nurse	33	38,8
	Doctor	23	26,1
	Administrative staff	29	34,1

Operation time of job	Less than 1 year	12	14,1
	1-2 years	9	10,6
	3-5 years	17	20
	6-10 years	14	16,5
	11- 15 years	17	20
	16 and over	16	18,8

For green purchasing implementation, wherever applicable, Cronbach's coefficient (Alpha) is calculated. It is used to calculate internal consistency of responses and reliability in this survey. Here, statistical tests are conducted to prove the reliability and validity of the items measured. First, a Cronbach's alpha test was performed on all the constructs to assess the reliability of the collected data. Items are mainly considered to be valid if their alpha factor exceeds a level of 0.70. The Cronbach's alpha coefficient of this study is 0,812. On this scale, they are determined to have a high reliability.

Table 2: Descriptive statistics

	N	Mean	Std. Error of Mean	Std. Deviation
Environmentally friendly behaviors	100	4,2094	0,6226	0,57396
Green purchasing	100	3,5588	0,9943	0,91674

Table 2 provides a brief summary of the responses. The mean and standard deviations are calculated to explain the current situation for environmentally friendly behaviors and green purchasing. The means show in Table 2 are in range 3,55 – 4,20. It points out that public hospital in Istanbul have already implemented actions to integrate green purchasing implementation. The standard error mean describe in range 0,62 - 0,99 and standard deviations define in range 0,57 – 0,91.

Table 3: Green Purchasing Frequency

Green Purchasing		1	2	3	4	5	Total
It is considered how this product will affect both the patient and the hospital when purchasing a product	Frequency	1	4	16	26	38	85
	Percent	%1,2	%4,7	%18,8	%30,6	%44,7	%100
Our hospital is purchasing reusable products.	Frequency	5	14	30	22	14	85
	Percent	%5,9	%16,5	%35,3	%25,9	%16,5	%100
Our hospital chooses to purchase products that are not over-packed.	Frequency	4	17	17	30	17	85
	Percent	%4,7	%20	%20	%35,3	%20	%100
Our hospital checks the signs and symbols on the environment when purchasing products to see if they are environmentally friendly.	Frequency	7	13	12	18	35	85
	Percent	%8,2	%15,3	%14,1	%21,2	%41,2	%100

Our hospital is cooperation with suppliers who are ISO 14001 certified.	Frequency	8	11	28	18	20	85
	Percent	%9,4	%12,9	%32,9	%21,2	%23,5	%100
Our hospital chooses suppliers by setting environmental criteria in the procurement process.	Frequency	4	19	21	23	18	85
	Percent	%4,7	%22,4	%24,7	%27,1	%21,2	%100

According Table 3, some questions which are “our hospital is purchasing reusable products” and “our hospital is cooperation with suppliers who are ISO 14001 certified”, explain that unstable rates are so high. Healthcare personnel support that hospital is considered how this product will affect both the patient and the hospital when purchasing.

Table 4: Correlation between environmentally friendly behaviors and green purchasing

Green Purchasing	r	p
G1:It is considered how this product will affect both the patient and the hospital when purchasing a product	0,473**	0,0005
G2:Our hospital is purchasing reusable products.	0,555**	0,0005
G3:Our hospital chooses to purchase products that are not over-packed.	0,219*	0,44
G4:Our hospital checks the signs and symbols on the environment when purchasing products to see if they are environmentally friendly.	0,431**	0,0005
G5:Our hospital is cooperation with suppliers who are ISO 14001 certified.	0,89	0,42
G6:Our hospital chooses suppliers by setting environmental criteria in the procurement process.	0,191	0,80

** . Correlation is significant at the 0.01 level (2-tailed).

*.Correlation is significant at the 0.05 level (2-tailed).

Table 4 has been examined whether there is a relationship between environmentally friendly behaviors and green purchasing in public hospital. In the correlation analysis, we found that G1-G2-G4 have a significant positive impact. Furthermore, Correlation coefficient (r) appear to be significant at the 0.01 and 0,05 level and in the same direction of the relationship. In this context, thirteen hypotheses in Table 5 below has been provided and has been analyzed by using different analysis methods. T test and Anova analysis has been carried out to find out, whether there is any statistical difference between demographical characteristics and environmental friendly behavior of the survey participants. The accepted hypothesize states that, there is a statistically meaningful difference between demographical characteristics and environmental friendly behavior with respect to income, occupation, operation time of occupation variables. On the other hand, this hypothesis has been rejected based on gender, age and education variables. Furthermore, survey participants’ demographical characteristics against green purchasing orientation has been examined as well. As a result of the analysis, there is a statistically meaningful difference between income, occupation and green purchasing variables. Correlation analysis shows that there is a relation between environmental friendly behavior and green purchasing

Table 5:Results of Hypotheses

Hypotheses		Results
H1	Gender - The environmentally friendly behavior	Not supported
H2	Age - The environmentally friendly behavior	Not supported
H3	Education - The environmentally friendly behavior	Not Supported
H4	Income - The environmentally friendly behavior	Supported
H5	Jobs - The environmentally friendly behavior	Supported
H6	Operation Time - The environmentally friendly behavior	Not supported
H7	Gender - Green purchasing	Not supported
H8	Age - Green purchasing	Not supported
H9	Education - Green purchasing	Supported
H10	Income - Green purchasing	Supported
H11	Jobs - Green purchasing	Supported
H12	Operation time - Green purchasing	Not supported
H13	The environmentally friendly behavior - Green purchasing	Supported

Conclusion

Growing consumer awareness of the environmental and social impacts associated with product consumption facilitates penetration. The statistical analysis confirmed that environmentally friendly behavior of healthcare personnel have a significant impact on green purchasing. Our results also showed that they have a higher degree of theoretical knowledge of ecology. However, all the respondents point out strong bond with ecological study were likely to be deeply involved in green purchasing. The study explains that personal affective response is a key motivation to actually become involved in green purchasing.

The objective of this paper was to analyze how green purchase is related to environmentally friendly behavior in public hospitals. It is very important to promote the environmental awareness particularly in Turkey. The high correlation with significant reliability is evidence to support the verification of the hypothesis. This highlights the importance of creating favorable conditions in terms of availability which may facilitate and ease hospital's decision of buying of green products. Healthcare personnel encourage that hospital is decided how this product will affect both the patient and the hospital when purchasing medical equipment. In the purpose of this study to evaluate a relationship between the healthcare personnel behavior and purchase green products in Turkey. The analysis findings supported that the ecological awareness of healthcare personnel are substantial in the determination of hospital's purchasing decisions. The results show that there are positive correlation between green purchase behavior and environmentally friendly behavior in public hospital.

In addition, the findings revealed that income and jobs have a significant positive effect in the environmentally friendly behavior. Results point out that education, income, jobs have a significant positive effect in the green purchasing. It is imperative that businesses adopt environmental implementation. In order to maintain the consumer society, hospitals need to focus on delivering satisfaction. As long as the environmental ideology is dominant, the green purchasing will be prosperous with a greater number of consumers. Future research might be conducted by extending the research into general environmental attitudes and green purchasing, which may be indicated by comparing public, university and private hospitals

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