Examining the key Determinants in Awareness of Managing Household Waste Management.

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Abstract: This paper seeks to explore the significant antecedents in enhancing the awareness to manage household waste among the citizens. This research was cross-sectional in its nature and applied survey methodology, involving a sample of 150 respondents' from Dhaka city capital of Bangladesh. The research discovered that the major variable that influences the awareness of managing household waste management perceived by the respondents were the usage of online social networking. Hence the role of online social network, thus helped the individual member of the society to enhance the level of awareness in the waste generate from the household. This research is one of the initial attempts under the context of Bangladesh, where the researchers revealed the key determinants in enhancing the awareness level of managing household waste management, and hence it bears significant implications for both academics and practitioners.

Keywords— Household Waste Management, Online Social Network, Knowledge sharing, Television Commercial, Bangladesh.

1. INTRODUCTION

Household waste management is defined as the process of collection, transportation, processing, treatment and proper disposal or reuse of waste (Robinson, 1986; Zia & Devadas, 2007). In Bangladesh the population increasing at an alarming rate (UNDP & Proshikha, 2011), while the increasing amount of household waste is also brought forth in a huge amount from every house especially from the Dhaka city from the citizens' daily routine household activities. Waste is the result of human activities and hence the success of even the best waste management plan becomes dubious without proper understanding of waste management issues (Hasan, 2004). Although per person waste generation is lesser than other developed nation, but the overall quantity of waste generated from family is high due to Bangladesh's length and density of the population. In major cities such as Dhaka and Chittagong, the waste generated is more; due to its massive amount of population migration and poor management and infrastructure in the handling of waste. As people are reluctant in this topic due to the deficiency of awareness about the impact of waste and knowledge in processing of handling the household waste (Ibrahim et.al. 2015). Therefore, household wastes create pollution in the environment and clogging the drainage system within the metropolis. Consequently during the rainy season, drainage water is not properly in its original motion towards its goal, causing streets to flood of the contaminated water. In fact, the poor drainage system and poor handling of waste are causing spoilage of rivers, land and air. Therefore, there is a huge scope of taking an initiative to address the issue of household wastes and letting the citizens aware of how to manage them properly. Therefore, immediate research is urgent to examine the existing nature of the issues of household waste management and testing the antecedents of the awareness in regards to waste management. The aim of this research is to examine the current scenario of household waste and explore the key determinants in enhancing the awareness of the general citizens in regards to managing the household waste. Although, the current government has taken numerous initiatives of handling household waste, but there is still a research gap in the awareness creation among the member of the societies on the handling and managing their household waste. This research applied survey methodology to collect the primary data from the single household member and used multiple regression analysis to examine the key determinants of the awareness in regards to household waste management. As the research will examine the survey findings, which can be applied to better infer the operation and make more efficient campaigns in addressing the issues of household waste management. The findings from this work will definitely serve the ministry of environment, policy makers of the city corporation and the media to rethink their strategy in order to utilize a competitive drive for awareness building in bringing off the household waste.

2. LITERATURE REVIEW

How society should treat with household waste has become a major policy issue for the developing economies, with respect to concern for environmental and natural resource areas (Choe & Fraser, 1998). The need for improving the operation of household waste management was expressed openly at the 1992 Earth Summit due to the environmental concern. Waste generation has begun to increase drastically owing to the growth in world population and thereby, the resultants increase in demand for food and other essentials. According to Jacob et.al., (2014), the quantity of waste generated daily by each household started to grow and thus posing difficulties for the municipal authority in waste collection, handle the volume of wastes; resulting in dangerous health impacts on the surrounding environment (Thirumarpan et.al., 2015). Waste management is the process of collecting, transporting, processing or disposing, managing and monitoring of waste materials. The term usually relates to materials developed by human activities and the operation is generally guaranteed to

bring down their effect on health, the environment or aesthetics. Poor waste management has been a major problem to human health and existence, affecting negatively in both rural and urban areas overall environment (Adogu et.al., 2015). Proper waste management is thus a central key to environmental sustainability (Nwofe, 2015).

It is more often than not regarded that waste management is the sole duty and responsibility of local government agencies, and that the public is not required to contribute (Vidanaarachchi et al., 2006). Knowledge sharing has been regarded as a key variable affecting environmental action. It has been indicated that higher levels of environmentally relevant knowledge sharing by the citizens play a significant role in modifying environmental behavior in order to curb the pollution (Bhawal Mukherji et.al., 2016). Environmental consciousness and environmental knowledge sharing have positive correlation; by increasing environmental knowledge sharing the environmental awareness will increase (Rahim & Jalaladeen, 2016). Festus & Ogoegbunam (2012) noted that improper administration and management of household solid wastes is a source of air, soil and water contamination, which creates hazards to humans, animals and the surroundings. It is a major environmental concern to many nations, especially for the developing nations. Hence, awareness and education are effective in changing perceptions and attitudes towards waste management. The efficiency of solid waste management depends upon the dynamic participation of both the municipal agency and the citizens of the corresponding areas through knowledge sharing (Guerrero et.al, 2013). Thirumarpan et al. (2015) stressed that the government must step up its proper solid waste management through introducing various educational programs to increase the consciousness level of families. According to Hasan (2004), an important aspect of waste management program involves public awareness and participation, knowledge sharing, appropriate legislation, strong technical documentation and adequate financial support by the government and nongovernment agencies. Thus, this throws light on the significance of public awareness and how mismanagement of waste might pose a serious threat to their lives and well being.

Hypothesis 1: There is a significant relationship between knowledge sharing in regards to household waste management and possible scope in developing an awareness campaign around it.

Individual citizen's choice and basis towards sustainable environment has already accepted by the United Nations Education, Science and Cultural Organization (UNESCO), therefore the decision to mitigate waste, minimize reliance on fossil fuels and other environmental decisions and factors must be initiated at a personal level (Zita et.al., 2014; Department of Energy and Environmental Protection, 2014). The term "Social Media" refers to the role of network-based and mobile technologies to turn communication into an interactive dialog. It is a kind of electronic communication through which users create online communities to share info, thoughts, personal messages, and other capacity such as photographs and videos (Hughes et.al., 2012). One of the most popular social networking websites in the universe today is Facebook, with more than 1.5 billion active users; other social media involves YouTube (over 1.0 billion users), Instagram (400 million users), and Twitter (320 million users) (Rahim & Jalaladeen, 2016). Granting to the research findings of Zita et.al., (2014), Facebook is one of the most effective social media platform use to distribute the information and initiate "green practices" among the citizens. For example, the Indian government has already created its official social network page on Facebook under the name of Solid Waste Management, MCGM and Twitter handle (@MCGMswm) in order to spread the awareness about the solid waste management (SWM). The government also initiates interesting and creative campaigns under their "Clean Up" program to drive in Mumbai city to handle the waste through social media (Singh, 2015). Therefore, social media sites such as "Twitter", "Facebook", etc. are playing a crucial purpose for sharing intelligence, information, articles for staying informed on environmental topics towards the individual citizens (Kushwaha, 2015; Rahim & Jalaladeen, 2016; Hamid et.al, 2016). Granting to the report by CMS ENVIS Centre on Environment & Media (2014), there is a strong relationship between the perceived media richness of online social media and the perceived awareness towards the environmental science and environment. In addition, Akpoghiran & Otite, (2013) argued that of all forms of outdoor or out-of-home advertising, billboard advertisements are designed to capture and fix public attention in regards to particular slogans. On the other hand, television, commercial also plays an prominent part in creating consciousness in regards to environmental health education among the citizens (Nazari, et al., 2009). The results from the research of Nazari et al., (2009) revealed that TV commercials create awareness in all aspects on waste material management among the individual citizen (Nazari et al., 2009). Electronic advertising through television and radio channels are really powerful to inform citizens of waste collection arrangements and to raise citizens to take part effectively in the prescribed manner (Nabegu & Mustapha, 2014). Based on the above discussion, the following hypotheses develop for further empirical examination.

Hypothesis 2: Online social media play a significant role for initiating and developing awareness on household waste management.

Hypothesis 3: Television commercials are effective medium in creating awareness on household waste management.

3. METHODOLOGY

The population for this research comprised of individual member of household from various locations in Dhaka city. This study applied survey methodology to the individual citizens from the major city in Bangladesh. This research ensured content validity through pre examining the questionnaire by conducting survey from 20 respondents, given them enough time to give their answer. The researchers applied convenience sampling method where the researchers collected 150 respondents response out of 200 distributed

instruments from the Dhaka city. The items of the questionnaires were operationalized by adapting from the previous research which were measured in a five point Likert scale response format such that: 1= strongly disagree to 5= strongly agree. The researcher used the Statistical Package for Social Science (SPSS) to obtain a count of the number of respondents associated with different values of the variables and to express it in a percentage term. Data analysis methods were used for this research are: reliability Analysis, descriptive statistic analysis, frequencies analysis, and Multiple Regression Analysis to test the hypotheses.

The reliability of the scale was assessed through the internal consistency measurement by using Cronbach's coefficient alpha, awareness on household waste was measured by 6 items scale with alpha=0. 762, Knowledge about household waste was measure by 6 items scale with alpha= 0.727, the impacts of social media to increasing awareness was measured by 6 items scale with alpha= 0.763, and television commercial (TVC) was measured by 6 items scale with alpha= 0.737. Therefore, the researchers confirmed that all the variables are in acceptable level in their respective internal consistency.

The researchers used only 150 respondent's response the male respondents were 70%, whereas female were 30%. As 85% of the respondents agreed that the issue of household waste and its discussion belonging to all scientific in nature and a significant number of respondents (70%) were not concerned about the household waste management. Most of the respondents (90%) agreed that over the year they haven't observed any significant awareness campaign regarding household waste management. Ultimately, the majority of the respondents perceived that every member of the society, including the governments are affected by the poor handle of household waste and need to act proactive steps in this matter. Apart from that, majority of the respondents (90%) were concerned about the availability and accessibility of information on the phenomenon through the mass media (TV, internet, social media). This research also explored that majority of the respondents (78%) believed that the government can also play an important role in building awareness programs through the young generation by highlighting the major impact of household waste to the member of the society.

4. DATA ANALYSIS

The result from the model summary of the regression output revealed that how much of the variance in the dependent variable (awareness of house hold waste management) is explained by the model (which includes the variables: knowledge sharing, online social network and television commercial The multiple regression model with all the three independent variables produced R-squared = .445, $F_{(4, 5.923)}$ means that the model explains 44.5% of the variance in awareness of household waste management. The result from ANOVA output also used to assess the statistical significance of the result. The model in this research thus achieved statistical significance (sig. = .000; this really means $p<0.00$). The result from the multiple regression also

confirmed that VIF (Variance inflation factor) values for all the independent variables is within 0.756 to .784 which is not even less than the threshold level, thus the researchers were not violated the multicollinearity assumption. This is also supported by the VIF values which are less than 10.

Ignoring any negative signs out the front in the data analysis found that the largest beta coefficient is .368, for online social network. This means that online social network variable play the significant contribution towards the change of the dependent variable (awareness of household waste management), when the variance explained by all other variables in the model is controlled for. The beta values for knowledge sharing and television commercial are accordingly, 0.291, 0.210 reflect less influence on the dependent variable. After replacing the b values into the equation the researchers can define the model in an equation. From the coefficient matrix this research can generate (Y) awareness of household waste management = $\beta 0 + \beta 1 \ X1$ (knowledge sharing) + $\beta 2 \ X2$(online social network) + $\beta 3 \ X3$ (television commercial). Based on the statistical result the following equation is generated it will be; awareness of household waste management = -0.780 + (.291) (knowledge sharing) + (.368) (online social network) + (.210) (television commercial). For the significance test of each variable, from the researchers have checked the value in the column marked sig. From the research, P value of online social network (H2) is .003 means P< 0.005. Thus, the researchers accepted H2 which means that online social media play a significant role for initiating and developing awareness on household waste management. On the other hand the P values of remaining two variables were above 0.005 levels. As a result the researchers rejected H1 and H3.

5. DISCUSSION AND IMPLICATIONS

As the generator of the household wastes, it is the responsibility of every citizen to manage and handle household wastes properly in order to control the pollution in all aspects. This cannot be achieved until citizen in a respective area are not aware of the consequences of the improper management of waste. It has become necessity for people in Bangladesh to be knowledgeable about managing households waste properly. Thus this research assist the respective agencies to identify the significant determinate to influence the awareness about the managing of household wastes. The current study employed a survey-based methodology to assess awareness levels of people residing in an urban setting. The paper also presents the current waste management scenario and suggests a direction to enhance the awareness level through three aspects such as knowledge sharing, online social media and television commercial. The study findings could help in designing customized awareness programs for addressing this concern more effectively and efficiently. This research has contributed to the household waste research in various aspects. Most importantly, it has bridged the gap on the scarcity of research in investigating the creating of awareness campaign towards household waste by using three important marketing tools. The finding from the statistical results found that most of the respondents are keen

to aware about impacts relating to household waste management through online social network due to its significant use. Thus respondents are keen to develop awareness campaign through community involvement. Therefore, the policy makers should focus on various online social media in order to spread the emergency of household waste management. As most of the respondents replied social media creates most emotional attachment with people as it has two way communication and peoples are able to share their thoughts also.

The researchers also suggest that introducing various public education programs through online social network may assist to enhance the awareness level of the general people and provide information and adequate knowledge on the causes and effects of household waste for proper mitigation and adaptation options. In addition, government and non-government agencies need to develop effective marketing strategies through online social network to upgrade their technological capabilities and develop their efficient marketing activities in order to enhance the individual citizens in managing proper way of household waste.

6. DIRECTION FOR FUTURE RESEARCH

There are few limitations exist in this research; firstly this research is a cross-sectional and collected data only from Dhaka city. Second, this research used convenient sampling procedure to collect the data from individual from a specific state of Bangladesh. Further research efforts are being needed to examine the antecedents of awareness development under the mind of larger sample in regards to household waste management.

7. REFERENCES

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