A Study on Consumer Consciousness and Behavior to the Plastic Bag Ban in Kenya

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1. Introduction

Terrestrial and marine plastic pollution related to plastic waste has been established in terms of marine debris, plastic leakages, mismanaged plastic waste and microplastics. The greatest contributor is plastic packaging that have a lifespan of less than one year. To manage the problem, command and control, and economic policies are increasingly being adopted by nations. Kenya adopted a plastic bag ban through Gazette notices No. 2334 and 2356 in 2017. The ban prohibits manufacture, importation and use of plastic bags for secondary packaging. It also carries fines of about $20,000 - $40,000 or 1 - 4 year prison terms or both. Legally recommended bags included reusable plastic based bags, jute bags, paper bags, cloth bags and 100% biodegradable bags.

The overall objective of the current research is to explore the impact of the plastic bag ban in Kenya for further improvement. The research assesses citizens attitudes and behavior response to the ban and lead (Pb) screening in reusable bags.

2. Methodology

The data for the study was obtained through face to face questionnaire survey in March 2019 where 150 respondents participated. Data was collected in both urban and rural environments with participant coverages of 60% and 40% respectively. Questionnaire constructs were demographic characteristics, previous plastic bag reception, reusable bag usage, attitudes towards the ban and usage of plastic products. And the baseline plastic bag problem before the ban was estimated using the results of questionnaire survey. Descriptive statistics was generated from MS Excel spreadsheet. Additionally, 7 polypropylene reusable bags of different colors were collected from two shops for Pb screening. It was performed using Olympus Innov-X Alpha 6500 XRF Analyzer in Kyoto University.

3. Results and Conclusions

Majority of the respondents were female (64%), below the age of 40 years (80%) and earned less than Kenya Shilling 40,000 (83%) per household as monthly income.

On aggregate 67% of the respondents supported the ban, 18% did not support the ban while 15% were neutral. Recent government statistics report 80% national compliance. Urban respondents agreed to higher environmental awareness with reference to cleanliness and waste management than rural area respondents.

In terms of reusable bag usage, the ban increased reusable bags ownership 3 fold from an average of 4 bags before the ban to 12 bags after the ban per capita. By material, plastic based reusable bags are the most owned bags (8 bags per capita) and also the most discarded reusable bags (69%) within 6 months. Reusable bags require more resources to produce hence usage frequency is important. Nevertheless, Pb screening in reusable bags were below detectable limits.

The annual plastic bag generation per capita was estimated to be 138 bags before the ban. Consumption was however higher in urban than rural area at 160 bags capita^{-1} y^{-1} and 125 bags capita^{-1} y^{-1} respectively. The plastic bag ban thus potentially eradicates about 6.2 billion bags annually from getting into the waste system in Kenya.

Additional research is however required to establish the environmental benefits of reusable bags especially the usage frequency. Such improvements not only help minimize waste generation but also reduces associated environmental burden. The ban includes thin clear plastic bags that are sometimes exempted due to food safety reasons. Thus, the Kenyan experiences shows the need to establish clarity on standards for reusable bags before implementation of policies and suitable targets to achieve several aspects including safety and sustainability.