

Assessing Consumers' Knowledge Regarding Adverse Effects of Consumption on Environment and Climate Change

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(Received 4 December, 2023; Accepted 16 January, 2024)

ABSTRACT

In the contemporary era, the way we consume resources and products transcended mere personal choices; it evolved into a powerful force shaping the destiny of our planet. Human consumption, whether it is the food on our plates, the clothes we wore, the energy that powered our homes and vehicles, or the immediate goods we acquire, play a pivotal role in determining the state of our environment and the course of global climate change. The study is aimed to determine the knowledge of respondents regarding the adverse effects of consumption on the environment and climate change while also shedding light on the demographic factors that affected the knowledge level of respondents. 240 respondents were studied from two districts of Uttarakhand State. A chi-square test of independence was applied to find the association between demographic attributes and knowledge regarding the adverse effects of consumption on the environment and climate change.

Key words: Consumption, Environment, Climate change, Knowledge

Introduction

In an era marked by unprecedented global challenges related to environmental degradation and climate change, understanding consumers knowledge towards the adverse effects of consumption on the planet has become paramount. It is crucial to scrutinize consumer knowledge and attitudes concerning the detrimental effects of their choices in key consumption areas: food, clothing, household products, and transport. The consumption patterns of individuals and societies worldwide play a significant role in exacerbating or mitigating these environmental crises. As consumers, our choices regarding what we buy, how we use resources, and our overall awareness of the environmental consequences of

our actions can collectively influence the trajectory of climate change and environmental sustainability. The actions today will determine the quality of life for future generations and the state of the natural environment. The environmental challenges we face are multi-faceted, encompassing climate change, resource depletion, habitat destruction, and the loss of biodiversity. These issues are intrinsically linked to the way we consume resources and products in our daily lives.

Methodology

The study employed a descriptive research design to investigate respondents' knowledge concerning the adverse effects of consumption on the environment

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and climate change. Purposive sampling guided the selection of specific areas, focusing on two districts in Uttarakhand state: Udham Singh Nagar and Nainital. A total of 240 respondents were chosen through random sampling. Data collection involved personal interactions utilizing a well-structured interview schedule to gauge respondents' comprehension of the environmental and climate impacts of consumption. Additionally, a researcher-designed knowledge assessment tool was employed to explore various factors influencing the environment, including food, clothing, household pro, and transportation consumption.

Results and Discussion

This study aimed to assess respondents' knowledge of the adverse effects of consumption on the environment and climate change. According to the research findings, 22.50 percent of the respondents fell within the 18-30 age group, while only 11.67 percent were in the 46-60 age group. In terms of education, 31.67 percent were graduates, 27.50 percent were postgraduates, and merely 10.42 percent were employed in the private sector, with 6.25 percent being unemployed. Over half of the respondents (52.92 percent) reported a monthly family income exceeding 100,000, whereas only 8.33 percent had a family income between 50,001 and 75,000. Furthermore, 52.92 percent of the respondents were unmarried. Regarding family structure, 42.08 percent belonged to nuclear families, and almost half (47.50 percent) resided in urban areas.

Food: Today's food system must enhance sustainability (Willett *et al.*, 2019). The study found that 79.58 per cent of the respondents recognize the environmental impact of wasted food in landfills, attributing dangerous greenhouse gas emissions to meat consumption (75.83 per cent). Specifically, 72.08 per cent of the respondents associate environmental responsibility with large-scale meat consumption. Moreover, 70.42 per cent of the respondents acknowledge the contribution of food waste to resource depletion, generating CO (67.92 per cent) and impacting biodiversity (62.50 per cent). About 61.25 per cent of the respondents believe meat consumption is a major contributor to global warming. While 57.92 per cent agree on greenhouse gas release, only 34.17 per cent of the respondents' link wastage to the global biodiversity impact. A suggested solution involves enhancing consumer

awareness for sustainable food choices (Camilleri *et al.*, 2019).

Clothing: Fast fashion promotes a disposable view of clothing, with the average American discarding about 80 pounds annually, occupying nearly 5 per cent of landfill space (Alden Wicker, 2016). Regarding clothing, 96.67 per cent of the respondents acknowledged that untreated toxic wastewater from textile factories is directly dumped into rivers. Additionally, 94.17 per cent of the respondents expressed concern about the environmental impact of dyeing processes in textile production. A staggering 91.25 per cent of the respondents recognize that the production of clothing contributes to climate change, releasing substantial amounts of gases. Furthermore, 87.50 per cent of the respondents acknowledge that excessive clothing purchases place an unnecessary burden on the planet. Many respondents (82.08 per cent) agree that decomposed clothing leach toxic chemicals and dyes, affecting soil, groundwater, and water sources. The study also highlights that increased clothing production affects water sources, such as rivers and streams, due to high production levels, as agreed by 74.58 per cent of the respondents. Textile dyeing results in additional hazards as untreated wastewater from dyes is often discharged into local water systems, releasing heavy metals and other toxicants that can adversely impact the health of animals in addition to nearby residents (Khan and Malik, 2014).

Household: The most widely acknowledged practice was the impact of using air conditioning or heating on increased energy consumption, with an impressive 91.67 percent recognizing its significance. Following closely, 91.25 percent of respondents acknowledged that households use energy directly or indirectly (through lighting and heating). Additionally, 87.92 percent recognized the effectiveness of using energy-efficient appliances and bulbs in reducing overall energy consumption. Proper insulation and sealing in homes to improve energy efficiency garnered recognition from 82.5 percent of respondents. Furthermore, 83.75 percent acknowledged that household water usage, such as long showers or leaving taps running, affects water conservation. 82.08 percent acknowledged that burning fossil fuels releases CO₂, a greenhouse gas, into the air. Increasing fuel consumption, although slightly lower at 85 percent, was also recognized as contributing to harmful environmental effects. The impact of leaving electronic devices on standby mode, al-

though still recognized by 70 percent of respondents, showed a slightly lower level of awareness compared to other practices. Moving to single-use items, 67.50 percent of respondents acknowledged that a single-use bottle like aluminium can, steel can, or reused glass can have the highest environmental impact.

Transportation: The expansion of transportation infrastructure was universally recognized, with 100 percent agreement among respondents. Noise pollution and carbon monoxide emissions from transportation were acknowledged by 89.17 percent. Vehicles emitting numerous pollutants such as CO₂ and NO₂ were recognized by 76.25 percent. Transportation infrastructures damaging ecological systems and runoff from roads introducing harmful chemicals into nearby water bodies were acknowledged by 71.67 and 72.5 percent of respondents, respectively. Furthermore, 54.58 percent recognized

that transport is a major user of energy and burns most of the world's petroleum. Finally, the construction and maintenance of transportation infrastructure contributing to soil erosion and disrupting natural drainage patterns were recognized by 55 percent of respondents. The fact that the transport sector contributes to greenhouse gas emissions

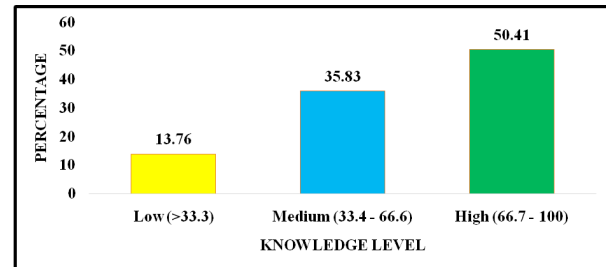


Fig. 1. Percentage distribution of respondents according to extent of knowledge towards adverse effects of consumption on environment and climate change

Table 1. Distribution of respondents according to their demographic profile (n=240)

Demographic characteristics	Category	Frequency	Percentage
Age	18-30	111	22.50
	31-45	71	16.67
	46-60	40	11.67
	Above 60	18	15.83
Educational Qualification	Intermediate	33	13.75
	Diploma	25	10.42
	Graduate	76	31.67
	Post- Graduate	66	27.50
	Doctorate	40	16.67
	Student	54	22.50
Occupation	Unemployed	15	6.25
	Private Job	64	26.67
	Government Job	25	10.42
	Business/Self Employed	62	25.83
	Homemaker	20	8.33
Monthly Family Income (In Rupees)	Upto 25,000	15	6.25
	25,000-50,000	42	17.50
	50,001-75,000	20	8.33
	75,001-1,00,000	37	15.42
	Above 1,00,000	126	52.50
Marital Status	Unmarried	127	52.92
	Married	101	42.08
	Widower/ Widowed	4	1.67
	Divorced	6	2.50
	Separated	2	0.83
Type of Family	Nuclear (2-4 members)	101	42.08
	Joint (5-8 members)	92	38.33
	Extended (Above 9)	47	19.58
Area living in	Rural	76	31.67
	Urban	114	47.50
	Town	50	20.83

around 24% globally indicates that human activities, e.g., passenger and freight traffic, power transportation from burning fossil fuels, industrialization, electricity production, and international trade, are the leading emissions contributors to rising ecological mortification (Hussain *et al.*, 2021; Jin *et al.*, 2022; Konc *et al.*, 2021).

Assessment of Respondents' Knowledge

The knowledge test categorized respondents' understanding of the adverse effects of consumption on the environment and climate change as "good," "medium," or "low." Analysis showed over half of the respondents had a high level of knowledge, 13.76% had low knowledge, and 35.83% had a medium level. These results indicate substantial awareness among respondents about the environmental impact of consumption, emphasizing the need for ongoing efforts to promote awareness and education on sustainable consumption practices and their environmental impact.

Chi-Square tests revealed significant associations between certain independent variables and respondents' knowledge levels on harmful effects of consumption. Gender (Chi-Square = 8.774, $p = 0.012$), monthly family income (Chi-Square = 15.916, $p = 0.044$), and type of family structure (Chi-Square = 18.443, $p < 0.001$) were found to significantly influence knowledge levels. However, age, educational qualification, occupation, marital status, and area of residence did not show statistically significant relationships with knowledge level.

Conclusion

The research revealed a significant level of knowledge among the surveyed population regarding the environmental impact of consumption on climate change and the environment. However, while more than half of the respondents demonstrated a high level of knowledge, a smaller percentage had limited knowledge. Gender, income level, and family

structure were found to significantly influence knowledge levels. These findings highlighted the need for ongoing efforts to promote awareness and education on sustainable consumption practices and their impact on the environment.

Conflict of Interest- None

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