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STATISTICAL ANALYSIS OF ENVIRONMENTAL IMPACTS FROM BALLPOINT PEN USAGE AND DISPOSAL

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Abstract

The survey was conducted using ballpoint pens (BPPs) based on age group, profession, and waste directly impacting the environment. The overuse of BPPs in India was assessed with the human perception that resulted in environmental pollution. This study was carried out over two years with a 4-month extension of the COVID-19 pandemic. The survey revealed that an individual's weekly average use of BPP is about one pen and was found to be a positively skewed and leptokurtic normal distribution with different age groups. The computational study has shown around 49.92 billion tonnes of BPPs are used annually in India alone, resulting in about 5.5 million tonnes of plastic waste generation. Further, BPP's estimated carbon footprint is 4.83 MTCE/ton of plastic. Furthermore, 90% of the participants strongly believe fountain pens (FPs) are an alternative due to being eco-friendly and reusable.

Key words: Ballpoint pen, Fountain pen, Plastic disposal, Statistical analysis, Indian survey, Waste management

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