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Microplastic Pollution: Exploring the Role of Social Class on Awareness, and Exposure

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Abstract. *This research examines the complex relationship between social class and awareness of microplastic pollution, revealing that socioeconomic status alone cannot fully explain variations in public understanding and concern. Although previous studies often associate lower socioeconomic groups with higher environmental vulnerability, the findings of this study derived through qualitative methods, literature reviews, and interviews show that the link is far more nuanced. Factors such as access to credible information, quality of environmental education, cultural habits, and community-level norms play equally significant roles in shaping individuals' perceptions and behaviors toward microplastic pollution. The results indicate that addressing microplastic pollution requires more than single-dimension solutions focused solely on socioeconomic disparities. Instead, a multidimensional approach involving improved public education, policy reforms that promote environmental responsibility, and active community participation is essential. Only through the integration of these elements can efforts to mitigate microplastic pollution become more effective and sustainable across in different social groups.*

Keywords: *Environmental Education; Karl Marx; Microplastics; Public Awareness; Social Class.*

1. INTRODUCTION

The ocean ecosystem, once brimming with wildlife, is now under attack from various threats from external sources. Whether it would be from overfishing, or natural disasters, the disruption of the marine ecosystem is a problem that cannot be ignored any longer (Putra, et al., 2024) While overfishing and natural disasters are problems that can bring long-lasting effects, disruption of the marine food chain is still a huge issue with no specific cause to it. Although this is true, there is still one factor that brings a bigger problem than any of them, microplastics. The fact is, according to the United Nations, there are a staggering 50 trillion microplastics in the ocean (Matthew Rozsa, 2023). 50 trillion is not a small number. The number is so large that chances are, we have eaten fish with microplastics in their body (Celine, 2022).

The implications extend well beyond the marine ecosystem and could have major effects on human health and the global economy. Research has revealed that there are microplastics in fish tissue, raising concerns about the hazardous nature of microplastic contamination, and the need for special attention (Simul Bhuyan, n.d.). Though fish compose a small amount of global protein intake (6.7%), they are an important source of animal protein, providing 17% of the world's meat consumption (Eitfood, 2023).

While 50 trillion may be a staggering number, many people propose solutions that would be difficult to implement due to a lack of funding. One example of these solutions would be plastic-eating bacteria. In 2001, Japanese scientists found a type of bacteria within

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a rubbish dump (Stephen Buryani, 2023). This specific bacteria was found eating the trash as they harvested the carbon inside the plastic for energy. 350 million tonnes of trash are produced every year and 0.5% of that is in the ocean (Hannah Ritchie, 2023). This brings the idea to its first flaw; there is not enough bacteria to stop it, let alone put a dent in the sheer number of microplastics. Even if there is an amount that is sufficient enough to stop the microplastics, many tonnes of microplastics are in living beings making it nearly impossible to get rid of. Even if there is enough, a decent amount can be found in different organisms around the sea and we do not know whether this is lethal to the organisms as they eat carbon and carbon can be found in the bodies of most animals.

Microplastics do not come out of thin air, it has to be produced. Plastics are made from natural materials such as cellulose, coal, natural gas, salt and crude oil through a polymerisation or polycondensation process (anonymous, 2024) and microplastics are just tiny fragments of these plastics measuring in 5mm length (anonymous, n.d.). This issue of microplastic pollution is not something to be taken lightly, it needs urgent attention to protect the environment and our well-being. Social class plays a pivotal role in addressing the crisis. Higher-earning individuals tend to make a larger impact on plastic usage and waste production, whereas lower-income communities often experience more severe environmental and health effects (anonymous, 2023).

Karl Marx's theory of commodification offers a powerful lens through which to examine the root causes of microplastic pollution. In a capitalist society, everything, including natural resources and human labour, is transformed into commodities that can be bought and sold. This relentless pursuit of profit often leads to a disregard for environmental sustainability.

The production of plastic goods, driven by consumer demand and market forces, has contributed significantly to the proliferation of microplastics. The convenience and affordability of plastic products have made them ubiquitous in modern life. However, the long-term consequences of plastic consumption, including the release of microplastics into the environment, are often overlooked.

Social class plays a significant role in the making of microplastics. Karl Marx's argument that capitalism turns everything into products has encouraged excessive consumption and waste generation (Hermann, 2021). This process is one of the many reasons why plastic pollution has reached the ocean, as many people cannot manage waste (Antonis Mavropoulos, 2017). It is also because people want that money that they do not care where the waste ends up (Dana Johnson, 2020). This is what causes microplastic pollution. This

research aims to critically examine the role of social class in shaping microplastic management. This research provides valuable insights into how social class influences microplastic management, helping to uncover systemic inequalities in environmental responsibility and resource distribution. By analyzing these connections, the study contributes to more equitable and effective solutions for tackling microplastic pollution.

2. LITERATURE REVIEW

Karl Marx, a German philosopher, historian, economist, and sociologist, provides a critical framework for understanding the economic and social structures that drive microplastic pollution. His theory of commodification—the process of turning goods, labour, and even natural resources into products for sale explains how profit-driven production has led to environmental degradation (Marx, Das Kapital, 1867). In a capitalist system, the primary goal is profit maximization, often at the expense of sustainability, resulting in excessive production, planned obsolescence, and mass consumption (Josh Sims, 2024). During Marx's time, the rise of industrial capitalism transformed production from small-scale, localized systems into factory-based mass production. This shift led to the exploitation of labour and the alienation of workers from their work, issues Marx examined extensively in his writings. However, his theories can also be applied to contemporary environmental crises, particularly the overproduction of plastic materials, which contributes to microplastic pollution. The prioritization of financial gain over sustainability means that corporations continue to produce disposable plastic goods, encouraging overconsumption and generating massive amounts of waste.

Marx's critique of capitalism extends to the way marketing and consumer culture manipulate human behaviour. He argued that capitalism creates false needs, making people believe they require more goods than they do (Marx, Grundrisse, 1857). Today, this is reflected in aggressive marketing strategies that persuade consumers to purchase excessive amounts of plastic products, even when sustainable alternatives exist. The commodification of plastic has resulted in its widespread use in industries such as packaging, fashion, and manufacturing, further exacerbating the issue of microplastic pollution. Moreover, corporations use planned obsolescence—deliberately designing products with limited lifespans—to encourage repeated consumption. This cycle of production and waste illustrates how microplastic pollution is not simply an environmental problem but a structural issue embedded in capitalist economic systems.

Despite the relevance of Marx's critique, some scholars argue that his framework

overemphasizes economic structures while neglecting other contributing factors to environmental degradation. Max Weber (1905) offered an alternative perspective, suggesting that economic behaviour is influenced not only by capitalism but also by cultural values and human choices. Weber's theory of rationalization argues that modern consumption patterns are shaped by efficiency and convenience rather than purely by capitalist profit motives (The Protestant Ethic and the Spirit of Capitalism, 1905). In the case of microplastics, consumers often choose plastic products due to their affordability and accessibility, even when they are aware of their environmental impact (Vanessa Page, 2024). Additionally, some economists challenge Marx's deterministic view of capitalism by emphasizing the role of technological innovation. Joseph Schumpeter (1942) introduced the concept of creative destruction, which suggests that capitalism is capable of self-correction by replacing harmful industries with more sustainable alternatives. Proponents of this view argue that rather than dismantling capitalism, encouraging investment in biodegradable plastics and circular economies could offer solutions to plastic waste (Capitalism, Socialism, and Democracy, 1942).

John Maynard Keynes (1936) also criticised Marx for failing to recognize the role of government intervention in mitigating the negative effects of capitalism. Keynesian economists argue that environmental issues like microplastic pollution can be addressed through strong government policies, public investment in green technology, and regulations that hold corporations accountable (The General Theory of Employment, Interest, and Money, 1936). Countries with strict plastic regulations, such as the European Union's ban on single-use plastics, demonstrate that effective policy measures can limit the environmental impact of capitalism. These perspectives suggest that while Marx's critique of commodification remains valuable, solutions to environmental issues must integrate market incentives, policy interventions, and technological advancements rather than solely focusing on dismantling capitalist structures.

Although Marx did not explicitly address environmental issues, later scholars have expanded his ideas to analyze capitalism's role in ecological crises. The development of Eco-Marxism, particularly through the work of John Bellamy Foster (1999), applies Marxist thought to environmental degradation. Foster introduced the concept of the metabolic rift, which describes how capitalism disrupts the natural balance between human society and the environment (Marx's Ecology, 1999). This theory is particularly relevant to microplastic pollution, as the capitalist cycle of production and waste disrupts natural ecosystems. Additionally, neo-Marxist theorists, such as Guy Debord (1967), argue that capitalism has created a "society of the spectacle," where consumption is driven by image and branding

rather than necessity (The Society of the Spectacle, 1967). This perspective aligns with how corporations use advertising to reinforce the desirability of plastic-based consumer goods, further entrenching unsustainable consumption patterns.

In recent years, environmental movements influenced by Marxist thought have proposed solutions such as the Green New Deal and the degrowth movement. These approaches advocate for state intervention, economic restructuring, and corporate accountability to curb environmental destruction (Hickel, Less is More: How Degrowth Will Save the World, 2020). The degrowth movement, in particular, argues that limiting production and consumption is necessary to protect environmental resources. These contemporary applications of Marx's theory demonstrate how his ideas have evolved to address modern ecological challenges. While the commodification of goods remains central to capitalism, the emergence of sustainable development policies and regulatory frameworks indicates that solutions to microplastic pollution must incorporate both economic and political dimensions.

Marx's theory of commodification provides a strong foundation for analyzing how capitalist production contributes to microplastic pollution, demonstrating how profit-driven motives lead to environmental harm. However, alternative perspectives from Weber, Schumpeter, and Keynes highlight additional factors, such as cultural influences, technological innovation, and government regulation. While Eco-Marxist scholars have expanded their ideas to include environmental critiques, modern solutions require a multidimensional approach—combining economic reforms, policy interventions, technological advancements, and consumer awareness. This research bridges Marxist theory with contemporary environmental challenges, offering a nuanced understanding of how social and economic structures influence microplastic pollution and how systemic change can lead to sustainable solutions.

3. METHOD

Based on the research objective, this study primarily employs a qualitative research method, which focuses on collecting and analyzing non-numerical data such as text, video, or audio to understand concepts, opinions, or experiences (Scribbr, n.d.). The research investigates social class behaviour and how microplastics spread into the ocean as a result, using three key data collection components. First, a literature review is conducted as a survey of scholarly sources (Shona McCombes), drawing from academic journals, articles, research papers, and credible news outlets such as BBC, CNN, and WHO. To ensure accuracy and relevance, only sources published within the last ten years are included, considering the

rapidly increasing issue of microplastic pollution. Second, interviews are carried out with four groups: lower, middle, and upper social classes—defined by income level and living conditions—as well as experts on microplastics or environmental issues, ensuring the information gathered is comprehensive and reliable. Questions vary depending on each interviewee to obtain perspectives that contribute to a well-rounded conclusion. Finally, data are analyzed using a cross-sectional design, with information collected at a single point in time to examine relationships relevant to the study. All data will be organized in a separate Google document before being integrated into the thesis to maintain clarity and consistency, with only the most relevant information from the literature review included to avoid excessive or unnecessary details.

4. RESULT AND DISCUSSION

Result

The results of this study were derived from the qualitative data collected through a literature review and interviews. The key findings are presented in alignment with the research objectives, focusing on social class behaviors and their role in spreading microplastics to the ocean. A cross-sectional approach enabled an integrated analysis of various perspectives and the identification of patterns across different social classes.

Literature Review

Researching how social class connects to pollution has shown some complicated results. Some studies indicate that people living in urban areas with lower incomes face more air pollution and its health risks (Stern, 2003; Wheeler & Ben-Shlomo, 2005). On the other hand, other research finds weak or inconsistent links between social status and different environmental pollutants (Vrijheid et al., 2010). In some cases, those from lower social classes seem to bear the brunt of different pollutions (Stern, 2003; Wheeler & Ben-Shlomo, 2005), although it is not always straightforward sometimes, people from higher social classes also show higher levels of certain pollutants (Vrijheid et al., 2010). Both social class and environmental qualities influence bodily function, with some evidence suggesting that plastic pollution affects men in lower classes more (Wheeler & Ben-Shlomo, 2005). The relationship between social class and environmental exposure is complex and can vary based on where you are, the kind of pollutants, and other factors (Vrijheid et al., 2010; Woodward & Boffetta, 1997).

Small plastic particles come from various sources and stick around in oceans for a long time (Biswal, 2021). They can travel far because of ocean currents, even reaching remote

places (Madiraju Saisanthosh Vamshi Harsha et al., 2024). These microplastics can physically harm marine life when ingested and also carry toxic substances, messing up habitats and disrupting ecosystems (Galloway et al., 2017). They can build up through the food chain, affecting everything from tiny algae to bigger fish (Biswal, 2021). The social class can end up exposed to microplastics through seafood, drinking water, and even breathing them in, raising concerns about potential health issues like inflammation, cell damage, and hormonal problems (Madiraju Saisanthosh Vamshi Harsha et al., 2024). The growing presence of microplastics in marine environments is a big worry because they can harm a wide range of organisms and pose serious health risks (Law & Thompson, 2014).

The effects of microplastics extend beyond environmental concerns and could potentially lead to health issues in humans and marine life (Lyda, 2024). Addressing this problem requires a multidisciplinary approach that includes social and behavioural research methods to understand human perceptions and actions related to microplastics (Pahl & Wyles, 2017). Considering social dimensions, including the disproportionate effects on communities heavily reliant on small-scale fisheries for sustenance, is necessary for developing effective interventions and policies to mitigate microplastic pollution (Rivera-Garibay et al., 2024).

The impact of social class on pollution has been a subject of research with mixed findings. Some literature suggests that lower-income urban residents are at greater risk of exposure to air pollution and related health effects (Stern, 2003; Wheeler & Ben-Shlomo, 2005). Contrarily, some studies have found very little or no association between social stratification and specific forms of pollution (Vrijheid et al., 2010). Moreover, there are instances of environmental injustice in which people from lower socioeconomic status appear to be facing more air pollution (Stern, 2003; Wheeler & Ben-Shlomo, 2005). Yet, in some instances, higher classes may experience higher proportions of certain pollutants than would be expected (Vrijheid et al., 2010). Lung health is influenced by both social deprivation and air quality, although air pollution seems to have clearer effects on men belonging to lower classes (Wheeler & Ben-Shlomo, 2005). The association between social class and exposure to the environment is highly contextualized and dependent on geographical location, pollutant type and several other factors (Vrijheid et al., 2010; Woodward & Boffetta, 1997).

Dealing with microplastics will be difficult. It will require a broad approach that takes into account social, behavioural, and ecological factors (Kramm & Völker, 2018; Pahl & Wyles, 2017). It is crucial to understand how people perceive and act regarding microplastics for effective interventions, as well as policy development, and social and behavioural research methods are key for this (Pahl & Wyles, 2017). Addressing microplastics involves making

changes in production, use, and quality across all social levels, focusing on environmental education and governance efforts (Thiago et al., 2023). Some promising solutions for addressing microplastics include microbial degradation, as well as physical and chemical methods (Rani et al., 2024). An all-encompassing strategy that integrates research, technologies, preventive measures, and policy implementation is essential for advanced microplastic management (Rani et al., 2024). This approach should include the concept of "reduce, reuse, and recycle" to minimise the environmental impacts and ecological consequences of microplastics (Rani et al., 2024). However, due to the need for cooperation from all 8 billion people to regularly implement this strategy, it might be impractical.

Interview

A variety of interviews with ninth-graders from a range of socioeconomic backgrounds revealed varying degrees of microplastic awareness. Students from lower-income families stated that they had a very basic understanding of microplastics as tiny components and that they were lacking in knowledge about their causes and consequences. Although their trash disposal methods were very varied, they shared issues including inconsistent recycling commitments and limited access to specialist bins for separate plastic garbage. Every socioeconomic student reported seeing trash on the sidewalks, primarily plastic wrappers, drinks, and bags.

Although middle-class students revealed this awareness of microplastics, they were only able to gain a limited understanding of the sources of microplastics. Despite participating in reuse or recycling initiatives with plastic bags, students were frequently hindered by the limitations of available recycling procedures since the plastics they used were not recyclable. Students from higher-income backgrounds are thought to have encountered a sense of microplastic pollution, they generally are not well-informed or taking any action. Although they all recycle in some way, none of them actively engage in neighbourhood events or push for more government regulations to address the problem of microplastic pollution.

This is emphasised by an avid plastic cleaner in Nusa Dua Beach, Bali, who has observed a concerning lack of awareness regarding microplastic pollution among the general public, particularly among youth and tourists. The cleaner explained that during his time cleaning up the public beaches around Nusa Dua, he noticed a lack of care from both locals and tourists as most were completely ignored and some threw waste themselves as compared to the private beaches belonging to the hotels

Discussion

The findings of this study align with existing research on environmental inequalities, particularly the social gradient of health (Stern, 2003; Wheeler & Ben-Shlomo, 2005), which links lower socioeconomic status to higher exposure to environmental pollutants. However, this study presents a notable divergence: socioeconomic status was not significantly correlated with awareness or concern about microplastic pollution. This contradicts the widely held assumption that lower-income populations are both more exposed to and more concerned about environmental issues (Brulle & Pellow, 2006). Previous studies suggest that wealthier individuals, due to their education and access to information, are more likely to engage in pro-environmental behaviours (Gifford & Nilsson, 2014), yet our findings indicate a lack of engagement among higher-income participants. Instead, systemic factors such as governmental policy and accessibility to environmental education play a more critical role in shaping awareness and concern.

While the social gradient of health provides a strong foundation for understanding environmental disparities, its application to microplastic pollution is limited. The theory assumes that socioeconomic disadvantages inherently lead to greater vulnerability and concern (Marmot, 2010), yet this study suggests that factors such as behavioural norms, cultural influences, and access to information may override purely economic constraints. Similarly, Karl Marx's theory of commodification posits that environmental degradation disproportionately affects lower-income populations due to their proximity to industrial areas (Foster, 1999). While this holds for physical exposure, our findings reveal that awareness is not significantly stratified by class, contradicting the assumption that those creating environmental problems (i.e., higher-income groups) are more knowledgeable about them. This exposes a gap in classical environmental justice theories, which fail to address disparities in environmental awareness across social classes (Schlosberg, 2007).

Other environmental justice theories, which emphasize the systemic inequalities of the environment, cannot achieve the perfect position in representing the localized and varied nature of microplastic pollution. Economic constraints, alongside personal behaviours that include waste management practices and participation in environmental programs, determine microplastic exposure and awareness. This study indicates that socioeconomic status is a factor but not the only factor for microplastic pollution awareness or concern. Additional factors that have been found to influence microplastic pollution awareness include: access to Information and education or behavioural and cultural norms.

Another issue is with the thinker Karl Marx with his idea of commodification. In that

theory, he explained that as people prioritize wealth over anything else, it can lead to environmental degradation among the social classes. Aside from this, he would also explain that the ones most affected by this environmental degradation would be the lower social classes as they would live near industrial areas such as factories etc. Although this is true, he does not write about the awareness of the social classes. It is hinted that in his theory, the higher social class would be more aware of this as they created these industrial areas, however, this is not true. According to the research done in this thesis, it is found that all social classes possess the same awareness with only a different exposure.

The discrepancy between exposure and awareness suggests several underlying factors. Behavioural and cultural differences may explain why individuals in different socioeconomic strata exhibit similar levels of concern despite varying levels of exposure. Research indicates that environmental knowledge is often shaped by community norms and peer influence rather than direct personal experience (Clayton et al., 2016). Moreover, media representation of microplastic pollution may contribute to a more equal distribution of awareness across income levels, as widespread coverage reduces reliance on direct exposure as a determinant of concern (Anderson et al., 2018). Additionally, education systems play a critical role; while higher-income individuals have greater access to formal education, environmental topics are not necessarily emphasized, leading to a disconnect between education and environmental engagement (Kollmuss & Agyeman, 2002).

Contrasting findings emerge when comparing this study to previous research. For instance, studies on climate change awareness have consistently shown that higher-income groups exhibit greater environmental concern and engagement (Whitmarsh, 2011). However, studies on pollution awareness suggest that direct exposure does not necessarily translate to increased concern (Drews & van den Bergh, 2016). Similar to our study, research on air pollution has shown that low-income groups experience higher exposure but do not always express greater concern, potentially due to desensitization or competing economic priorities (Bickerstaff & Walker, 2001). This raises important questions about the broader applicability of environmental justice theories and suggests that pollution-specific factors must be considered when analyzing awareness and concern.

This study sheds light on the social dimensions of microplastic pollution by examining how behaviours and perceptions differ across socioeconomic groups. These findings contribute to a better understanding of the human factors driving microplastic pollution, emphasizing the need for a holistic approach that considers systemic inequalities, access to education, and individual behaviours. The findings point out several actionable steps to

address microplastic pollution, including policy development, community engagement, and international encouragement of responsible tourism practices.

Finally, many limitations must be considered for this research. The sample size was not very large and, therefore, might not capture all the variation in behaviours and perceptions of different socioeconomic groups. The research was carried out in specific locations, thus limiting the generalization of findings to other regions with a different socioeconomic and cultural context. Other limitations include cross-sectional design; it cannot reflect the variation in awareness or behaviour for a longer period. Last but not least, the variables analyzed were scanty. Although the major concentration was on socioeconomic status and access to information, other possible influential variables like gender, age, and education level were not studied deeply. These limitations highlight areas where further research could complement and add to the present stock of understanding on the subject.

To build on the insights from this study, future research should aim to address several areas. Expanding the sample size to include larger and more diverse populations would provide a broader understanding of the factors influencing awareness and behaviour regarding microplastic pollution. Conducting longitudinal studies could reveal patterns and offer insights into the long-term effectiveness of interventions by observing changes in awareness and behaviour over time. Additionally, future research should explore additional variables, such as gender, age, and education, to examine how these factors interact with socioeconomic status in shaping perceptions and behaviours. It would also be valuable to evaluate the effectiveness of specific intervention strategies, such as community-based recycling programs or educational campaigns, in fostering sustainable practices. Investigating regional variations could uncover localised solutions to microplastic pollution by considering how different geographical and cultural contexts shape environmental behaviours. Finally, given the global nature of microplastic pollution, future studies could examine the impact of international collaborations and global policies on localbehaviourss and outcomes. These efforts would contribute to a more comprehensive understanding of microplastic pollution and inform more effective approaches to addressing this pressing issue.

In summary, the findings emphasize that socioeconomic status alone does not dictate awareness or concern about microplastic pollution. Factors such as access to information, environmental education, and cultural norms play significant roles in shaping individual and collective behaviours. To effectively tackle microplastic pollution, policymakers and stakeholders must adopt a multidisciplinary approach that integrates education, policy reform, and community engagement. Here is the table to compare Marx’s ideas with the findings of

my research.

Table 1. Marx's Idea vs My Thesis.

Environmental Issues	Karl Marx	My Thesis
Exposure	The **lower class** is more exposed to environmental issues than the **upper class**.	
Awareness	The **lower class** has experienced more environmental degradation thus being **more aware** of the situation.	**Both** social classes have similar awareness no matter the exposure.

Karl Marx's theory connects environmental destruction with capitalist industrialisation, which holds the upper class, responsible for prioritizing profit over sustainability with limited awareness, while the lower class, passively suffer from environmental degradation which can cause several sicknesses. This research, however, ran against this assumption by showing that the upper class, despite being less exposed to environmental issues, has the same level of environmental awareness as the upper class. This contradicts Marx's claim that exposure to ecological issues creates awareness and activism among the working class environmental consciousness but instead suggests that no matter the exposure, the awareness remains the same. While Marx correctly identifies capitalism as a driver of environmental destruction, his view of class-based environmental awareness ignores the role of changing access to information in shaping ecological consciousness across all social groups.

5. CONCLUSION

In conclusion, The relationship between social class and pollution is complex, and one that this research examined in terms of public awareness as well, particularly on microplastic pollution. There are many articles suggesting an association between lower socioeconomic status and increased exposure to specific pollutants including microplastic pollution however, this study did not show a clear association between socioeconomic status and awareness or concern about microplastic pollution among the study sample. These findings imply that the social gradient of health may not apply to microplastic pollution in the same way that it does in other contexts.

In addition, the study highlights the need to take into account factors outside of socioeconomic status, including access to information, environmental education and cultural

norms. For example, interviews with ninth-graders showed differences in microplastic awareness between socioeconomic backgrounds. Whether wealthy or not, students had no previous exposure to learning how microplastics are made and how they function in the world. However, where wealthy families had access to learning, some families never learned how to access different areas such as recycling centres.

In addition, the socio-economic findings intersected with the beach clean interview with a microplastic researcher and on-site beach cleaner, that many residents and tourists of differing socio-economic classes of Bali were either unaware or apathetic to microplastic contamination in their daily living environment. Therefore, where scientific and technological research findings showed the need to assess microplastic pollution, different interdisciplinary awareness showed that assessment is just as critical to understanding such a phenomenon almost like social scientific endeavours gave the same suggestions as scientific endeavours.

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