A Study on the Motivators & Barriers in Adoption of Single-Use Plastics- With Special Reference to Meendum Manjappai Campaign

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Abstract:

Single use plastics, that are used once and disposed into the environment, is a major pollutant in today's society. With longer time taken for decomposing, these Single use plastics, breaking down into microplastics, takes a very long time to decompose causing the problem of increased landfills. Hence many governments have taken initiatives to ban single use plastics and have devised campaigns to create awareness among the public, to reduce the consumption of single use plastics, Apart from the Indian Government , taking the initiatives, The Tamil Nadu government also has introduced the Meendum Manjappai campaign to stop the use of single use plastics, As one of the longest running campaigns in India, to ban single use plastics, this research paper examines the consumers perceptions towards SUP's and the Meendum Manjappai campaign. The data collected from 500 respondents revels that people have become more aware towards SUP's and expect the availability of cheaper alternatives to stop using SUP's

Key words- Single use plastics, Consumers, Meendum Manjappai campaign, Motivators, Barriers

1. Introduction

Single Use Plastics (SPCs) developed for today's disposable society, meant to be used only once have emerged as a major pollutant factor in today's world. Produced in large numbers and utilised all over the world, particularly in packaging and provisions such as single use plastics are hazardous to the environment and expensive to clean (Chen et al., 2021). The frequent and widespread use of plastics have allowed plastic and its constituents to come into contact with the human body regularly. This resulted in cardiovascular diseases, liver problems and type II diabetes (Banu et al., 2019). SUPs have also impacted marine life and wildlife causing lower reproductive output, numerous injuries, restricted locomotive movement and eventually death (Lalrinfela et al., 2024). In response to these concerns, India has taken policy action. A ban on specific types of single use plastics (plastic bags, straws, cutlery, plates and packaging) was declared by the Ministry of Environment, Forests, and Climate Change (MoEFCC) in 2019 and went into action in 2022. At the state level, the Tamil Nadu Government started the "Meendum Manjappai" initiative in 2021. The goal of this awareness campaign is to get people to switch back to using

eco-friendly bags and throw away plastic ones by promoting the usage of "yellow" cloth bags, or "Manjappai" as they are known in Tamil (Borg et al., 2022). Through several customer friendly initiatives like conducting awareness campaigns, spreading messages through green warriors, mobile apps , Manjapai vending machines etc, the Tamilnadu government engages in curbing the use of Single use plastics.

As the success of any campaign depends on the changes in the consumer perceptions and behavior, it is important to understand the perceptions of the consumers about the widely used single use plastics and the impact of the campaign on the behaviour of the consumers and therefore this research paper aims to identify the perceptions and behaviour towards the single use plastics and the Meendum Manjappai campaign.

2. Review of Literature:

Studies have been widely undertaken on Single use plastics. Chen et al. (2021) studied the impact of SUP on production and disposal, highlighting that single-use plastics cause pollution to lakes, rivers, soil, and plant growth. Xanthos and Walker (2017) on international policies to reduce marine pollution caused by single-use plastics emphasize the need for new policies, effective bans, and measurement of positive impact on the marine environment.

Dey et al. (2021) on the use of single-use plastics for packaging food underscore the importance of reducing single-use plastics through improved recycling practices and waste management. Schnurr et al. (2018) on reducing the impact of SUP's on Marine pollution explores the new jurisdictional legislative and non-legislative interventions to mitigate SUP's at individual and private sector levels. Herberz et al. (2020) on assessing the sustainability of SUP's ban reveal that overall elimination of single-use items is necessary to control the pollution, and not only the ban of single-use plastics. Wagner (2017) on strategies to reduce SUP shopping bags in USA explores how the local governments are using regulations to reduce the usage despite facing restraints and authority limitations.

Smith et al. (2023) on the planetary health and infection prevention contrast between how plastics supports prevention of infections while SUPs harm the planetary and human health.Borg et al. (2022) on behaviour change relating to curbing plastic consumption indicate how coordinated actions on behaviour change among individuals and various sectors are needed to reduce plastic usage in the long-run. Viera et al. (2020) on replacing single-use plastics illustrates a case of how mislabelling and whitewashing of plastic products cause ineffectiveness of plastic bans imposed.

Adam et al. (2020) on policies to reduce SUPs in West Africa report the need for nationalised effort and the lack of affordable reusable alternatives for Single-use plastics. Idris et al. (2023) on degradation of SUPs and bioplastics discuss the various degradation mechanisms, composting conditions, and material selection of SUPs and bioplastics. Nguyen et al. (2022) on how motivation influences the reduction of single-use plastics states how satisfaction of basic psychological needs caused the reduction in SUP consumption. Liu et al. (2021) on the usage of single-use plastic in Hanoi indicates how household single-use plastic dominates pollution and suggest integrated behaviour and supply-chain based control measures. Kiessling et al. (2023) on evaluation of the EU single-use plastics directive, conclude that the lack of full-fledged implementation hinders the reduction of single-use plastics.

Leissner and Ryan-Fogarty (2019) on the reduction of single-use plastics in healthcare illustrate, using a case study on how a single product - infant formula bottles have complex compositions, making it difficult to segregate and dispose.Walker et al. (2021) on examining single-use plastic in the Canadian food industry considers how customers value innovation by being unwilling to pay higher prices for alternatives. Van Rensburg et al. (2020) on social perceptions towards the usage of single-use plastics in Durban, South Africa, explore how people show high awareness, enabling strong encouragement of behavioural change measures and plastic bans to reduce coastal pollution. Miller (2020) on misperceptions surrounding the environmental impacts of SUPs argues that many assumptions on single-use are scientifically inaccurate and puts forth the need for holistic life-cycle assessments. Surendren et al. (2022), in a review of biodegradable thermoplastics illustrates how thermoplastic starch-based blends are composed easily, but challenges remain in performance and large-scale commercialization. Chubarenko et al. (2020) on the fragmentation of single-use plastics in sea swash zones find that pebbles accelerate decomposition, causing particles to bury under the sediment surface.The review highlights that research papers on Single use plastics focus on the problems of using SUP's and perceptions of people. However research on specific campaigns on banning single use plastics is lacking , which is addressed in this paper.

3. Objectives to the study

1.To study the Motivators & Barriers in Adoption of Single-Use Plastics
2. To understand the respondents' perceptions about Meendum manjappai campaign

Research methodology

The study used a descriptive research design. A well-structured questionnaire was used for collecting the data from 500 respondents from 5 zones (East. West, North, South & Central) of Coimbatore district. 100 respondents from each zone were collected through Quota sampling.

4. Data analysis

Table 1: Demographic Profile of Respondents

Age Group	No. of Respondents	Percentage (%)
Less than 20	92	18.4
20 – 30	130	26.0
30 – 40	146	29.2
40 – 50	132	26.4
Total	500	100

Table 1 reveals that, most (29.2%) of the respondents belong to the age group of 30–40. 26.4% of the respondents belong to the age group of 40–50 and 26% of the respondents belong to the age group of 20–30.

Table 2: Income level of respondents

Income Level	No. of Respondents	Percentage (%)
Less than ₹25,000	82	16.4
₹25,000 – ₹35,000	127	25.4
₹35,000 – ₹45,000	113	22.6
₹45,000 & above	178	35.6
Total	500	100

Table 2 reveals the income level of respondents. Most (35.6%) of the respondents belong to the income category of Rs 45000 and above followed by 25.4% of respondents belonging to the income category of 25000–35000.

Table 3: Gender of respondents

Gender	No. of Respondents	Percentage (%)
Male	273	54.6
Female	227	45.4
Total	500	100

Table 3 reveals that majority (54.6%) of the respondents were male.

Table 4: Occupation of respondents

Occupation	No. of Respondents	Percentage (%)
Homemaker	24	4.8
Business	186	37.2
Employed	212	42.4
Students	78	15.6
Total	500	100

Table 4 presents the occupation of the respondents. The table reveals that most (42.4%) of the respondents were employed followed by business people (37.2%) and students (15.6%).

Table 5: Motivators for Using Single-Use Plastics

Particulars	Rank
Less / No cost	1
Easy availability	2
Less weight	3
Higher cost of alternative bags	4
Easy to store	5
More convenient to carry	6
Requires less storage space	7

Table 5 reveals the major motivators influencing the general public to use single-use plastics. The respondents identified various reasons for their preferenceto use single use plastics and ranked them. Among the various reasons, less or no cost was ranked first as the most important factor. This was followed by easy availability (Rank 2) and less weight (Rank 3). The higher cost of alternative bags was ranked fourth. Other factors such as ease of storage (Rank 5), convenience in carrying (Rank 6), and requirement of less storage space (Rank 7).

Table 6: Barriers in Using Single-Use Plastics

Particulars	Rank
Awareness of government ban	1
Awareness about its hazards	2
Retailers not providing single-use plastic bags	3
Difficulty in disposal	4
Pressure from peers / family members	5
Restrictions in tourist places	6

Table 6 reveals the barriers that restrict the respondents from adopting single-use plastics. Respondents indicated that they are aware of the government ban to use single-use plastics (1), and they are also well aware of the hazards of using SUPs (2). Retailers not giving SUP bags or charging extra for it (3), difficulty in disposal (4), pressure from family members or friends about its health hazards (5), and restrictions by the government not to use in tourist places (6).

Table 7: Awareness about Meendum Manjappai Campaign of Tamil Nadu Government

Particulars	No. of Respondents	Percentage
Yes	412	82.4
No	88	17.6
Total	500	100

Table 7 reveals that the majority (82.4%) of the respondents are aware of the Meendum Manjappai campaign of the Tamil Nadu Government.

Table 8: Effectiveness of the Meendum Manjappai Campaign

Particulars	No. of Respondents	Percentage
Highly effective	102	20.4
Effective	163	32.6
Neutral	92	18.4
Ineffective	76	15.2
Highly ineffective	67	13.4
Total	**500**	**100**

Table 8 presents the respondents' perception of effectiveness of the Meendum Manjappai campaign. The results reveal that most (32.6%) of the respondents feel that the campaign was effective in reducing single use plastics, 20.4% of the respondents feel that the campaign is very effective in reducing single use plastics. However 13.4% of the respondents feel that the campaign is highly ineffective.
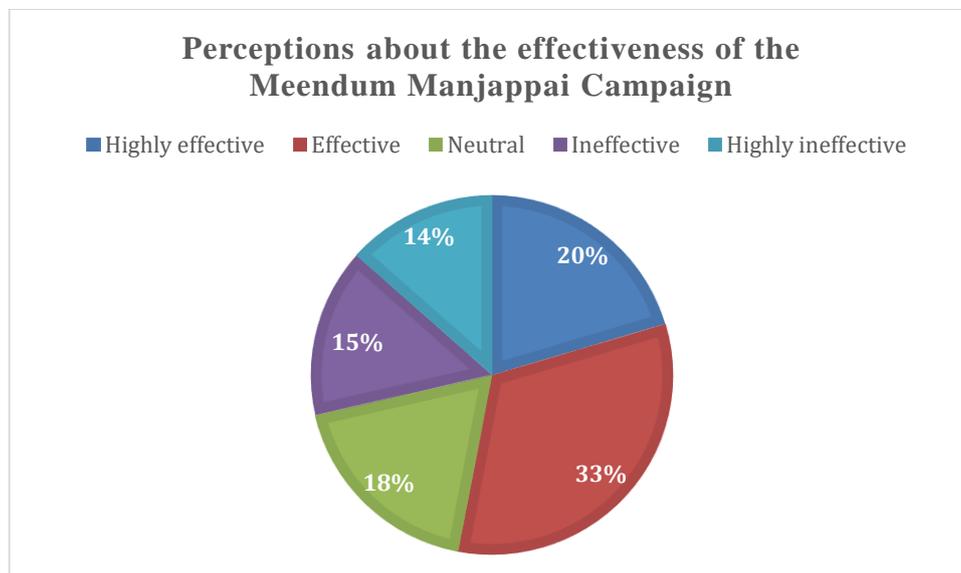

Perceptions about the effectiveness of the Meendum Manjappai Campaign

**Table 9: Association between demographic variables and awareness towards the negative effects of single-use plastics**

Demographic factors	Chi-square value	P-value	Sig/NSig
Age	56.23	0.001	Sig
Income	47.18	0.001	Sig
Gender	64.14	0.001	Sig
Occupation	68.44	0.001	Sig

To understand the association between demographic variables and awareness towards the negative effects of using single-use plastics, a Chi-square test was conducted. The results indicate that there is a significant association between the demographic variables and the awareness of the negative effects of single-use plastics.

Table 10: Awareness towards the different aspects of the Campaign

Particulars	No. of Respondents	Percentage
Posters / Campaigns	212	42.4
Social media promotions	135	27.0
Manjappai vending machines	98	19.6
Green warriors	26	5.2
Manjappai awards	17	3.4
Others	12	2.4
Total	500	100

Table 10 reveals that among the different aspects of the Meendum Manjappai campaign, the study reveals that most (42.4%) of the respondents have seen the posters, banners, and campaigns promoting the hazards of single-use plastics, followed by social media promotion (27%).19.6% of the respondents have seen the manjappai vending machines and 5.2% of the respondents have seen the green warriors.

Awareness towards the different aspects of the campaign
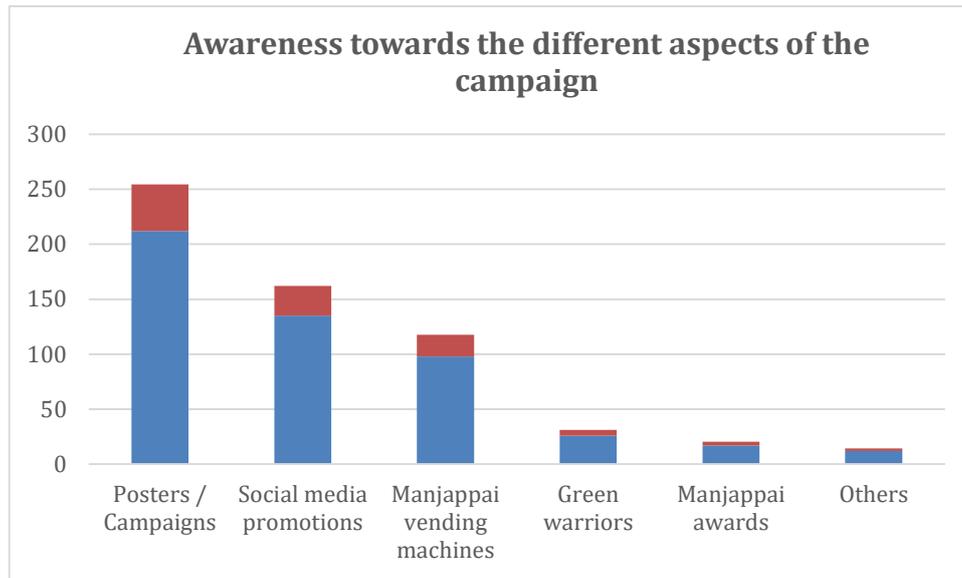
Suggestions for the success of Meendum Manjappai Campaign

The following are the suggestions offered by the respondents to reduce the usage of Single use plastic bags ensuring the success of the campaign

- ✓ Increased awareness through social media, TV, and local programs, will encourage people to understand the importance of avoiding plastics.
- ✓ Distribution of cloth bags at low cost or free in markets, schools, and public places.
- ✓ Encourage shops and supermarkets to give discounts or reward points to customers who bring their own bags.
- ✓ Conducting awareness programs in schools and colleges to create habits among young people.
- ✓ Imposing strict fines for the use of banned single-use plastics by retailers
- ✓ Making ecofriendly bags widely available.
- ✓ Organizing community drives and campaigns regularly to remind people to carry reusable bags.

Conclusion

Single use plastics are widely used in daily life because they are convenient, but their harmful effects on the environment, human health and living organisms cannot be ignored. Plastics create pollution, affect marine life and wildlife, and may also lead to serious health problems when people are exposed to them regularly. Although the Government of India has introduced bans and the Tamil Nadu Government has taken awareness initiatives like the Meendum Manjappai campaign, the use of single use plastics still continues among many people. This study shows that awareness alone is not enough unless it is supported by proper implementation, public responsibility and availability of affordable alternatives. People need to change their habits by choosing reusable and eco-friendly options such as cloth bags instead of plastic. At the same time, stronger monitoring, continuous awareness programs and support for sustainable products are necessary to reduce plastic dependency. Overall, reducing single use plastics requires the combined efforts of the government, businesses and the public. A conscious shift towards sustainable practices will help protect the environment and ensure a healthier future for the next generation.

References:

1. Chen, Y., Awasthi, A. K., Wei, F., Tan, Q., & Li, J. (2021). Single-use plastics: Production, usage, disposal, and adverse impacts. Science of the Total Environment, 752, 141772. https://doi.org/10.1016/j.scitotenv.2020.141772

2. Xanthos, D., & Walker, T. R. (2017). International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review. Marine Pollution Bulletin, 118(1–2), 17–26. https://doi.org/10.1016/j.marpolbul.2017.02.048

3. Dey, A., Dhumal, C. V., Sengupta, P., Kumar, A., Pramanik, N. K., & Alam, T. (2021). Challenges and possible solutions to mitigate the problems of single-use plastics used for packaging food items: A review. Journal of Food Science and Technology, 58, 3251–3269.

4. Schnurr, R. E. J., Alboiu, V., Chaudhary, M., Corbett, R. A., Quanz, M. E., Sankar, K., Srain, H. S., Thavarajah, V., Xanthos, D., & Walker, T. R. (2018). Reducing marine pollution from single-use plastics (SUPs): A review. Marine Pollution Bulletin, 137, 157–171. https://doi.org/10.1016/j.marpolbul.2018.10.001

5. Herberz, T., Barlow, C. Y., & Finkbeiner, M. (2020). Sustainability assessment of a single-use plastics ban. Sustainability, 12(9), 3746. https://doi.org/10.3390/su12093746

6. Wagner, T. P. (2017). Reducing single-use plastic shopping bags in the USA. Waste Management, 70, 3–12. https://doi.org/10.1016/j.wasman.2017.09.003

7. Smith, M., Singh, H., & Sherman, J. D. (2023). Infection prevention, planetary health, and single-use plastics. JAMA, 330(20), 1947–1948. https://doi.org/10.1001/jama.2023.20550

8. Borg, K., Lennox, A., Kaufman, S., Tull, F., Prime, R., Rogers, L., & Dunstan, E. (2022). Curbing plastic consumption: A review of single-use plastic behaviour change interventions. Journal of Cleaner Production, 344, 131077. https://doi.org/10.1016/j.jclepro.2022.131077

9. Viera, J. S. C., Marques, M. R. C., Nazareth, M. C., Jimenez, P. C., & Castro, Í. B. (2020). On replacing single-use plastic with so-called biodegradable ones: The case with straws. Environmental Science & Policy, 106, 177–181. https://doi.org/10.1016/j.envsci.2020.02.007

10. Adam, I., Walker, T. R., Bezerra, J. C., & Clayton, A. (2020). Policies to reduce single-use plastic marine pollution in West Africa. Marine Policy, 116, 103928. https://doi.org/10.1016/j.marpol.2020.103928

11. Idris, S. N., Amelia, T. S. M., Bhubalan, K., Lazim, A. M. M., Zakwan, N. A. M. A., Jamaluddin, M. I., Santhanam, R., Amirul, A.-A. A., Vigneswari, S., & Ramakrishna, S. (2023). The degradation of single-use plastics and commercially viable bioplastics in the environment: A review. Environmental Research, 231(Part 1), 115988. https://doi.org/10.1016/j.envres.2023.115988

12. Nguyen, H. V., Le, M. T. T., & Do, L. T. (2022). Intrinsic motivation for reducing single-use plastics: The compensation effects of basic psychological needs. Resources, Conservation and Recycling, 185, 106482. https://doi.org/10.1016/j.resconrec.2022.106482

13. Liu, C., Nguyen, T. T., & Ishimura, Y. (2021). Current situation and key challenges on the use of single-use plastic in Hanoi. Waste Management, 121, 422–431. https://doi.org/10.1016/j.wasman.2020.12.033

14. Kiessling, T., Hinzmann, M., Mederake, L., Dittmann, S., Brennecke, D., Böhm-Beck, M., Knickmeier, K., & Thiel, M. (2023). What potential does the EU Single-Use Plastics Directive have for reducing plastic pollution at coastlines and riversides? An evaluation based on citizen science data. Waste Management, 164, 106–118. https://doi.org/10.1016/j.wasman.2023.03.042

15. Leissner, S., & Ryan-Fogarty, Y. (2019). Challenges and opportunities for reduction of single-use plastics in healthcare: A case study of single use infant formula bottles in two Irish maternity hospitals. Resources, Conservation and Recycling, 151, 104462. https://doi.org/10.1016/j.resconrec.2019.104462

16. Walker, T. R., McGuinty, E., Charlebois, S., & Music, J. (2021). Single-use plastic packaging in the Canadian food industry: Consumer behavior and perceptions. Humanities and Social Sciences Communications, 8, Article 80.

17. Van Rensburg, M. L., Nkomo, S. L., & Dube, T. (2020). The 'plastic waste era': Social perceptions towards single-use plastic consumption and impacts on the marine environment in Durban, South Africa. Applied Geography, 114, 102132. https://doi.org/10.1016/j.apgeog.2019.102132

18. Miller, S. A. (2020). Five misperceptions surrounding the environmental impacts of single-use plastic. Environmental Science & Technology, 54(22), 14143–14151. https://doi.org/10.1021/acs.est.0c05295

19. Surendren, A., Mohanty, A. K., Liu, Q., & Misra, M. (2022). A review of biodegradable thermoplastic starches, their blends and composites: Recent developments and opportunities for single-use plastic packaging alternatives. Green Chemistry, 24, 8606–8636. https://doi.org/10.1039/D2GC02169B

20. Chubarenko, I., Efimova, I., Bagaeva, M., Bagaev, A., & Isachenko, I. (2020). On mechanical fragmentation of single-use plastics in the sea swash zone with different types of bottom sediments: Insights from laboratory experiments. Marine Pollution Bulletin, 150, 110726. https://doi.org/10.1016/j.marpolbul.2019.110726