

TRIPLE LENS ANALYSIS: A COMPARISON ON
SUSTAINABLE AND NON SUSTAINABLE
MENSTRUAL PRODUCTS

PROJECT SUBMITTED
TO

ST TERESA'S COLLEGE (Autonomous), ERNAKULAM.

AFFILIATED TO

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE
AWARD OF THE DEGREE OF

BACHELOR OF ARTS IN ECONOMICS



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UNDER THE GUIDANCE OF

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DEPARTMENT OF ECONOMICS
ST. TERESA'S COLLEGE, ERNAKULAM.

MARCH 2024

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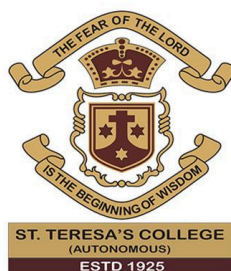
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CERTIFICATE

This is to certify that the project titled “**Triple lens analysis: a comparison on sustainable and non-sustainable menstrual products**” submitted in partial fulfilment of the requirement for the award of the degree of Bachelors of Arts in Economics to **St. Teresa’s College (Autonomous) (Affiliated to Mahatma Gandhi University, Kottayam)** is a bona-fide record of the work done by the project group under my supervision and guidance.

Head of the Department

Guide and supervisor

Dr. Anupa Jacob

Sreethi Krishnan

DECLARATION

We hereby declare that the project “**Triple lens analysis: a comparison on sustainable and non-sustainable menstrual products**” submitted by us for the Bachelor of Arts Degree in Economics is our original work.

Signature of the supervisor

Signature of the candidates

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ACKNOWLEDGEMENT

We begin by acknowledging the unwavering presence of the Almighty, a source of strength and blessings that carried us through this project. Our journey was further enriched by the guidance and encouragement of the esteemed faculty of the Department of Economics. We are particularly grateful to Dr. Anupa Jacob, Head of the Department, for her leadership. A deep sense of appreciation goes to our project guide, Ms. Sreethi Krishnan, Assistant Professor, Department of Economics, St. Teresa's College (Autonomous). Her mentorship proved invaluable throughout the project's tenure.

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TRIPLE LENS ANALYSIS: A COMPARISON ON
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MENSTRUAL PRODUCTS

CHAPTER 1

1.1 INTRODUCTION

Within the intricate tapestry of women's health and sustainability, menstruation stands as a natural and integral bodily process impacting approximately 26% of the global population. Every day, around 800 million individuals, including girls, women, and transgender people, navigate the nuanced challenges of menstruation—a historical struggle often veiled in invisibility. This challenge becomes especially pronounced during the crucial biopsychosocial developmental period, spanning ages 12 to 14, when most girls embark on their menstruation journey, dedicating an average of 65 days per year to this physiological process.

“Menstruation, also known as a period, among other colloquial terms, is the regular discharge of blood and mucosal tissue from the inner lining of the uterus through the vagina. This cyclical process is characterised by the rise and fall of hormones, triggered by falling progesterone levels, and is a clear sign that pregnancy has not occurred.”

In recent times, a surge of awareness has enveloped the multifaceted challenges surrounding menstruation and menstrual management. This heightened attention is a direct response to the inadequacies in strategies that ensure proper menstrual management, reduce menstrual inequities, and promote menstrual health. This gap is further accentuated by a deficiency in research initiatives and socio-political awareness. Aligned with fellow researchers and advocacy organisations, we underscore the urgent need to recognize menstrual health as not only a public health imperative but also a fundamental human right.

The very terminology commonly attached to menstrual products, such as "feminine products," "sanitary products," or "feminine hygiene," inadvertently reinforces societal stigma and taboos, perpetuating the idea that menstruation should be confined to private spheres and managed discreetly.

Menstrual hygiene management, as articulated by the WHO/UNICEF Joint Monitoring Programme in 2012, underscores the importance of using clean menstrual management materials, the ability to change these materials in privacy, proper washing of the body, and access to safe facilities for disposing of used menstrual management materials. Paradoxically, non-reusable products such as tampons or pads persist as the most accessible and conventionally used options, monopolising the focus of existing research.

In the realm of non-sustainable menstrual products, disposable pads and tampons have long been predominant. The study aims to analyse the consumption patterns associated with these conventional products, investigating factors such as frequency of use, brand preferences, and disposal habits. Affordability is a crucial consideration, as the

economic accessibility of non-sustainable options may impact the choices individuals make in managing their menstruation.

Concurrently, the research endeavours to explore the emerging landscape of sustainable menstrual products, including menstrual cups, reusable cloth pads, and period underwear. Assessing the adoption rates and consumption patterns of these eco-friendly alternatives will provide insights into the motivations behind choosing sustainable options. Affordability and accessibility will be critical factors influencing the widespread adoption of sustainable menstrual products, as their availability may vary across different demographic and socio-economic groups.

From menarche to menopause, the average menstruating woman utilises approximately 11,000 menstrual products, potentially exposing herself to endocrine-disrupting chemicals through vaginal absorption. This exposure may have implications for gynaecological conditions such as endometriosis, uterine fibroids, and adenomyosis. Despite the episodic nature of menstruation, chronic exposure to chemicals in menstrual hygiene products remains a relatively uncharted territory.

While single-use plastics have received heightened scrutiny for their environmental impact, menstrual products often operate below the radar as a significant source of single-use plastic. The disposable nature of popular menstrual products significantly contributes to their environmental footprint. This, coupled with the presence of microplastics, urges a reconsideration of the broader environmental implications tied to menstrual product choices.

This research project adopts a Triple Lens Analysis, dissecting consumption patterns, affordability challenges, and accessibility issues surrounding both sustainable and non-sustainable menstrual products. Through an exhaustive exploration of these dimensions, we aspire to contribute nuanced insights that not only inform individual choices but also guide the formulation of policies fostering sustainable practices. In doing so, we aim to ensure equitable access for all, considering diverse socio-economic and environmental contexts in the quest for menstrual health and sustainability. This research thus endeavours to bridge the gap in existing knowledge, offering a comprehensive understanding of the complexities inherent in menstrual health, thereby laying the groundwork for informed decision-making and policy formulation.

1.2 REVIEW OF LITERATURE

Access to safe and affordable menstrual products remains a global challenge, impacting individual's health, dignity and education. Sustainable menstrual product options have emerged as a potential solution, promising not only improved health and well-being for menstruators but also a reduced environmental footprint compared to traditional disposable products. This research delves into the complex landscape of menstrual product choices through a Triple Lens Analysis: consumption patterns, accessibilities and affordability in Kerala. By comparing sustainable and non-sustainable options, we aim to understand the economic and environmental implications of menstrual choices and identify potential solutions to promote informed decision making.

By examining how these factors differ between product types, this review aims to identify knowledge gaps and inform strategies to promote sustainable menstrual hygiene management practices. Analysing existing research allows us to understand current trends in menstrual products use, the challenges faced in ensuring accessibility and affordability and the potential impact of sustainable options on both environment and individual well-being. Following this, the review examines the existing literature on accessibility and affordability, particularly focusing on how socioeconomic factors and geographic location can influence access to safe and effective menstrual hygiene products. Finally, the review investigates current consumption patterns of menstrual products, analysing consumer awareness of sustainability concerns and the factors influencing product choice.

International Journal of Consumer studies in its research paper, published in 2020, "Taboo in Consumption: Social Structure, Gender and Sustainable Menstrual Products", a qualitative study was conducted with 31 women from middle and upper income classes who showed an inclination to purchase sustainable menstrual products (SMPs) and analysed how the intimate and private consumption of SMPs gets transformed into a complex socially embedded consumption choice.

In the article "Exploring Consumer Vulnerability in the Consumption of menstrual products: Insights from a developing country" by Edna G. Ndichu and Shikha Upadhyaya, in a health journal "Health Marketing Quarterly", the authors examined consumer experiences of vulnerability in the consumption of menstrual products in a developing country context and found that structural barriers such as regulatory gaps and exclusionary marketing practices adversely affect the women's physical and emotional wellbeing.

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“Exploring menstrual products: A systematic review and meta-analysis of reusable menstrual pads for public health internationally” article by PLOS ONE academic journal published by Public Library of Science, the authors search database for quantitative and qualitative studies that reported on leakage, acceptability or safety of reusable menstrual pads (RMPs): fabric layers sewn together by an enterprise for manufacture of menstrual products. The study shows a shift towards reusable menstrual pads due to their effectiveness, safety, affordability and environmental friendliness, making them a popular choice internationally for menstrual product provision.

In the paper “Asymmetric Information in Menstrual Health and Implications for Sustainability: Insights from India” by Supriya Garikipati, explored how markets for menstrual products evolved and its implications for sustainability of menstrual hygiene management and found that traditional taboos, markets and government policies have merged to create and endorse asymmetric information in menstrual health that promoted the single product category of disposable pads. The recent trend in menstrual product consumption patterns is influenced by asymmetric information favouring disposable pads, limiting sustainability and women's choice as highlighted in India's market dynamics.

International Journal of Current Microbiology and Applied Sciences in its article “Adoption Use and Environmental Impact of Feminine Hygiene Products among College going Girls of Udaipur”, shows an increase in demand was attributed to rising income and choice of comfortable and convenient lifestyle despite demand, the penetration rate of the sanitary napkins market was only 24% in 2014 and is expected to grow to 42% by 2018. This trend continues as far as showing a growing demand for disposable feminine hygiene products due to rising income and preference for convenience.

Journal of Water Sanitation and Hygiene for Development in its journal “An Exploration of market organic sanitary products for improving health and environmental impact”, pointed that the use of sanitary products is influenced by economic status, proximity to resources, education and cultural beliefs, which can lead to major health issues as mentioned in this paper. But many women around the world have limited access to education about menstruation and to sanitary methods for managing menstruation. Organic sanitary products made from materials like water hyacinth and bamboo are emerging to improve menstrual health, economic outcomes and reduce environmental impact globally.

Journal of gynaecology obstetrics and human reproduction in its journal article “Menstrual Hygiene Products: A Practice Evaluation”, the authors evaluated women’s practices regarding the use of hygienic protection and found that traditional sanitary protection was the most widely used, but there was a growing awareness among patients about the products they used and their potential health risks associated well as the consequences for the environment.

Journal of School Health in its academic journal “Period Product Resources and Needs in Schools: A Statewide Survey of Missouri’s School Nurses” assessed that period product resources and needs in Missouri schools from the perspective of school nurses and analysed differences by district enrolment characteristics, finding that the percentage free-or reduced – lunch eligibility increases in a school, awareness of students struggling to afford period product increases.

Reproductive Health Journal in its article “Seeking Menstrual Products: A Qualitative Exploration of the Unmet Menstrual Needs of Individuals Experiencing Homelessness in New York City”, explored the challenges people experiencing homelessness in New York City face in assessing menstrual products and highlighted the importance of expanding and improving initiatives seeking to provide access to menstrual products for vulnerable populations.

International Journal of Health Services Research and Policy in its journal article “An Overview of Period Poverty and the Public Health Benefit Impact of Providing Free Feminine Hygiene Products”, highlighted the initiatives taken in New York City by providing feminine hygiene products for free in public schools, prisons and homeless shelters, providing 323,000 menstruators with free products at a cost of roughly \$5.88 per person per year, which is cost effective.

Social Science Research Network published a journal “Human Rights and Taxation on Menstrual Hygiene Products in an Unequal World”. In this paper, the authors used the lens of the “tampon tax” to explain the relationship between and among affordable menstrual hygiene products and the human rights to be free from discrimination to sanitation to education, to dignity and to work. Menstrual hygiene product’s affordability and accessibility are crucial for upholding human rights as highlighted in the paper through examples from India, Kenya and the United States.

Frontiers in Global Women’s Health’s published work “Period Poverty and Mental Health of Menstruators during Covid-19 Pandemic: Lessons and Implications for the Future” highlighted that millions of adolescent girls and women, as well as non-binary persons who bleed every month, are deprived of menstruating safely and respectfully and are victims of period poverty, especially for marginalised individuals, exacerbating period poverty and impacting mental health during the Covid-19 pandemic.

Our research project, titled “Triple Lens Analysis: A Comparison on Sustainable and Non-Sustainable Menstrual Products,” takes a unique approach by examining these products through three key lenses: consumption patterns, affordability, and accessibility. This approach is particularly valuable because existing research often fails to consider all three of these crucial dynamics simultaneously. While our study intentionally avoids delving into qualitative aspects like leakage, user comfort, marketing strategies, and information asymmetry, this allows us to focus on practical applications. While research exists comparing sustainable and non-sustainable menstrual products, there are gaps in our understanding. Data on lifecycle analysis and cultural influences on consumption patterns is limited. Accessibility research often neglects social stigma and infrastructure challenges. Affordability analysis should consider long-term cost comparisons and the impact of government policies. Focusing on a specific demographic and incorporating qualitative research can provide deeper insights for promoting menstrual health and environmental sustainability.

1.3 PROBLEM IDENTIFICATION

The issue of menstrual hygiene encompasses several interrelated challenges that demand attention. Firstly, there’s a pressing environmental concern surrounding the growing waste generated by menstrual products, which often contain non-biodegradable materials. This contributes significantly to pollution and ecological degradation. Moreover, the health risks associated with the use of non-sustainable menstrual products are alarming, as they can expose individuals to harmful chemicals and materials. Additionally, the lack of access to sanitary products, particularly in marginalised communities, perpetuates health disparities and discomfort. Furthermore, social stigma and a lack of knowledge surrounding menstruation compound these challenges, hindering proper education and perpetuating taboos. Addressing these issues requires a comprehensive approach, including promoting sustainable menstrual products, improving access to hygiene resources, tackling social taboos through education and awareness campaigns, and implementing waste management strategies to mitigate environmental impact.

Growing Environmental Concerns:

The environmental impact of menstrual products is a pressing issue that demands immediate attention. The widespread use of non-biodegradable pads and tampons has led to a significant increase in waste generation, exacerbating pollution and contributing to environmental degradation. These products, often made from synthetic materials like plastic, take hundreds of years to decompose in landfills, releasing harmful chemicals into the soil and waterways. Moreover, the manufacturing process of these products consumes vast amounts of resources, including water, energy, and raw materials, further intensifying their environmental footprint. Transitioning to more sustainable alternatives such as reusable menstrual cups or biodegradable pads is imperative to mitigate this impact and promote eco-friendly menstrual hygiene practices.

Health Issues from Non-Sustainable Products:

The health implications of using non-sustainable menstrual products cannot be overstated. Many disposable pads and tampons contain synthetic materials, fragrances, and chemicals that can irritate sensitive skin and disrupt the natural pH balance of the vagina, leading to infections and discomfort. Additionally, the bleaching process used in the production of these products can result in the presence of harmful residues like dioxins, which have been linked to serious health effects, including hormonal disruption and reproductive issues. Educating individuals about these potential health risks and advocating for safer alternatives such as organic cotton pads or menstrual cups is essential to safeguard reproductive health and well-being.

Lack of Access to Sanitary Products:

Access to affordable and hygienic menstrual products remains a significant challenge, particularly for marginalised communities and those living in poverty. The inability to access essential menstrual products not only compromises menstrual hygiene but also perpetuates cycles of poverty and inequality. Many individuals, especially in rural areas and developing countries, resort to using makeshift materials like rags or leaves, putting their health at risk and further marginalising them from society. Initiatives aimed at providing free or subsidised menstrual products, coupled with education on menstrual health and hygiene, are crucial for ensuring that all individuals can manage their periods safely and with dignity, regardless of their socioeconomic status.

Social Stigma and Lack of Knowledge:

Menstruation continues to be shrouded in stigma and taboo in many societies, leading to widespread misinformation, shame, and embarrassment surrounding periods. This stigma prevents open discussions about menstrual health and hygiene, perpetuating harmful myths and preventing individuals from seeking necessary care and support. Comprehensive education programs that promote menstrual literacy, challenge stereotypes, and foster open dialogue are essential for breaking down these barriers and empowering individuals to make informed choices about their reproductive health. By addressing social stigma and promoting menstrual education, we can create supportive environments where menstruations feel comfortable and confident managing their periods, free from shame or discrimination.

1.4 OBJECTIVE OF STUDY

1) Comparing Consumption Patterns

This objective delves into the quantity and frequency of menstrual products used by individual women, specifically comparing consumption of sustainable products which include menstrual cups, period underwear and reusable cloth pads and consumption of

non-sustainable menstrual products like disposable pads and tampons. The goal is to determine which category of products has a higher overall consumption rate by individual women. By comparing these consumption patterns, we will gain insights into the environmental impact and potential cost savings associated with different menstrual product choices.

2) Assessing Accessibility

This objective focuses on understanding the extent to which individuals can access sustainable and non-sustainable menstrual products across diverse demographics. Factors considered include geographical availability, distribution networks and the level of awareness and education surrounding sustainable options.

3) Analysing Affordability

This goal entails examining the economic impact of both sustainable and non-sustainable menstrual products, assessing the financial strain they impose on consumers. By conducting a comparative analysis, we will explore how the cost factors into consumer decisions and its broader implications on economic sustainability.

1.5 NEED OF THE STUDY

Throughout history, the central role of women in society has ensured the stability, progress and long-term development of nations. Menstruation, a natural biological process for half the world's population, has been shrouded in secrecy and burdened by stigma in many societies. This has created a silent struggle for women and girls, who often lack access to proper hygiene products and education about their bodies. Good menstrual hygiene management (MHM) is crucial for women and girls to reach their full potential. On a given day, more than 300 million women worldwide are menstruating. In total, an estimated 500 million lack access to menstrual products and adequate facilities for hygiene management. The challenges that menstruating women face encompass more than a basic lack of supplies or infrastructure. The experiences of the menstruators continue to be constrained by cultural taboos and discriminatory social norms. The resulting lack of information about menstruation leads to unhygienic and unhealthy menstrual practices and creates misconceptions and negative attitudes which even motivate gender-based violence. For generations of girls and women, poor menstrual health and hygiene is exacerbating social and economic inequalities, negatively impacting their education, health, safety and human development.

In low-income countries, half of schools lack adequate water sanitation and hygiene services crucial to enable girls and female teachers to manage menstruation. (UNICEF, 2015)

Studies point that inadequate sanitary facilities affect girls significantly in contributing to low education. Poor menstrual hygiene can pose serious health risks like reproductive and urinary tract infections which can result in future infertility and birth complications. Promoting menstrual health and hygiene is an important means for safeguarding women's dignity, privacy, bodily integrity and consequently their self-efficacy. Awareness of MHH contributes to building an enabling environment of non-discrimination and gender equality. Improving menstrual hygiene and providing access to affordable menstrual materials can help improve girls and women's access to education, opening more options for jobs, promotions and entrepreneurship.

Our study contributes to understanding the complex dynamics surrounding menstrual hygiene management by examining consumption patterns, affordability and accessibility of sustainable and non-sustainable menstrual products.

Firstly, by examining how individuals use different products, it will shed light on preferences for sustainable versus non-sustainable options, along with user behaviour.

Cost is a critical barrier to menstrual hygiene. By comparing the affordability of sustainable and non-sustainable products, we can highlight the economic burden of menstruation. This analysis will identify potential roadblocks to accessing affordable and safe menstrual hygiene solutions. Furthermore, affordability and accessibility are intertwined. We will explore how economic factors, cultural acceptance, and social norms influence access to menstrual products across different demographics, potentially revealing disparities.

The study also provides as to why it is necessary to shift to sustainable alternatives of menstrual products based on environmental implications and economic considerations. The environmental impact of disposable menstrual products is undeniable. Our research will analyse how promoting access to sustainable and quality menstrual products, along with improved disposal methods, can significantly benefit the environment. While affordability may initially favour disposable products, the hidden economic burden of continually purchasing them will be compared to the long-term cost savings offered by sustainable menstrual options.

1.6 METHODOLOGY

Our research delves into the comparative analysis of sustainable and non-sustainable menstrual products among women aged 18-45. We aim to understand how factors like affordability, consumption patterns, and accessibility influence their choices.

To achieve this, we'll employ a mixed-methods approach. Online and offline surveys will gather data through a combination of:

Multiple-choice questions: Capture demographics, product usage (both sustainable and non-sustainable), and availability of different options.

Likert scales: Gauge comfort levels, awareness of sustainable alternatives, overall satisfaction with current products, motivations behind product choices, and any challenges they face regarding menstrual hygiene management.

Our research will leverage a robust data analysis strategy to uncover key trends and motivations. Here's how we'll dissect the information:

Statistical Methods:

- Regression Analysis: We'll use regression analysis, specifically income consumption functions, to explore the relationship between income and menstrual product consumption patterns. This will reveal how affordability influences choices between sustainable and non-sustainable options.

Charts for Effective Communication:

- Bar Charts: To visualise product usage frequencies, we'll utilise bar charts. These will clearly illustrate the prevalence of sustainable and non-sustainable product choices across different demographics.
- Pie Charts: Pie charts will effectively represent the distribution of responses regarding awareness levels of sustainable products. This will provide a quick snapshot of knowledge gaps and potential areas for education initiatives.
- Scatter Plots: If a relationship between variables (e.g., comfort level and product type) is suspected, scatter plots will be employed. These will visually depict any correlations, allowing us to identify potential trade-offs women make when choosing menstrual products.

This combined approach, utilising statistical methods and various charts alongside qualitative analysis, will provide a comprehensive picture. We'll not only identify trends but also understand the "why" behind them. This will yield valuable insights for promoting informed choices and potentially shaping a more sustainable future for menstrual hygiene products.

Ethical considerations are a top priority. Participants will provide informed consent, and anonymity is guaranteed throughout the research. Data will be securely stored and used solely for this study. This comprehensive approach will contribute valuable insights into the landscape of menstrual product use, promoting informed choices for women and potentially paving the way for a more sustainable future in feminine hygiene.

1.7 AREA OF STUDY

The focus of our study comparing sustainable and non-sustainable menstrual products narrows in on the vibrant state of Kerala, India. Encompassing both bustling urban centres and serene rural landscapes, Kerala provides a unique and diverse microcosm for analysing product use across these contrasting demographics. This geographically targeted approach allows us to delve deeper into the interplay between product choice, affordability, and accessibility within a specific socio-economic context.

1.8 TYPE OF ANALYSIS

This research employs both descriptive and analytical techniques.

1.9 PERIOD OF STUDY

Data collection for this research was conducted in the year 2024

1.10 THEORETICAL FRAMEWORK

From an economic perspective this topic can be analysed using the theoretical framework of “Behavioural Economics”. Behavioural economics combines elements of economics and psychology to understand why and how people behave in the real world. Through empirical observations of human behaviour, it has been demonstrated that people do not always make “rational” or optimal decisions even if they have the information and the tools available to do so.

Bounded Rationality, propounded by Nobel Laureate Herbert A Simon, is the idea that the cognitive decision-making capacity of humans cannot be fully rational because of a number of limits that we face. These limits include information failure, the amount of time that we have to make our decisions and cognitive inability.

In the context of our research topic this theory offers valuable insights into the decision-making process of consumers. The theory pinpoints the following bounded rationality factors:

Limited Information: Consumers may not have access to comprehensive information about the environmental impacts, health effects of long-term costs associated with different menstrual products. As a result, they may rely on simplified decision-making heuristics, brand recognition or incomplete information when choosing between sustainable and non-sustainable options.

Cognitive Constraints: Individuals have finite cognitive resources and may not be able to process all available pieces of information and consider every possibility when making decisions about menstrual products. This can lead to reliance on mental shortcuts such as choosing familiar brands or products that are readily available rather than conducting extensive research.

Time Constraints: Consumers often face time pressures and may not invest significant time researching and comparing sustainable options. More often they quickly purchase supplies or the convenience of using disposable products. Consumers may prioritise immediate convenience over longer term considerations of sustainability or affordability.

Social and Cultural Influences: The theory acknowledges the influence of social norms, peer pressure and cultural factors on decision making. Consumers may choose menstrual products based on social perceptions on hygiene, comfort or status rather than pure rational considerations.

The bounded rationality model also suggests that individuals may have limited ability to accurately assess risks and benefits associated with different options. In the case of menstrual products, consumers may underestimate the environmental impact of disposable products or overlook potential health risks associated with certain materials or ingredients.

1.11 LIMITATIONS OF THE STUDY

1) Sampling Bias – Since the survey was circulated among women and girls who menstruate, it might not represent the entire population, especially those who may not have access to the internet or are not comfortable responding to surveys. This may not reflect the consumption patterns, accessibility and affordability concerns of the broader population.

2) Self Reporting Bias – Responses collected through this survey may be subject to self-reporting bias, where participants may provide socially desirable answers or may not accurately recall their consumption patterns or experiences.

3) Regional Bias – Depending on where the survey was circulated it doesn't capture the diversity of experiences and challenges faced by menstruators in different regions, as access to menstrual products and awareness about sustainability can vary significantly.

4) Age Group Limitation- As most of the responses were from the age group of 18-25, it excluded experiences and perspectives of younger and older menstruators who may have different consumption patterns, accessibility issues and affordability concerns.

The study acknowledges that there are many factors that influence a person's choice of menstrual products such as individual preferences, socioeconomic status, cultural beliefs and geographical limitations, and the results of the study may not apply to everyone.

1.12 SCHEME OF THE STUDY

Chapter 1:

Introduction This chapter sets the stage for research. It provides a broad introduction to the topic and review of literature. The chapter clearly defines the research problem and explains the significance of the study. The research objectives and methodology are then outlined, along with a description of the area of study and the theoretical framework employed. Finally, it acknowledges the limitations of the study.

Chapter 2:

Overview This chapter gives a brief outlook about the menstrual products, focusing on their sustainability and environmental impact. It compares sustainable and non-sustainable menstrual alternatives using three key factors: consumption patterns, affordability and accessibility.

Chapter 3:

Analysis and Interpretation Third chapter takes a deeper dive, analysing and comparing sustainable and non- sustainable menstrual options.

Chapter 4:

Findings, Suggestions and Conclusions The fourth chapter presents the findings, suggestions and conclusions derived from the primary data analysis.

CHAPTER 2

AN OVERVIEW OF CONSUMPTION, AFFORDABILITY AND ACCESSIBILITY OF SUSTAINABLE AND NON-SUSTAINABLE MENSTRUAL PRODUCTS

2.1 Introduction to Menstrual Products

Menstruation, a natural biological process experienced by millions of people worldwide, has been intertwined with cultural, social, and economic narratives throughout history. Central to managing menstruation are menstrual products, which play a vital role in maintaining hygiene, comfort, and dignity for individuals during their menstrual cycles. The evolution of menstrual products reflects not only advancements in technology and material science but also shifts in societal attitudes towards menstruation and environmental consciousness.

Menstrual hygiene is of paramount importance for the health and well-being of individuals. Proper menstrual hygiene practices help prevent infections, discomfort, and stigma associated with menstruation. Access to safe and effective menstrual products is a fundamental aspect of menstrual hygiene management, ensuring that individuals can go about their daily lives with confidence and dignity.

The spectrum of menstrual products is diverse, catering to the varied needs and preferences of individuals. Traditional methods like cloth pads and reusable menstrual cups coexist with modern innovations such as disposable pads, tampons, and period underwear. Each product type offers unique benefits and challenges, influenced by factors such as accessibility, affordability, cultural norms, and environmental impact.

Commonly used types of Menstrual Products:

- Disposable Pads: Widely used and readily available, disposable pads are made from absorbent materials like cotton or synthetic fibres. They offer convenience and ease of use but contribute to environmental waste and may contain chemicals that can pose health risks.
- Tampons: Another popular option, tampons are inserted into the vagina to absorb menstrual flow. They are compact and discreet, but concerns exist regarding their environmental impact, as most tampons are made from non-biodegradable materials and come with plastic applicators.
- Menstrual Cups: A reusable alternative to pads and tampons, menstrual cups are made from medical-grade silicone or rubber and are inserted into the vagina to collect menstrual flow. They are eco-friendly, cost-effective, and can be worn for up to 12 hours, making them a sustainable choice for many individuals.
- Reusable Cloth Pads: Similar in design to disposable pads but made from washable fabric materials, reusable cloth pads offer a more sustainable option for menstrual hygiene. They can be washed and reused multiple times, reducing waste and minimising environmental impact.

- Period Underwear: A relatively recent innovation, period underwear features absorbent layers that trap menstrual flow, eliminating the need for additional products like pads or tampons. They are reusable, comfortable, and provide an alternative for those seeking a more discreet and eco-friendly menstrual solution.
- By exploring the diverse landscape of menstrual products, we gain insight into the complex interplay between personal preferences, cultural norms, environmental considerations, and health outcomes. In the following sections, we will delve deeper into the sustainability of menstrual products, examining their environmental impact, social implications, and economic factors.

2.2 Sustainability in Menstrual Products

Menstrual hygiene practices have evolved significantly over time, with a growing emphasis on sustainability reflecting broader concerns about environmental conservation and social equity. Sustainability in menstrual products encompasses a range of interconnected factors, including environmental impact, resource consumption, material composition, social accessibility, and economic viability.

At the heart of the sustainability discourse lies an assessment of the environmental footprint associated with different types of menstrual products. Disposable pads and tampons, ubiquitous in many parts of the world, are often made from non-biodegradable materials such as plastics and synthetic fibres. The production and disposal of these products contribute to carbon emissions, resource depletion, and waste accumulation, exacerbating environmental degradation and pollution. Furthermore, the use of potentially harmful chemicals in disposable menstrual products raises concerns about both human health and ecosystem integrity.

In contrast, reusable menstrual products offer a more sustainable alternative, mitigating many of the environmental concerns associated with disposables. Menstrual cups, typically made from medical-grade silicone or rubber, can last for several years with proper care and maintenance. Their long lifespan and minimal resource requirements make them a cost-effective and eco-friendly choice for many individuals. Similarly, cloth pads and period underwear, made from washable fabric materials, offer reusable options that reduce waste and minimise environmental impact.

Beyond environmental considerations, sustainability in menstrual products also encompasses social and economic dimensions. Access to affordable and culturally appropriate menstrual products is essential for promoting menstrual equity and dignity, particularly in low-income communities and developing regions. However, the

affordability and accessibility of sustainable options remain a challenge for many individuals, highlighting the need for targeted interventions and inclusive policies.

Furthermore, transitioning to sustainable menstrual products can have positive socio-economic implications, including opportunities for local manufacturing, job creation, and economic empowerment. By promoting local production and fair labour practices, sustainable menstrual initiatives can contribute to community resilience and livelihood sustainability, fostering greater social inclusion and economic resilience.

Consumer awareness and behaviour change are crucial drivers of sustainable menstrual practices. Education campaigns, peer-to-peer support networks, and community-led initiatives play a pivotal role in raising awareness about the environmental and health benefits of reusable menstrual products, dispelling myths and taboos surrounding menstruation, and empowering individuals to make informed choices.

In conclusion, sustainability in menstrual products represents a holistic approach that considers environmental, social, and economic factors. By embracing reusable alternatives, promoting menstrual equity, and fostering consumer empowerment, we can work towards a more sustainable and equitable future for menstrual hygiene worldwide.

2.3 Contrasting sustainable and non-sustainable options

Contrasting sustainable and non-sustainable menstrual products requires examining their environmental impact, cost, and materials used. When assessing environmental impact, it's crucial to consider the product's entire life cycle, from raw material extraction to disposal. Non-sustainable options like disposable pads and tampons have a significant carbon footprint due to their manufacturing processes, transportation, and waste generation. In contrast, sustainable products such as menstrual cups and reusable cloth pads have a lower carbon footprint as they can be reused multiple times, reducing the need for frequent production and disposal.

From a cost perspective, sustainable menstrual products may initially appear more expensive than non-sustainable options. However, considering their longevity and reusability, they offer better value in the long run. Reusable products can last for several years, significantly reducing the ongoing cost of purchasing disposable products each month. Additionally, some sustainable products may be eligible for tax incentives or discounts, making them even more affordable.

The materials used in menstrual products also play a vital role in sustainability. Disposable pads and tampons are primarily made from non-biodegradable plastics and other synthetic materials, which contribute to plastic pollution and can take hundreds of years to decompose. In contrast, sustainable products often use biodegradable or

compostable materials, such as organic cotton, bamboo, or silicone, which have a lower environmental impact and can be safely disposed of without harming the environment.

Sustainable menstrual products also prioritise health and well-being. Some individuals may experience allergic reactions or discomfort from using disposable products due to the presence of chemicals, fragrances, or certain materials. Sustainable products made from natural materials are often gentler on the skin and reduce the risk of irritation or infection.

In conclusion, sustainable menstrual products offer numerous advantages over non-sustainable options in terms of environmental impact, cost, materials used, and health. By making informed choices and adopting sustainable menstrual practices, individuals can contribute to a healthier planet and promote overall well-being.

2.3.1 Assessing environmental impact: carbon, waste, water

When it comes to menstrual products, their environmental impact is a crucial factor to consider. Disposable options, like plastic pads and tampons, have a significant carbon footprint due to their production processes and disposal. The manufacturing of these products relies heavily on fossil fuels, contributing to greenhouse gas emissions. Moreover, their non-biodegradable nature means they can take hundreds of years to decompose, polluting landfills and oceans.

In contrast, reusable menstrual products, such as menstrual cups and cloth pads, offer a more sustainable alternative. Their carbon footprint is significantly lower, as they can be reused multiple times, reducing the need for continuous production and disposal. Additionally, reusable products generate minimal waste, as they can be washed and reused, unlike disposable products that contribute to overflowing landfills.

Water consumption is another important aspect to assess. Disposable menstrual products require substantial amounts of water during production. For instance, a single disposable pad can consume up to 3 gallons of water during its manufacturing process. On the other hand, reusable menstrual products don't require additional water for their use, making them a more water-efficient choice.

By opting for sustainable menstrual products, individuals can make a positive impact on the environment. Reusable options, like menstrual cups and cloth pads, significantly reduce carbon emissions, minimise waste generation, and conserve water. Embracing these eco-friendly alternatives is a step towards a more sustainable future and a healthier planet.

Furthermore, reusable menstrual products often come with additional benefits for the user. Menstrual cups, for instance, can provide a more comfortable and leak-free period

experience, while cloth pads offer a customizable and gentle option for sensitive skin. These products empower individuals to make informed choices that align with both their personal well-being and the well-being of the environment.

2.3.2 Materials scrutiny: biodegradability, recyclability, renewability

When selecting menstrual products, it's essential to consider their environmental impact. This involves evaluating the biodegradability, recyclability, renewability, and plastic content of these products.

Disposable menstrual products made from conventional plastics pose a significant threat to our environment. These materials can take hundreds of years to decompose, accumulating in landfills and polluting our oceans. Microplastics, tiny fragments of plastic, can be ingested by marine life and enter the food chain, potentially harming human health. In contrast, biodegradable products, often crafted from plant-based materials like bamboo or cornstarch, break down much more rapidly, reducing their environmental impact. These materials decompose naturally, releasing organic matter back into the soil, without leaving behind harmful microplastics.

Recyclability plays a crucial role in reducing waste and promoting a circular economy. Unfortunately, many disposable menstrual products, such as plastic applicators and pads, are not recyclable and end up in landfills, where they can take centuries to decompose. Reusable products, such as menstrual cups and cloth pads, offer a sustainable alternative. These products can be reused multiple times, significantly reducing the amount of waste generated. Additionally, some disposable products, like certain brands of pads and tampons, now come with recyclable packaging, further minimising their environmental footprint.

The renewability of materials used in menstrual products is another critical factor to consider. Products made from renewable resources, such as organic cotton or bamboo, have a lower environmental impact compared to those made from non-renewable resources, such as petroleum-based plastics. Renewable materials can be replenished naturally, reducing the depletion of finite resources and promoting a circular economy. By choosing products made from renewable materials, we can support sustainable agriculture practices and reduce our reliance on fossil fuels.

Plastic pollution has become a global crisis, and menstrual products are significant contributors to this problem. Many disposable products, such as pads and tampons, contain significant amounts of plastic, which can end up in our oceans and harm marine life. By opting for products that minimise or eliminate plastic, such as menstrual cups or cloth pads, we can significantly reduce the environmental impact of menstrual

products. These alternatives not only reduce plastic waste but also provide a healthier and more sustainable option for women.

2.4 Global menstrual product market

In the global landscape of consumer goods, the menstrual product market stands out as a sector poised for substantial growth. By 2027, this market is projected to reach an impressive valuation of USD 24.3 billion, expanding at a noteworthy compound annual growth rate (CAGR) of 7.2% from 2022 onwards. This remarkable trajectory is primarily attributed to a confluence of favourable factors, including a surge in awareness regarding menstrual hygiene, a rise in disposable incomes, and the steady march of urbanisation across the globe.

The menstrual product market is characterised by a competitive landscape, with established players vying for market share. Among the key industry participants were renowned names such as Procter & Gamble, Johnson & Johnson, Unicharm, Kimberly-Clark, and Edgewell Personal Care. These industry stalwarts have cemented their positions through strategic investments in product development, marketing initiatives, and distribution networks.

The market for menstrual products encompasses a diverse spectrum of offerings, broadly classified into disposable and reusable categories. Disposable products currently command the lion's share of the market, owing to their convenience and ease of use. However, reusable products are gaining traction, fuelled by growing consumer consciousness about environmental sustainability. This shift in consumer preferences presents opportunities for manufacturers to innovate and cater to the evolving demands of environmentally conscious consumers.

Regionally, the menstrual product market exhibits variations in growth dynamics. North America and Europe currently dominate the market, capturing a substantial portion of the global revenue pie. Nevertheless, the Asia Pacific region is poised for the most rapid expansion, driven by a combination of factors such as population growth and rising disposable incomes. This region presents a fertile ground for market players seeking to tap into new growth opportunities.

2.5 Menstrual Affordability

Menstrual affordability is a major barrier to menstrual health and hygiene, especially in low-income countries. The high cost of menstrual products. Lack of access to disposable income for women and girls, regressive taxation on menstrual products, and limited or no government subsidies for menstrual products all contribute to menstrual unaffordability. The high cost of menstrual products is a significant barrier to affordability. The cost of a single menstrual product can range from a few cents to

several dollars, and women and girls may need to use multiple products per day. This can add up to significant expenses, especially for those living in poverty. In some cases, women and girls may have to resort to using unsafe or unhygienic materials, such as rags or leaves, which can lead to health problems.

Lack of access to disposable income for women and girls is another major barrier to menstrual affordability. In many low-income countries, women and girls have limited access to education and employment opportunities, which means they have little or no disposable income. This makes it difficult for them to afford menstrual products, even if they are available at a low cost.

Regressive taxation on menstrual products is another factor that contributes to menstrual unaffordability. In many countries, menstrual products are subject to value-added tax (VAT) or other forms of taxation, which can increase their cost by up to 20%. This makes menstrual products even more expensive for women and girls who are already struggling to afford them. Limited or no government subsidies for menstrual products is another major barrier to affordability. In many countries, governments do not provide any subsidies for menstrual products, which means that women and girls have to pay the full cost of these products. This can make it difficult for them to afford menstrual products, even if they are available at a low cost.

Menstrual affordability has a number of negative consequences for women and girls. It can lead to missed school or work, social isolation, and increased risk of infection. It can also contribute to poverty, as women and girls may have to spend more money on menstrual products than they can afford. Addressing menstrual unaffordability is essential to improving menstrual health and hygiene. This can be done through a number of measures, such as reducing the cost of menstrual products; increasing access to disposable income for women and girls; eliminating regressive taxation on menstrual products; and providing government subsidies for menstrual products. By making menstrual products more affordable, we can help to ensure that all women and girls have the opportunity to manage their menstruation safely and hygienically.

2.6 Menstrual Accessibility

Menstrual accessibility remains a substantial obstacle for numerous women and girls globally. The absence of clean water sources, sanitation facilities, and menstrual hygiene awareness poses significant challenges to their well-being. Limited availability of menstrual products, compounded by their high cost and the persistence of social taboos, further exacerbates the situation.

The lack of awareness surrounding menstrual products and proper hygiene practices compounds the challenges faced by women. Many lack access to accurate information, leading to improper usage of menstrual products and increased susceptibility to

infections. This knowledge gap not only impedes their ability to manage their menstrual cycles effectively but also jeopardises their overall health.

The limited availability of menstrual products, especially in low-income regions, presents a significant hurdle for many women and girls. The inaccessibility of these essential items' forces some to resort to unhygienic alternatives like rags, leaves, or even animal dung. Such practices heighten their vulnerability to infections, skin irritations, and even life-threatening conditions like toxic shock syndrome.

The financial burden associated with menstrual products further compounds these challenges. In numerous countries, these products are unjustly categorised as luxury items, resulting in exorbitant taxes that make them unaffordable for many women and girls. This stark reality forces them to make difficult choices between purchasing menstrual products and other essential necessities, compromising their well-being in the process.

Social taboos and cultural restrictions surrounding menstruation persist as formidable barriers to menstrual health and hygiene. In many societies, menstruation is shrouded in stigma, causing women and girls to endure it in silence. This atmosphere of secrecy impedes open discussions, hindering their access to crucial information and support. Breaking these taboos and fostering open dialogue are vital steps toward ensuring women's well-being and empowerment.

Addressing menstrual accessibility is not merely a matter of convenience; it is a fundamental necessity for promoting women's health and dignity. By increasing access to clean water, sanitation facilities, and menstrual hygiene education, we can empower women and girls to manage their menstrual cycles safely and hygienically. Furthermore, making menstrual products affordable and eradicating social stigmas are essential steps toward achieving menstrual equity and ensuring the well-being of women and girls everywhere.

2.7 Consumption pattern, affordability and accessibility of menstrual products in Indian context

In India, the high cost of menstrual products, lack of access to clean water and sanitation facilities, and social stigma and taboos surrounding menstruation create significant barriers for women and girls to manage their periods in a healthy and dignified way. This situation is often referred to as "menstrual poverty" and has far-reaching consequences for women's health, education, and overall well-being.

Understanding the consumption patterns, affordability, and accessibility of menstrual products in the Indian context is crucial to addressing this issue effectively. This article aims to explore the challenges and opportunities related to menstrual products in India,

highlighting government initiatives and the importance of awareness and education in promoting menstrual health and hygiene. By shedding light on these aspects, we hope to contribute to the ongoing efforts to ensure that all women and girls have the resources they need to manage their menstruation with dignity and confidence.

2.7.1 Menstrual poverty, affordability, and accessibility in India

In India, menstrual poverty, affordability, and accessibility pose formidable obstacles to women and girls, hindering their ability to manage their menstrual cycles with dignity and well-being. The high cost of menstrual products, such as sanitary napkins and tampons, creates a significant economic barrier, particularly for those living in poverty. This financial constraint often forces women and girls to resort to unhygienic alternatives, such as rags, leaves, or even cow dung, which can lead to infections and other health complications, perpetuating a vicious cycle of ill health and poverty.

The absence of adequate access to clean water and sanitation facilities further compounds the challenges of maintaining proper menstrual hygiene. Many women and girls lack the necessary resources to ensure hygiene during their periods, increasing their vulnerability to infections and diseases. This lack of basic amenities not only poses a threat to physical health but also contributes to feelings of shame, stigma, and social isolation, which further exacerbates the difficulties faced by women and girls during menstruation.

Addressing menstrual poverty, affordability, and accessibility requires a multifaceted approach that involves various stakeholders. Government initiatives play a crucial role in implementing policies that subsidise or provide free menstrual products to those in need, ensuring that cost does not become a barrier to menstrual hygiene. Public awareness campaigns are essential to break the silence surrounding menstruation and challenge societal taboos and stigmas. Additionally, promoting the development and availability of sustainable menstrual products, such as reusable menstrual cups and cloth pads, can provide affordable and eco-friendly alternatives, reducing both economic and environmental burdens.

By raising awareness, providing affordable options, and ensuring access to clean water and sanitation facilities, we can work towards creating a more equitable and dignified environment for women and girls in India during their menstrual cycles. This would not only improve their overall health and well-being but also contribute to their social and economic empowerment, fostering gender equality and sustainable development.

2.7.2 Changing consumption patterns of menstrual products in India

In India, there has been a significant shift in the consumption patterns of menstrual products, driven by various factors such as increased awareness, changing lifestyles, and growing disposable incomes. Disposable menstrual products, such as sanitary pads and tampons, have gained immense popularity due to their convenience and ease of use. However, the rise of disposable menstrual products has also brought about concerns regarding waste generation and environmental impact.

To address these concerns, there has been a growing preference for organic and eco-friendly menstrual products. These products, such as cloth pads, menstrual cups, and period underwear, offer a sustainable and reusable alternative to disposable products. Many women are now opting for these eco-friendly options due to their environmental consciousness and desire to reduce their carbon footprint.

Social media and digital platforms have played a crucial role in shaping menstrual product choices in India. These platforms have enabled open discussions about menstruation, breaking the silence and stigma surrounding the topic. Influencers and social media campaigns have been instrumental in raising awareness about menstrual health and hygiene, empowering women to make informed choices about their menstrual products.

The market for period underwear and menstrual cups has witnessed substantial growth in India. Period underwear, which offers leakproof and comfortable protection, has become a popular choice for women seeking a convenient and eco-friendly option. Menstrual cups, which are reusable and provide long-lasting protection, have also gained traction due to their cost-effectiveness and reduced environmental impact.

Despite the progress made in urban areas, challenges persist in rural regions where access to affordable and sustainable menstrual products remains limited. The high cost of disposable products and the lack of proper sanitation facilities pose significant barriers for women and girls in rural communities. Addressing these challenges requires targeted interventions and initiatives aimed at making menstrual products more affordable and accessible in these areas.

2.8 Challenges and opportunities for sustainable menstrual products in India

Despite the growing awareness and demand for sustainable menstrual products in India, there are still several challenges that hinder their widespread adoption. These challenges include:

- Limited awareness and education: There is a lack of awareness and education about sustainable menstrual products among rural and low-income communities in India. Many women and girls in these communities are not aware of the benefits of sustainable menstrual products or how to use them. This lack of knowledge can lead to continued reliance on traditional and disposable menstrual products.
- High cost: The cost of sustainable menstrual products is often higher compared to disposable options. This can be a significant barrier for women and girls from low-income households, who may struggle to afford these products. The high cost of sustainable menstrual products can also discourage women from trying new products or experimenting with different options.
- Limited availability: The availability of sustainable menstrual products in rural and remote areas is often limited. This can make it difficult for women and girls in these areas to access these products, even if they are aware of their benefits and can afford them. The limited availability of sustainable menstrual products can also lead to increased reliance on traditional and disposable menstrual products.
- Social and cultural barriers: There are still significant social and cultural barriers to the adoption of sustainable menstrual products in India. Menstrual taboos and stigma can make it difficult for women and girls to openly discuss menstruation and their menstrual needs. This can also lead to a lack of support for women and girls who want to use sustainable menstrual products.

Despite these challenges, there are also several opportunities for sustainable menstrual products in India. These opportunities include:

- Growing demand for environmentally friendly products: There is a growing demand for environmentally friendly products among consumers in India. This demand is driven by increasing awareness of the environmental impact of disposable menstrual products and the desire to reduce waste. The growing demand for environmentally friendly products presents an opportunity for sustainable menstrual products to gain market share.
- Increasing awareness of the health risks of disposable menstrual products: There is increasing awareness of the health risks associated with disposable menstrual products, such as toxic shock syndrome (TSS). This awareness is driving women and girls to seek out alternative menstrual products that are safer and healthier. The increasing awareness of the health risks of disposable menstrual products presents an opportunity for sustainable menstrual products to be positioned as a healthier option.

- Government's commitment to promoting menstrual hygiene: The Indian government has launched several initiatives to promote menstrual hygiene and access to menstrual products. These initiatives include the distribution of free menstrual products and the construction of sanitary napkin incinerators. The government's commitment to promoting menstrual hygiene presents an opportunity for sustainable menstrual products to be included in these initiatives and reach a wider audience.

CHAPTER 3

ANALYSIS AND INTERPRETATION OF COMPARISON ON SUSTAINABLE AND NON-SUSTAINABLE MENSTRUAL PRODUCTS

Menstrual hygiene management is crucial for the health, well-being, and empowerment of women and girls around the globe. The choices they make about menstrual products are influenced by cultural, social, economic, and environmental factors. This chapter delves into a comprehensive analysis of menstrual product consumption patterns, affordability, and accessibility, employing a triple lens approach. Through a survey of 184 respondents, we aim to illuminate the intricate landscape surrounding menstrual products.

The data gathered provides a valuable window into the realities of menstrual health management. We have meticulously analysed this data using visual representations and statistical techniques. The findings, meticulously categorised into three distinct sections, will shed light on:

Consumption Patterns: This section delves into the types and quantities of menstrual products commonly used by the surveyed population. It explores factors influencing these choices, such as brand preferences, product features, and environmental concerns.

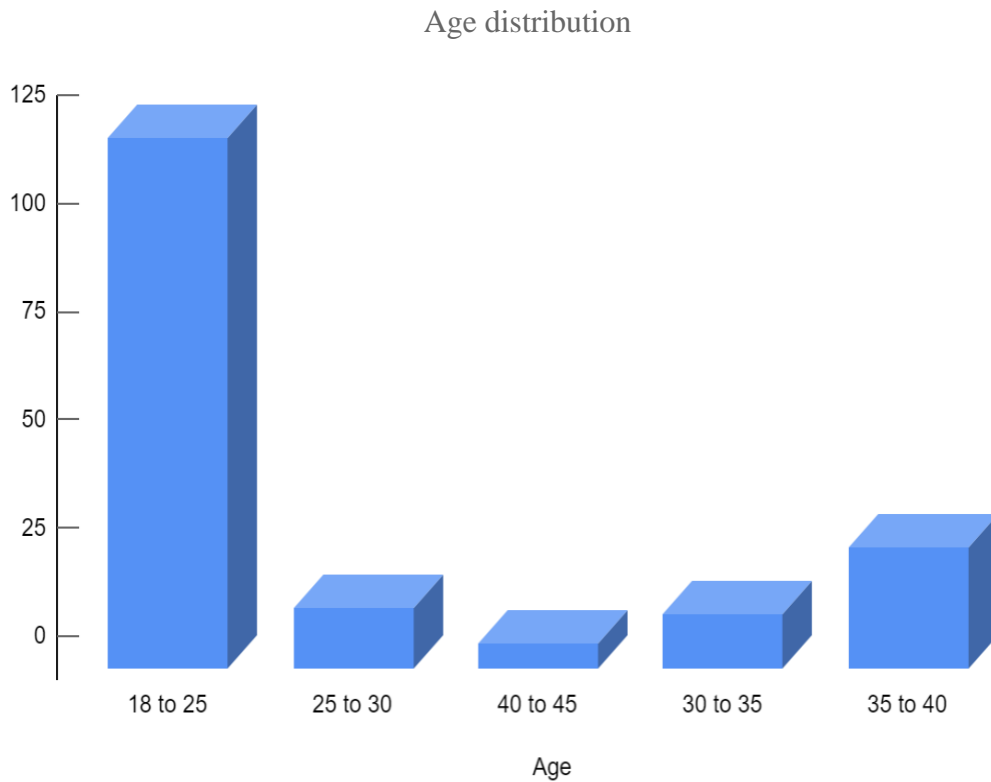
Affordability: Here, we dissect the financial constraints impacting individuals' access to menstrual products. By understanding these factors, we can identify areas requiring intervention to ensure menstrual health equity.

Accessibility: This section uncovers the barriers and facilitators of obtaining menstrual products. We explore factors such as product availability and potential social or cultural stigmas that might hinder access.

This analysis aims to uncover the preferences in menstrual hygiene products in the context of an increasing awareness of sustainability and the environmental impact of non-sustainable products. The region's unique socio-economic landscape, coupled with governmental and non-governmental health initiatives, influences women's choices and their accessibility to these products. As we continue to promote greater awareness and support for sustainable menstrual products, it is crucial to consider the multi-faceted influences that drive these preferences. The findings from this study serve as a foundation for further exploration and action towards sustainable practices in menstrual hygiene management.

3.0.1 Age of the respondents

The distribution of respondent ages within our study presents a rich tapestry of demographic composition. As we delve into the graph illustrating this distribution, we find a diverse array of respondents spanning various age groups, each offering unique insights into their preferences and behaviours regarding menstrual products.



Source: Primary data

Fig 3.1

The largest cohort, comprising 123 respondents, falls within the age bracket of 18 to 25 years old, representing a significant proportion of our sample. This youthful demographic is often characterised by evolving preferences and attitudes towards menstrual hygiene, influenced by factors such as lifestyle, societal norms, and access to information. It's noteworthy that within this age group, preferences may lean towards convenience and ease of use, with sanitary pads being a popular choice.

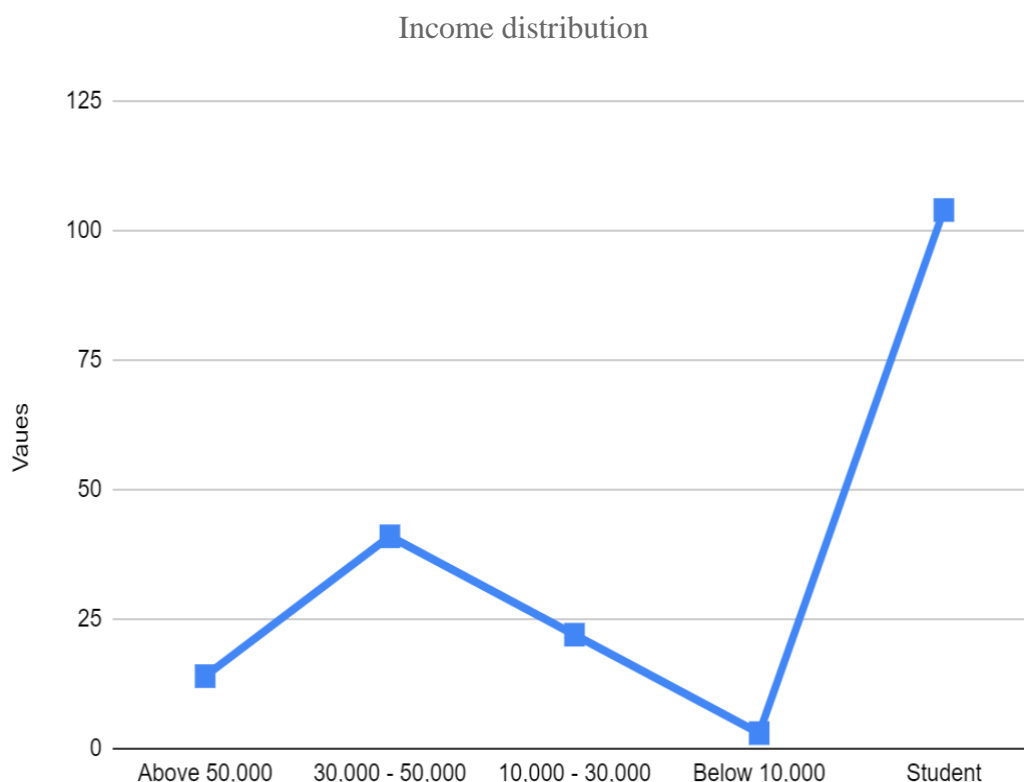
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Furthermore, we observe a smaller but still significant cohort of 6 respondents falling within the 40 to 45 age brackets. This group represents individuals approaching or within the perimenopausal stage, where menstrual patterns may undergo significant changes.

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within the perimenopausal stage, where menstrual patterns may undergo significant changes. For these respondents, considerations regarding menstrual product comfort, reliability, and sustainability may intersect with broader health concerns and lifestyle preferences.

3.0.2 Income distribution



Source: Primary data

Fig 3.2

The interpretation of the respondents' income distribution provides valuable insights into the consumption patterns, affordability, and accessibility of menstrual products across various socioeconomic groups. Among the respondents, the highest income bracket, comprising individuals earning above 50,000, represents a minority but influential segment. Despite their smaller numbers, understanding their purchasing power and preferences is crucial, as they may have more disposable income to allocate towards menstrual products. This group's preferences and spending habits can provide valuable insights into premium and sustainable product demand, as well as their willingness to pay for eco-friendly alternatives.

In contrast, the moderate-income brackets, including earners between 30,000 to 50,000 and 10,000 to 30,000, constitute a significant portion of the sample. These individuals represent middle-income earners who may prioritise affordability while seeking quality menstrual products. Analysing their consumption patterns and affordability concerns can uncover trends in product preferences and price sensitivity within this demographic. Additionally, understanding their accessibility to both sustainable and non-sustainable options can shed light on the availability of affordable alternatives in the market.

The lowest income bracket, consisting of respondents earning below 10,000, represents a group facing significant financial constraints. While this segment is the smallest in terms of respondents, their challenges in accessing and affording menstrual products are critical to address. Investigating their purchasing behaviours and barriers to product access can inform strategies to improve affordability and ensure inclusivity within the menstrual product market. Additionally, exploring their attitudes towards sustainable options can highlight the importance of affordability in promoting eco-friendly alternatives among economically disadvantaged groups.

Furthermore, the inclusion of students in the analysis is paramount, given their unique financial circumstances and consumer behaviours. With a substantial number of respondents, students represent a diverse demographic with varying levels of income or financial dependency. Understanding their preferences, affordability concerns, and access to menstrual products is essential for addressing the needs of this sizable consumer base. By examining the intersection of income and student status, insights can be gained into the challenges faced by young consumers in accessing affordable and sustainable menstrual products.

In conclusion, analysing the income distribution of respondents provides a nuanced understanding of the consumption patterns, affordability, and accessibility of menstrual products across different socioeconomic groups. By identifying disparities and preferences within each income bracket, targeted interventions and market strategies can be developed to address the diverse needs of consumers and promote inclusivity within the menstrual product market.

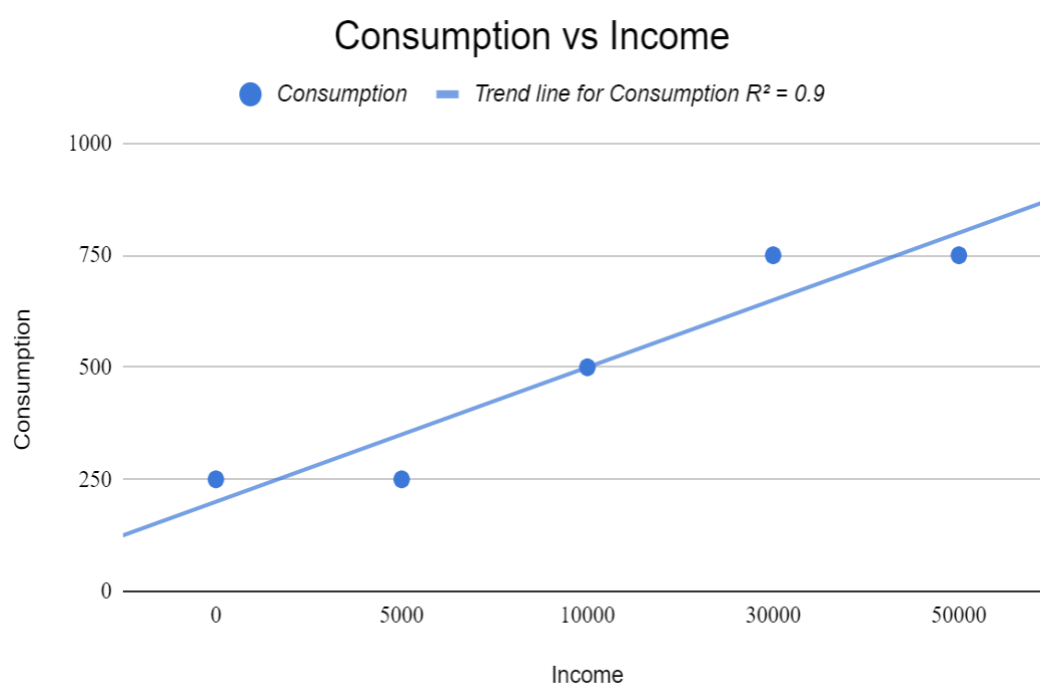
3.1 Consumption Pattern

By exploring the types and usage of sustainable and non-sustainable menstrual products, we aim to highlight the current trends, benefits, and detriments within this demographic, ultimately engaging with broader discussions on environmental sustainability and women's health initiatives in Kerala. In Kerala, a state known for its progressive approach to women's health and environmental conservation, the choice between sustainable and non-sustainable menstrual products carries added significance. Traditionally, a variety of menstrual products have been used, ranging from cloth pads

to commercially available disposable sanitary napkins and tampons. Understanding this context is crucial for analysing consumption patterns and promoting sustainable practices in menstrual hygiene management. Examining the consumption patterns of menstrual products among women aged 18 to 45 in Kerala reveals significant insights into the balance between sustainable and non-sustainable products. This analysis not only sheds light on the preferences and economic implications involved but also underscores the broader environmental and health impacts these choices foster.

3.1.1 Regression of income on consumption

The analysis we're examining explores the relationship between income and the consumption of menstrual products. This data, gathered from a survey of 184 individuals, sheds light on spending patterns and potential socioeconomic factors influencing these purchases. While the sample size is relatively modest, the insights gleaned can pave the way for further exploration and potentially inform future initiatives.



Source: Primary data

Fig 3.3

The data presentation utilises a scatter plot. Here, each point represents the median income and median consumption of menstrual products for a specific income bracket. We see income levels ranging from ₹0 to ₹50,000 on the x-axis, plotted against the median monthly expenditure on menstrual products (₹100 to ₹1000) on the y-axis. The upward trend of the regression line superimposed on the scatter plot reveals a positive

correlation between income and spending on menstrual products. In simpler terms, as income increases, the median spending on these products also tends to rise.

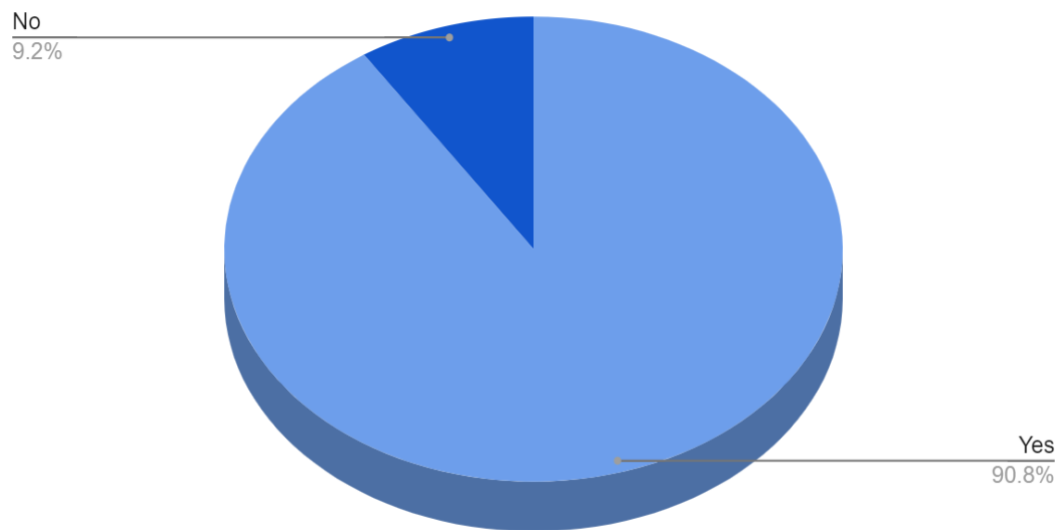
The observed upward trend in the regression line suggests a positive correlation between income and consumption. As income levels increase on the x-axis, the median spending on menstrual products on the y-axis also tends to rise. This aligns with the concept of income elasticity of demand. This economic principle states that the quantity demanded for a good (in this case, menstrual products) changes in response to a change in income. A positive income elasticity indicates that as income increases, the quantity demanded also increases, reflecting the observed trend.

The R-squared value of 0.9 signifies a very strong positive correlation between the two variables. An R-squared value of 1 indicates a perfect positive correlation, where all the data points fall exactly on the regression line. In this case, an R-squared value of 0.9 suggests that the income variable explains 90% of the variations in the consumption of menstrual products. However, it is important to note that correlation does not imply causation. There could be other factors influencing the consumption of menstrual products that are further accounted for in this study.

3.1.2 Awareness about the sustainable menstrual products available in the market

In our survey investigating sustainable menstrual products, we queried participants with the following question: "Are you aware about the sustainable menstrual products available in the market?" Respondents answered with a simple "Yes" or "No." The resulting data, visualised in a pie chart, reveals a promising trend.

Awareness of sustainable menstrual products



Source: Primary data

Fig 3.4

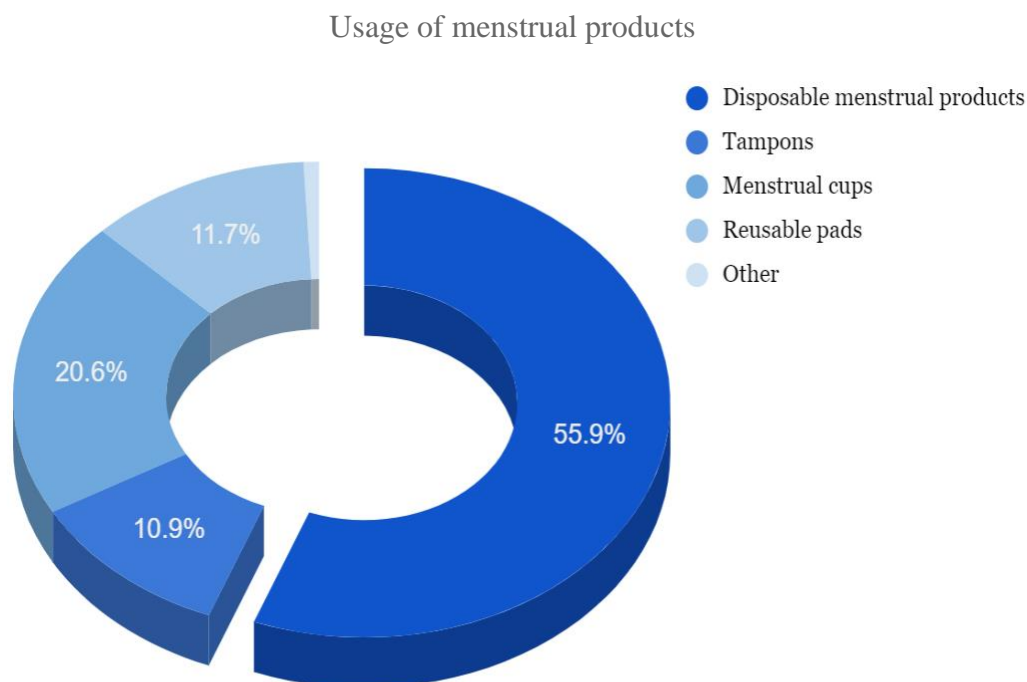
A significant majority of respondents (167 out of 184) indicated awareness of sustainable menstrual products available in the market. This suggests a growing familiarity with these options within the target population.

A small minority (17 respondents) reported no awareness of sustainable menstrual products. This indicates positive progress in menstrual health education and awareness campaigns.

This high level of awareness presents valuable opportunities for research on sustainable menstrual products.

- It suggests a receptive audience for educational initiatives. Research efforts can delve deeper into crafting targeted educational materials and strategies to bridge potential knowledge gaps regarding specific product types, their benefits, and proper usage.
- While awareness is high, there might still be a gap between awareness and adoption. Identifying these barriers is crucial for developing targeted solutions that can promote widespread adoption of sustainable menstrual products.
- The high awareness opens doors for exploring product innovation and development. By understanding user needs and challenges, research can contribute to the design and development of more appealing and user-friendly sustainable menstrual products, ultimately promoting menstrual health equity.

3.1.3 Usage of different types of menstrual products



Source: Primary data

Fig 3.5

The analysis of menstrual product usage data, in response to the question "What type of menstrual products do you typically use?" reveals a significant disparity between the consumption of sustainable and non-sustainable options.

Disposable Menstrual Products: This category comprises the largest share of responses, accounting for 55.9 percent of participants. These products typically include single-use pads or liners, which are discarded after each use. The high prevalence of disposable products reflects their widespread availability, convenience, and familiarity among menstruators.

Menstrual Cups: Equally popular as tampons at 20.6 percent, menstrual cups represent a growing trend towards sustainable menstrual practices. These silicone cups are inserted into the vagina to collect menstrual fluid and can be emptied, cleaned, and reused for years, offering a cost-effective and eco-friendly alternative to traditional products.

Reusable Pads: While less common than disposable options, reusable pads still garner a notable 11.7percent of responses. Unlike their disposable counterparts, reusable pads are washable and can be used multiple times, offering a more sustainable alternative to traditional menstrual products.

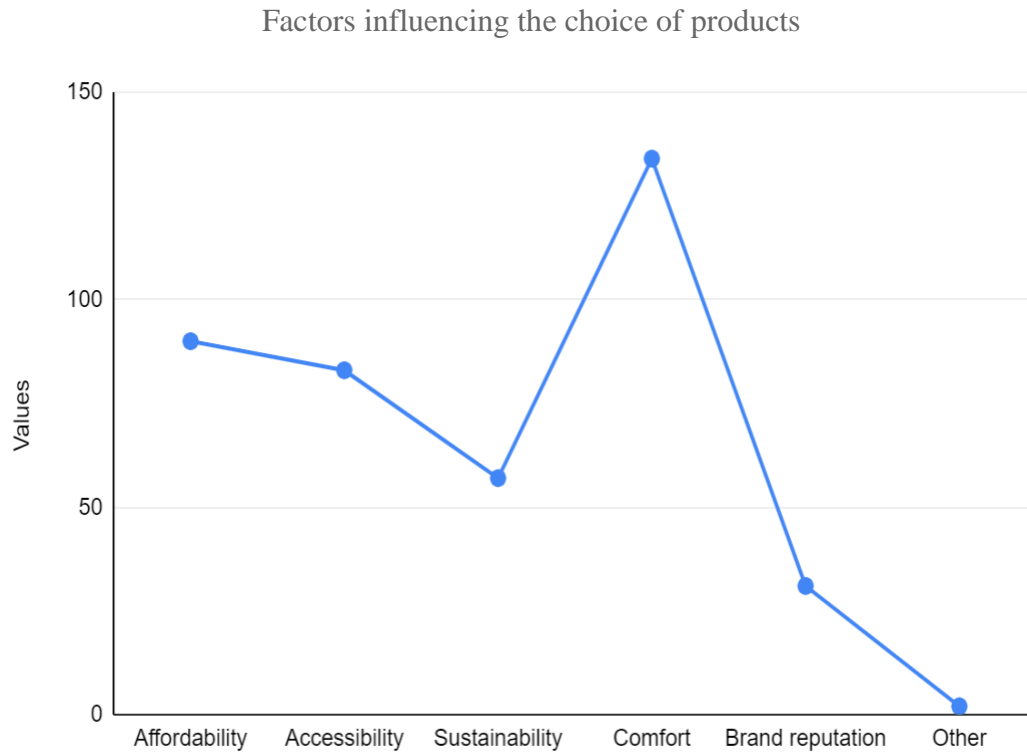
Tampons: Tampons represent a significant portion of responses, accounting for 10.9percent of participants. Like disposable pads, tampons are single-use items that are often preferred for their convenience and ease of use, especially for those with active lifestyles.

Other: A small percentage of participants (1percent) indicated "Other" as their choice of menstrual products, suggesting the existence of alternative options not covered in the predefined categories. While the specific nature of these alternatives is not detailed in the data, it highlights the diversity of choices and preferences among menstruators.

Non-sustainable products, primarily disposable menstrual items, dominate the landscape, constituting 55.9percent of responses. In contrast, sustainable menstrual products, though less prevalent, exhibit a notable presence in the data. Reusable pads and menstrual cups collectively account for 32.3percent of responses, signalling a growing trend towards eco-friendly alternatives.

3.1.4 Factors influencing the choice of products

Observing the factors influencing the choice of menstrual products based on the provided data, which stems from responses to the question "What factors influence your choice of menstrual products? (Select all that apply)," offers valuable insights into consumer behaviour and preferences.



Source: Primary data

Fig 3.6

When examining the data, affordability emerges as a significant consideration, with nearly half of respondents citing it as a key factor. This underscores the importance of competitive pricing strategies for manufacturers of menstrual products, as cost plays a pivotal role in shaping consumer decisions. Accessibility also ranks high among respondents, with approximately 45percent prioritising easy access to menstrual products. Ensuring widespread availability through diverse distribution channels becomes crucial for brands to meet the demands of consumers across various demographics and geographical locations.

Comfort, unsurprisingly, emerges as a primary consideration, with over 72 percent of respondents prioritising it. This highlights the critical importance of designing products that offer superior comfort to enhance the user experience. Regardless of the type of menstrual product, be it disposable pads, tampons, reusable pads, or menstrual cups, comfort remains a key factor driving consumer satisfaction and brand loyalty.

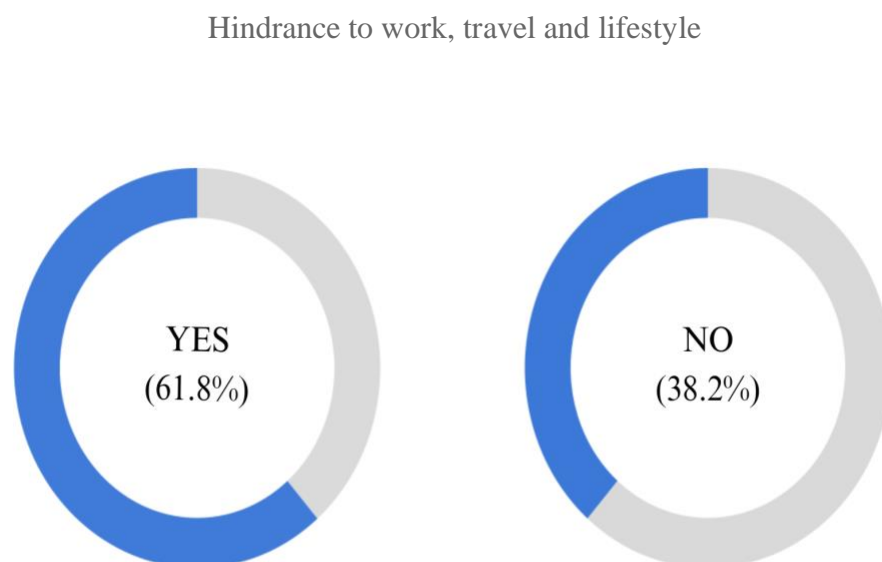
Sustainability also garners attention among consumers, with approximately 31 percent of respondents considering it when selecting menstrual products. This indicates a growing awareness and interest in eco-friendly options among consumers, reflecting a

broader societal shift towards environmentally conscious purchasing behaviours. Brands can respond to this trend by incorporating sustainable practices into their manufacturing processes and highlighting the environmental benefits of their products in marketing campaigns.

Despite the lower percentage, brand reputation still plays a role in influencing consumer choices, with around 17 percent of respondents considering it. Building trust and credibility in the market becomes crucial for brands to compete effectively and retain consumer loyalty. By delivering consistent quality and reliability, brands can establish a strong reputation that resonates with consumers seeking trustworthy menstrual products.

Understanding the multifaceted factors shaping consumer decisions regarding menstrual products is essential for manufacturers and retailers alike. By addressing consumer concerns regarding affordability, accessibility, comfort, sustainability, and brand reputation, brands can develop products that meet the diverse needs and preferences of menstruators while fostering trust and loyalty in the market.

3.1.4 Does Menstrual Product Consumption Hinder Work, Travel, or Lifestyle?



Source: Primary data

Fig 3.7

The findings reveal that a majority, 61.8 percent, of respondents perceive menstrual product consumption as hindering work, travel, or lifestyle. This suggests that for a

significant portion of individuals, the use of menstrual products poses challenges or obstacles in their daily activities. These hindrances could include discomfort, inconvenience, or logistical issues associated with managing menstrual hygiene while balancing work commitments, travel plans, or maintaining their preferred lifestyle.

Conversely, 38.2 percent of respondents reported that menstrual product consumption does not hinder their work, travel, or lifestyle. While this minority viewpoint indicates that some individuals may have found ways to effectively manage their menstrual hygiene without it significantly impacting their daily routines, it's essential to acknowledge that the majority still perceive some level of hindrance.

These results highlight the importance of addressing the needs and challenges related to menstrual hygiene management to ensure that individuals can participate fully in work, travel, and lifestyle activities without undue disruption. Further research and initiatives focusing on improving access to comfortable, convenient, and sustainable menstrual products could help alleviate the hindrances reported by many individuals.

3.2 Affordability

The financial burden associated with menstrual products can significantly influence a woman's choice between sustainable and non-sustainable options. In this section of our analysis, we explore the critical element of affordability in the context of Kerala, India.

Our first step is to understand the current spending patterns. By analysing responses to the question "How much do you typically spend on menstrual products per month?", we can establish a baseline for the financial realities of menstrual hygiene management in Kerala. This will reveal the average monthly cost women incur and potentially highlight disparities based on factors like income level and product type.

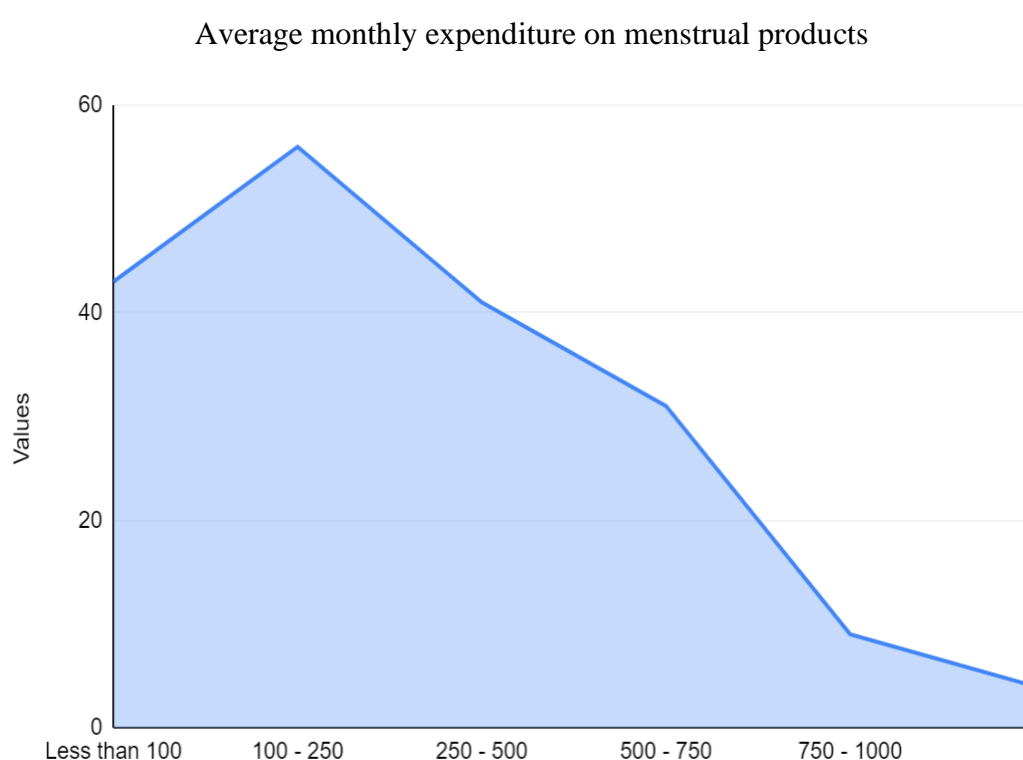
Next, we shift our focus to reusables. For women who might consider switching to sustainable options like menstrual cups or period panties, the upfront cost can be a barrier. By exploring the question "How much would you be willing to spend on a reusable menstrual product?", we can gauge the perceived value of reusability compared to the recurring cost of disposable products. This data will inform strategies for promoting reusables, potentially highlighting the need for educational campaigns that emphasise long-term cost savings.

Finally, we explore price sensitivity as a potential driver of change. The question "Would you be more likely to switch to a sustainable option if it was offered at a discounted price or subsidised by the government?" sheds light on the impact of financial incentives on product selection. Understanding how price reductions or subsidies might influence a switch to sustainable options will be crucial for

policymakers and NGOs in designing interventions that promote accessibility and affordability.

By analysing these factors – current spending patterns, willingness to pay for reusables, and price sensitivity – we aim to paint a comprehensive picture of the affordability landscape surrounding menstrual products in Kerala. This knowledge will be invaluable for stakeholders working towards a future where sustainable menstrual hygiene management is accessible and affordable for all women.

3.2.1 Average monthly expenditure on menstrual hygiene products



Source: Primary data

Fig 3.8

This data reveals interesting insights into how menstruators allocate their budget for menstrual hygiene products. The largest portion over 30.4 percent spends between Rs. 100-250. This suggests a preference for affordability, possibly due to factors like income limitations or a desire to stretch their budget. Nearly a quarter 23.4 percent spend less than Rs. 100. This segment prioritises extreme affordability, potentially due to financial constraints. A significant group of 22.3 percent spends between Rs. 250-500. This might indicate a balance between cost and product quality or features. Fewer menstruators spend in the Rs. 500-750 (16.8percent) and Rs. 750-1000 (4.9percent) ranges. This suggests a potential decline in willingness to spend as the cost increases.

Only a small percentage (2.2 percent) spends above Rs. 1000. This could be due to a preference for premium menstrual products or specific medical needs.

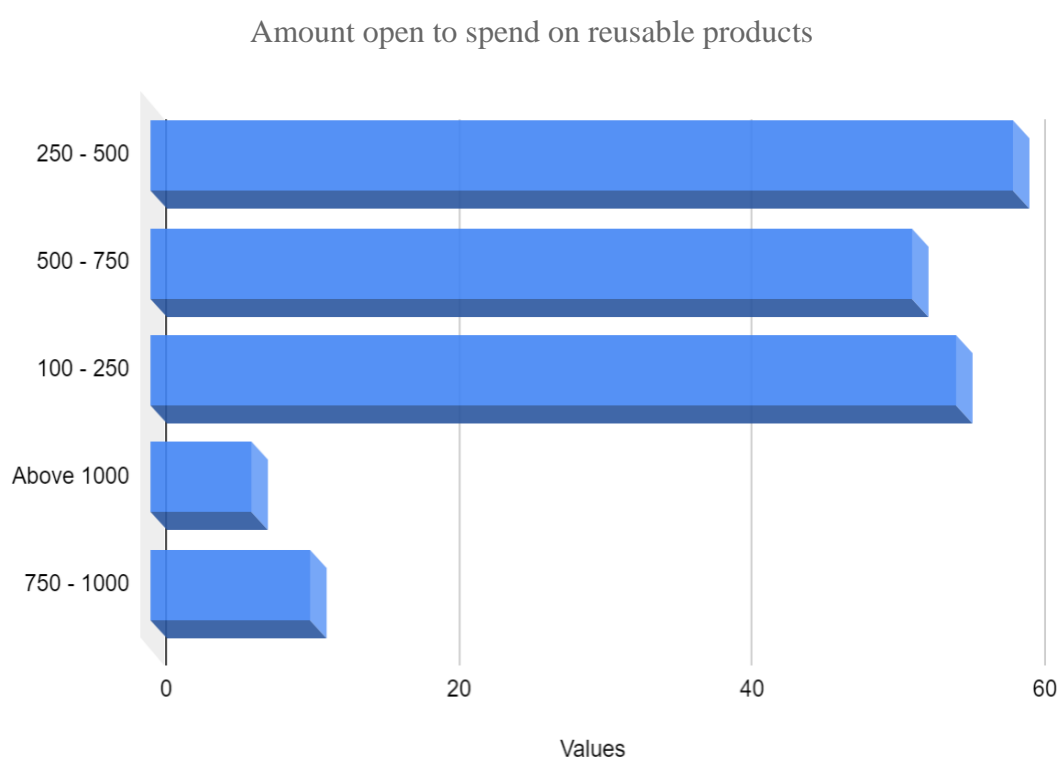
The data confirms a clear trend: a significant portion of menstruators prioritise affordability when purchasing menstrual hygiene products. This highlights the potential impact of cost on menstrual health management. It's important to consider:

Period Poverty: The significant number spending less than Rs. 100 suggests that period poverty, the lack of access to affordable menstrual products, might be a concern.

Accessibility and Awareness: Ensuring access to affordable and high-quality menstrual products is crucial for menstrual health. Additionally, raising awareness about cost-effective options like reusable menstrual cups could be beneficial.

Furthermore, geographic location and income distribution could influence spending patterns.

3.2.2 Amount people are willing to spend on “reusable menstrual products”



Source: Primary data

Fig 3.9

Our analysis of survey data from 184 women in Kerala regarding their willingness to invest in reusable menstrual products reveals a clear correlation between price and

adoption. While affordability remains a significant concern, a notable interest in reusable options exists within this population.

Over 62percent of respondents (32.1percent + 29.9percent) expressed comfort with spending between Rs. 100 and Rs. 500 on reusable menstrual products. This suggests a potential market segment prioritising a balance between affordability and long-term benefits. Further research into this segment's specific needs and preferences could be valuable in informing product development and marketing strategies.

For a smaller portion of the population (28.3percent), a higher price point (Rs. 500-750) falls within their acceptable range. This highlights a potential market for premium reusable products catering to specific needs or preferences. However, the data also reveals a clear preference for lower priced options, with nearly 60 percent gravitating towards the Rs. 250 or less range.

These findings underscore the importance of offering a variety of reusable menstrual products at accessible price points to maximise adoption in Kerala. Developing a pricing strategy that caters to a diverse range of budgets could be a successful approach. Additionally, considering the potential influence of geographic location and income distribution on price sensitivity could further inform targeted interventions.

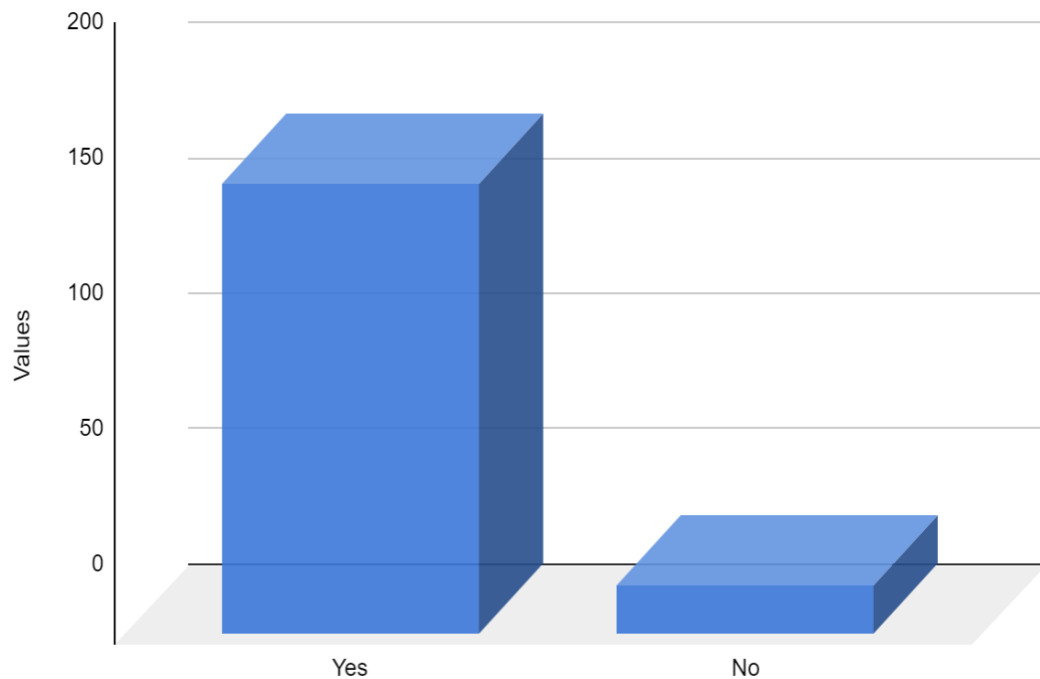
In conclusion, this data suggests that affordability is a major factor influencing the adoption of reusable menstrual products in Kerala. By offering a spectrum of price points, conducting further research into consumer preferences, and potentially employing educational campaigns to highlight the long-term cost savings and environmental benefits of reusables, we can work towards creating a future where sustainable menstrual hygiene management is a viable option for all women in Kerala.

3.2.3 Likeliness to switch to sustainable alternatives being offered at a discounted price or subsidised by the government

A critical factor influencing the adoption of sustainable menstrual products in Kerala is cost. Our survey, conducted among 184 women, reveals a strong correlation between affordability and willingness to switch.

A critical factor influencing the adoption of sustainable menstrual products in Kerala is cost. Our survey, conducted among 184 women, reveals a strong correlation between affordability and willingness to switch.

Likelihood to switch to subsidised sustainable menstrual products



Source: Primary data

Fig 3.10

Over 90 percent of respondents (166) expressed a desire to utilise sustainable menstrual products if government subsidies were offered. This overwhelming interest underscores the significant financial barrier that currently exists. By subsidising these products, we can potentially empower a large segment of the population to make environmentally conscious choices without compromising their budgetary limitations.

However, the data also highlights a knowledge gap. While cost emerges as a primary concern, a small percentage (9.8 percent) remains hesitant for undisclosed reasons. Further research is necessary to delve deeper into these reservations. Understanding these concerns is crucial for developing targeted educational campaigns that address misconceptions and promote informed choices about sustainable menstrual products.

In conclusion, the survey results from Kerala offer a compelling argument for prioritising affordability in the realm of sustainable menstrual hygiene management. The overwhelming interest in subsidised options highlights the potential of cost-reduction strategies to drive positive change. By implementing targeted interventions, including subsidies and educational campaigns, we can work towards a future where sustainable menstrual products are a viable and accessible option for all women in Kerala.

3.3 Accessibility

Access to safe, affordable and hygienic menstrual products remain a significant challenge for many. This lack of accessibility can have a profound impact on the health, education and overall well-being of women and adolescent girls.

Understanding accessibility of menstrual products in Kerala requires a two-pronged approach. Firstly, we need to examine the availability of sustainable and non-sustainable options. It's likely that disposable, non-sustainable sanitary napkins are currently more prevalent in the market. This dominance could be due to various factors, such as brand recognition, lower initial cost compared to some sustainable options, and lack of awareness about alternatives.

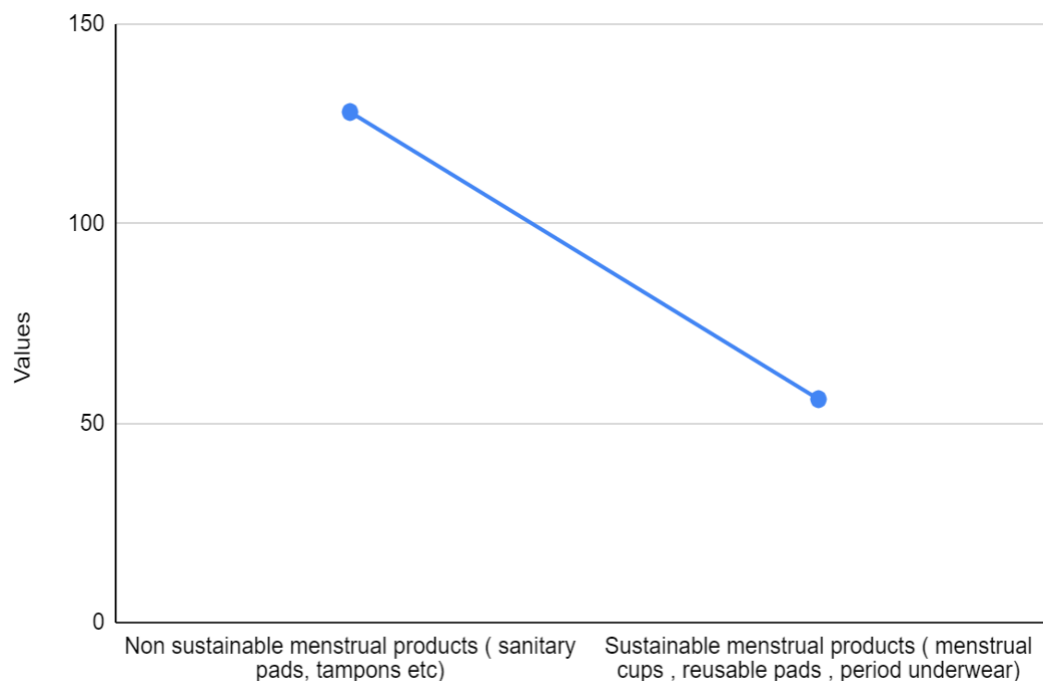
Secondly, it's crucial to identify the barriers that prevent individuals from accessing safe and hygienic menstrual products. Here, insights from menstruators themselves would be invaluable. Common barriers might include affordability, social stigma surrounding menstruation, lack of proper disposal facilities, and limited access to information about menstrual hygiene management. By understanding these obstacles, we can develop targeted strategies to improve accessibility.

Finally, the issue of used menstrual product disposal cannot be ignored. The non-biodegradable nature of sanitary napkins creates a significant environmental concern and can be a major constraint for those with limited access to proper disposal facilities. This highlights the need to promote sustainable menstrual products, such as menstrual cups and washable cloth pads, which can be reused and don't generate waste.

In conclusion, achieving menstrual equity in Kerala requires a multi-faceted approach. We need to increase the availability of sustainable menstrual products, address the barriers that prevent access to safe and hygienic options, and promote proper disposal practices. By focusing on these areas and incorporating the voices of menstruators, Kerala can ensure that everyone has the resources they need to manage their periods with dignity and comfort.

3.3.1 Accessibility of Sustainable versus Non-sustainable menstrual products.

Accessibility of sustainable and non-sustainable menstrual products



Source: Primary data

Fig 3.11

The survey results indicate a significant disparity in the accessibility of menstrual products in Kerala. Disposable pads and tampons, which are non-sustainable options, are perceived as much more available and accessible by menstruators in the state. 60.9 percent of respondents believe disposable pads and tampons are more accessible. 30.4 percent believe sustainable menstrual products like menstrual cups, reusable pads, and period underwear are more accessible. This suggests a clear need to improve the accessibility of sustainable menstrual products in Kerala. Here are some possible reasons for the current situation:

Price: Disposable pads and tampons may be cheaper than sustainable alternatives, making them more affordable for a wider range of people.

Awareness: There might be a lack of awareness about sustainable menstrual products and their benefits.

Availability: Sustainable menstrual products might not be as widely stocked in stores compared to disposable options.

The survey highlights the importance of promoting and increasing access to sustainable menstrual products in Kerala. Here's how this can be achieved:

Raising awareness: Educational campaigns can inform the public about sustainable menstrual products, including their benefits for health, the environment, and potentially, long-term cost savings.

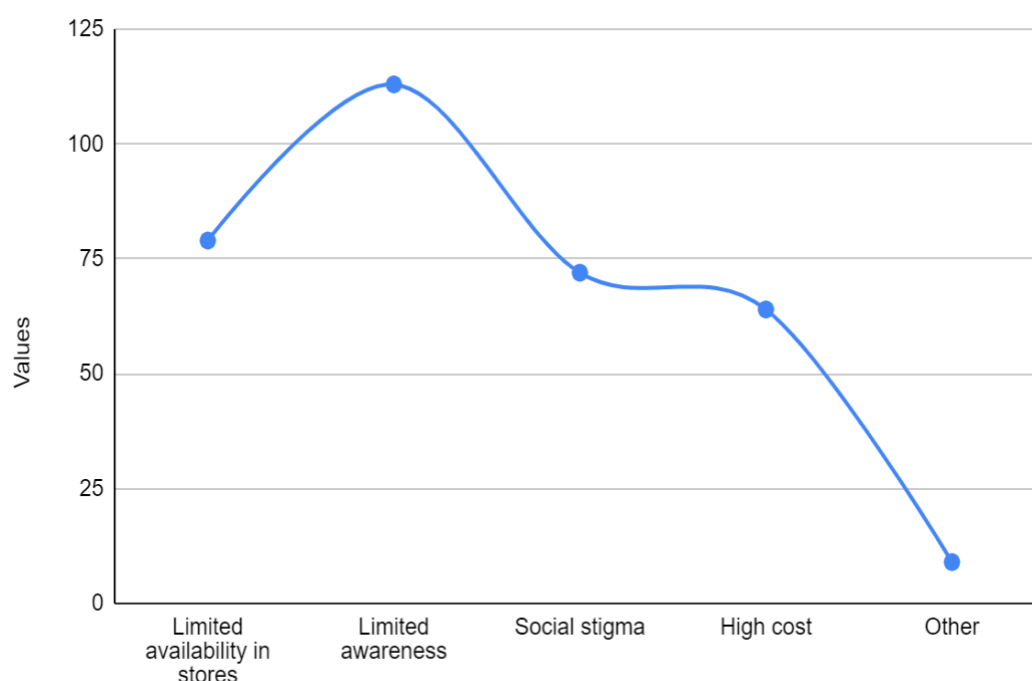
Government initiatives: The government could consider initiatives to reduce the cost of sustainable menstrual products, such as tax breaks or subsidies.

Improved distribution: Increasing the availability of sustainable menstrual products in stores and pharmacies across Kerala would make them a more realistic choice for menstruators.

By making sustainable menstrual products more accessible, Kerala can promote menstrual health management and environmental sustainability.

3.3.2 Barriers in accessing “sustainable menstrual products”

Barriers in accessing sustainable menstrual products



Source: Primary data

Fig 3.12

The survey conducted in Kerala reveals several significant barriers hindering access to and adoption of sustainable menstrual products:

Limited Availability (42.9 percent): This is the most frequently reported barrier. Sustainable options like menstrual cups and period underwear might not be stocked in all stores, particularly in rural areas.

Limited Awareness (61.4 percent): A significant portion of the population may not be aware of sustainable menstrual products or their benefits. This lack of knowledge can prevent them from considering these alternatives.

Social Stigma (39.1 percent): Menstrual taboos can discourage open conversations about periods, making it difficult for women to learn about and feel comfortable using sustainable menstrual products.

High Cost (34.8 percent): The initial cost of menstrual cups and reusable pads might be higher compared to disposable products, creating a financial barrier for some.

Difficulty and Discomfort: Some may find insertion or use of menstrual cups challenging, requiring education and practice.

Uneasiness with Frequent Changing: Concerns about changing reusable products frequently during menstruation could be a deterrent.

Medical Issues: Certain medical conditions might make sustainable options unsuitable, highlighting the need for diverse product options and consultations with healthcare professionals.

The survey underscores the need for a multi-pronged approach to increase access and adoption of sustainable menstrual products in Kerala:

Increase Availability: Collaboration with retailers and pharmacies to stock sustainable menstrual products across the state, particularly in rural areas.

Awareness Campaigns: Educational initiatives to inform the public about the benefits of sustainable menstrual products, addressing misconceptions and promoting open discussions about menstruation.

Price Reduction: Exploring options to reduce the cost of sustainable menstrual products, such as government subsidies or partnerships with manufacturers.

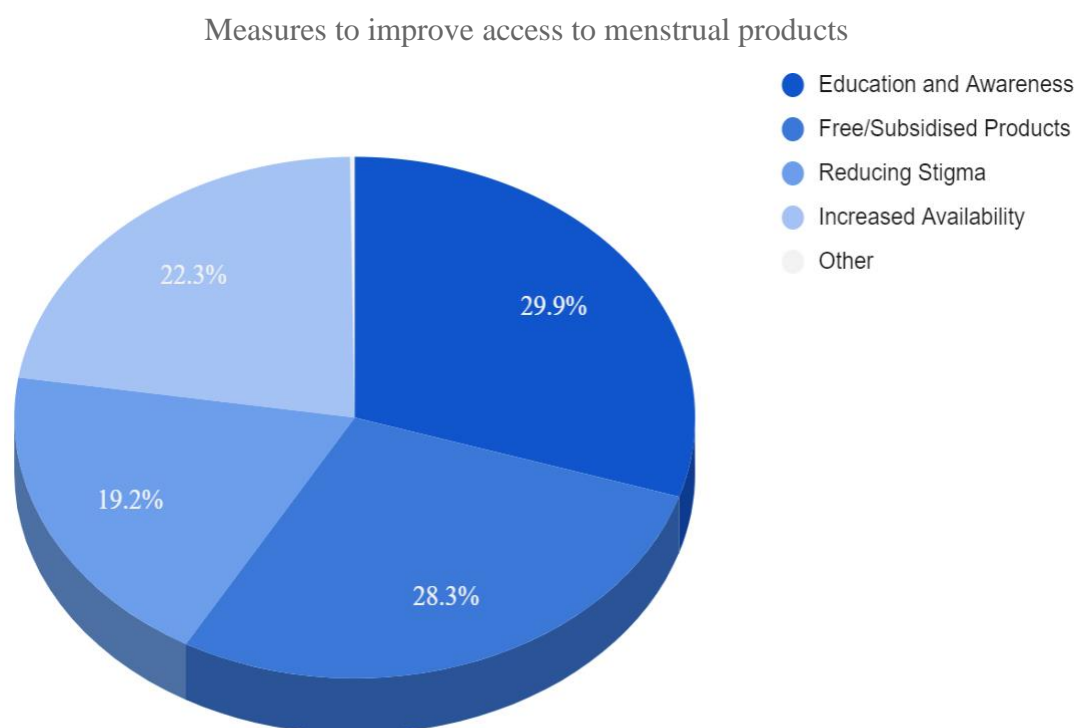
Destigmatization: Campaigns promoting menstrual health and hygiene can help normalise menstruation and remove the stigma associated with sustainable products.

User Education: Providing clear instructions and guidance on using sustainable menstrual products effectively and addressing concerns about comfort and frequency of changing.

By addressing these barriers, Kerala can create an environment where sustainable menstrual products become a viable and accessible option for all menstruators. This will contribute to improved menstrual health management, environmental sustainability, and potentially, long-term cost savings for individuals.

3.3.3 Measures to improve access to sustainable menstrual products to everyone.

The survey results from Kerala highlight several key measures to improve access to menstrual products for everyone



Source: Primary data

Fig 3.13

Top Priorities:

Education and Awareness (29.9 percent): This overwhelming response emphasises the importance of educational campaigns about menstrual health and hygiene. This can address misconceptions, promote understanding of different menstrual products, and encourage open discussions.

Free/Subsidised Products (28.3 percent): Providing free or subsidised menstrual products in schools and community centres directly addresses affordability concerns and ensures access for those who might struggle financially.

Reducing Stigma (19.2 percent): Stigma surrounding menstruation can be a significant barrier. Initiatives to normalise menstruation and encourage open conversations can help break down these taboos.

Increased Availability (22.3 percent): Ensuring menstrual products are readily available in public spaces like restrooms, workplaces, and public transportation is crucial for managing periods with dignity and avoiding disruptions.

Moreover, an additional suggestion was given as follows:

Manufacturer Representation: The suggestion to have manufacturer representatives ensure product availability in physical stores is a valuable addition. This can address stock issues and provide opportunities for product education at the point of sale.

The survey provides clear guidance for improving access to menstrual products in Kerala. Here are some key takeaways:

Prioritise education and awareness campaigns. This is the foundation for breaking down stigma and promoting informed choices about menstrual hygiene.

Implement programs for free or subsidised products in schools and community centres. This directly addresses affordability concerns and ensures access for those in need.

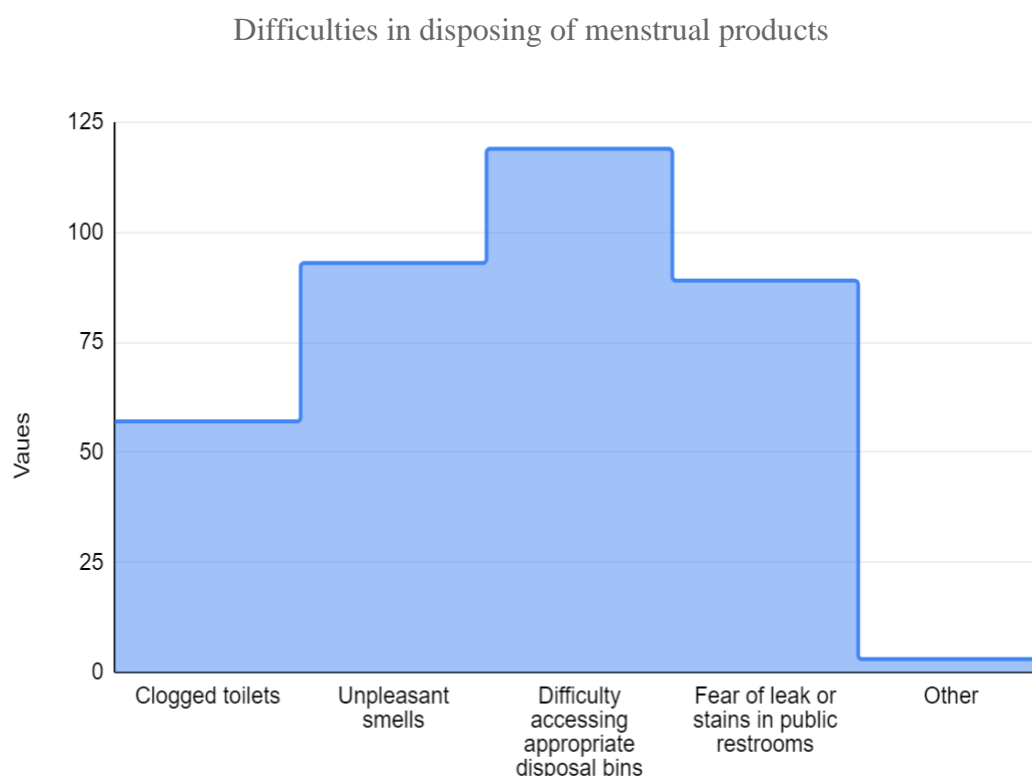
Destigmatize menstruation through public awareness campaigns and open discussions. Normalise menstruation and promote a healthy menstrual culture.

Increase availability of menstrual products in public spaces. Ensure easy access in restrooms, workplaces, and public transportation.

Encourage collaboration with manufacturers to improve product availability in physical stores. This can address stock issues and provide opportunities for in-store education.

By taking these steps, Kerala can create a system where menstrual products are readily available, affordable, and used with confidence by everyone who menstruates. This will contribute to improved menstrual health, reduced anxiety and stress during periods, and potentially, increased school attendance and workplace productivity.

3.3.4 Difficulties in disposing of menstrual products



Source: Primary data

Fig 3.14

The survey conducted in Kerala reveals several concerning issues related to menstrual product disposal:

Limited Disposal Bins (64.7 percent): The lack of appropriate disposal bins is the most significant challenge. This hinders proper hygiene and can lead to unhygienic disposal practices.

Unpleasant Odour (50.5 percent): The unpleasant smell associated with used menstrual products can be a deterrent to proper disposal, especially in public spaces.

Clogged Toilets (31 percent): Improper disposal of menstrual products in toilets can lead to blockages and sanitation issues.

Fear of Leaks/Stains (48.4 percent): Concerns about leaks or stains while disposing in public restrooms can lead to anxiety and discourage proper disposal.

Health Issues (1 percent): Inefficient disposal methods, like throwing products in the open or burning them, can contribute to allergies, rashes, and irritation.

The survey highlights the need for a comprehensive approach to menstrual product disposal in Kerala:

Increase Availability of Disposal Bins: Install adequate disposal bins specifically designed for menstrual products in public restrooms, schools, workplaces, and community centres. These bins should be emptied regularly and maintained hygienically.

Odour-Control Measures: Explore options like deodorising bins or providing disposal bags with odour-neutralising properties to address concerns about unpleasant smells.

Public Awareness Campaigns: Educate the public about proper disposal methods and the importance of using designated bins to avoid blockages and maintain hygiene.

Improved Toilet Infrastructure: Ensure toilets in public spaces can handle the disposal of menstrual products without clogging. This might involve considering upgrades to waste management systems.

Promoting Sustainable Products: Encourage the use of reusable menstrual products, which can reduce overall waste generation compared to disposable options.

By addressing these challenges, Kerala can create a system that promotes proper menstrual hygiene disposal practices, protects public health, and contributes to a cleaner environment.

CHAPTER 4

FINDINGS, RECOMMENDATIONS AND CONCLUSION

FINDINGS

This research project investigates sustainable menstrual products through a Triple Lens Framework, analysing their impact on economic, social, and environmental aspects.

Survey Demographics:

- While the survey primarily targeted women aged 18-45, a notable trend emerged wherein the majority of respondents (56%) fell within the younger age bracket of 18-25, indicating a substantial representation of the younger demographic. Furthermore, within this age group, there was a significant presence of students, suggesting a keen interest from this cohort in issues related to menstrual health and sustainability.
- The survey highlighted a diverse income distribution among participants, with a minority earning above 50,000, significant portions falling within the 30,000 to 50,000 and 10,000 to 30,000 ranges, and the smallest segment earnings below \$10,000.

Awareness and Preference:

- Despite variations in income levels, a positive finding from the survey was the widespread awareness among participants regarding sustainable menstrual product options available in the market. This indicates a growing consciousness and interest in eco-friendly alternatives to conventional menstrual products.
- Notably, income played a significant role in shaping product preferences, with higher-income individuals expressing a greater willingness to invest in sustainable options. This underscores the importance of affordability as a key determinant of consumer behaviour and highlights the need for targeted interventions to address economic barriers to adoption among lower-income groups.

Consumption Patterns:

- Despite awareness of sustainable alternatives, disposable menstrual pads remained the dominant choice, highlighting affordability as a key decision factor, followed by comfort and accessibility.

- The high consumption of disposable products was identified as a hindrance to daily activities and overall lifestyle for some users. Understanding the factors influencing consumption patterns is essential for designing interventions that incentivize sustainable choices while addressing the practical needs and preferences of users.

Affordability:

- The research findings unveiled a significant insight into the spending habits of respondents concerning menstrual products, indicating that the majority typically allocate between Rs 100-250 per menstrual cycle. This expenditure range underscores the economic considerations that influence purchasing decisions among menstruators, reflecting a balance between affordability and perceived value in product selection
- Interestingly, a significant portion expressed a willingness to switch to reusable/sustainable products priced between Rs 250-500, particularly if offered at a discounted rate or subsidized by the government. This suggests that while affordability remains a key consideration for consumers, there is a willingness to invest in sustainable alternatives given the right incentives and pricing strategies.

Accessibility:

- Accessibility emerged as a significant advantage for disposable pads, as they benefit from widespread availability across diverse markets, ranging from urban centres to remote rural areas.
- Conversely, sustainable options faced challenges in accessibility due to factors like:
 - Lack of awareness among consumers.
 - Social stigma surrounding menstruation.
 - Higher initial cost compared to disposable products.
 - Limited availability in traditional stores, often requiring online purchases.

Disposal Challenges:

- Improper disposal of menstrual products, primarily disposable pads, was a concern raised by respondents. This resulted in clogged toilets, unpleasant smells, and, in some cases, rashes, allergies, and irritation (among a smaller population) due to unsafe disposal methods.
- The findings underscore the need for improved access to appropriate disposal bins and education on proper disposal practices. Implementing infrastructure improvements, such as installing dedicated disposal bins in public restrooms and conducting awareness campaigns on menstrual waste management, can mitigate environmental pollution and health risks associated with improper disposal practices.

RECOMMENDATIONS

- Education and Awareness Campaigns: Launch comprehensive education and awareness campaigns targeting individuals across various demographics to inform them about sustainable menstrual product options available in the market. Addressing misconceptions and reducing the social stigma surrounding menstruation can promote greater acceptance and uptake of these products.
- Affordability Initiatives: Implement affordability initiatives such as subsidies or discounted rates for reusable/sustainable menstrual products, particularly targeting individuals with lower incomes. This can make these products more accessible and incentivize users to make the switch from disposable options.
- Product Innovation and Development: Encourage research and development efforts to innovate and improve sustainable menstrual products, focusing on factors such as affordability, comfort, and ease of use. Collaborations between manufacturers, researchers, and policymakers can facilitate the development of cost-effective and environmentally friendly options.
- Expansion of Distribution Channels: Expand distribution channels for sustainable menstrual products to enhance accessibility, including traditional brick-and-mortar stores and online platforms. Partnerships with retailers and pharmacies can help increase the availability of these products in local markets.
- Infrastructure Improvement: Invest in infrastructure improvements to address disposal challenges associated with menstrual products. This includes installing appropriate disposal bins in public restrooms and implementing educational programs to promote proper disposal practices, reducing environmental pollution and health risks.
- Government Policies and Regulations: Advocate for the implementation of supportive government policies and regulations that promote the use of sustainable menstrual products and address related environmental and health concerns. This may include tax incentives for manufacturers of eco-friendly products and regulations ensuring safe disposal practices.
- Collaborative Efforts: Foster collaborative efforts between government agencies, non-profit organizations, private sector stakeholders, and community groups to tackle menstrual health and hygiene issues holistically. By working together, these stakeholders can leverage their resources and expertise to drive positive change and improve access to sustainable menstrual products for all individuals.

- Inclusion in Healthcare Services: Integrate sustainable menstrual products into healthcare services, including reproductive health clinics, schools, and community centres. Providing access to these products through healthcare facilities ensures reliability, quality assurance, and opportunities for professional guidance on their usage and benefits.
- Corporate Social Responsibility (CSR) Initiatives: Encourage corporations to incorporate menstrual health and sustainability into their CSR initiatives. This can involve supporting grassroots organizations, funding research projects, and implementing workplace programs to provide employees with access to sustainable menstrual products and education resources.
- Research Funding: Allocate funding for further research into sustainable menstrual products, including their efficacy, environmental impact, and long-term health effects. Investing in research can generate evidence-based insights to inform policy decisions, product development, and public awareness campaigns.
- Inclusive Product Design: Prioritize inclusive product design that considers the diverse needs of menstruators, including those with disabilities, transgender individuals, and people from marginalized communities. Ensuring that sustainable menstrual products are accessible and accommodating for all users promotes inclusivity and equity in menstrual health care.
- Long-Term Monitoring and Evaluation: Establish mechanisms for long-term monitoring and evaluation of interventions aimed at promoting sustainable menstrual products. Regular assessments of the effectiveness and impact of these initiatives can inform adaptive strategies and ensure continuous improvement in addressing menstrual health and sustainability challenges.

CONCLUSION

This study employed a triple lens analysis to compare sustainable and non-sustainable menstrual product use in Kerala, focusing on consumption patterns, affordability, and accessibility. Despite awareness of sustainable alternatives like menstrual cups and reusable pads, a significant portion of the study population continues to rely on disposable menstrual pads. This preference hinges on affordability as a primary factor, followed by considerations of comfort and ease of access. Notably, the research suggests that current menstrual products negatively impact work and educational experiences. Disposable pads can lead to discomfort, leaks, and a need to change frequently, potentially causing absenteeism and hindering participation.

The study revealed an interesting dynamic regarding cost. While participants typically spend between ₹100-250 on menstrual needs, they expressed a willingness to invest a higher amount (₹250-500) for sustainable options. This highlights the potential for long-term cost savings and a shift in mindset towards menstrual products as an investment. Furthermore, the study found a surprising openness to switching to sustainable alternatives if offered at a discounted rate. This suggests a growing environmental consciousness among menstruators, with a willingness to embrace eco-friendly solutions.

However, significant barriers hinder the widespread adoption of sustainable menstrual products. Accessibility remains a major challenge, with disposable options dominating the current market. Factors like high upfront costs, lack of education and awareness, persistent social stigma surrounding menstruation, and limited availability of sustainable products all contribute to this disparity. Additionally, the study identified difficulties in disposal of used menstrual products, leading to clogged toilets, unpleasant odors, and a lack of appropriate disposal bins. Unsanitary disposal methods expose users to health risks like skin rashes, allergies, and irritations. These findings underscore the negative environmental impact of disposable products and the social implications of period poverty, where affordability restricts access to adequate menstrual hygiene management.

In conclusion, the study strongly recommends promoting sustainable menstrual alternatives due to their potential for economic savings and environmental benefits. To bridge the gap in accessibility, initiatives should focus on cost reduction strategies, educational programs to dispel myths and normalize menstruation, and wider distribution channels for sustainable products. Addressing the issue of period poverty through government subsidies or community-based programs can ensure menstrual equity and empower women and girls to manage their periods with dignity and good health.

APPENDIX

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QUESTIONNAIRE

What is your age?

18-25

25-30

30-35

35-40

40-45

2) Could you provide your monthly income?

Above 50,000

50,000-30,000

30,000-10,000

Below 10,000

Student

3) Are you aware about the sustainable menstrual products available in the market?

Yes

No

4) If yes, please select the type of product you use.

Menstrual cups

Reusable pads

Others (please specify)

5) What type of menstrual products do you typically use? (Select all that apply)

Disposable pads

Tampons

Menstrual cups

Reusable pads

Other (please specify)

6) What factors influence your choice of menstrual products? (Select all that apply)

Affordability

Accessibility
Sustainability
Comfort
Brand Reputation
Other (please specify)

7) How much do you typically spend on menstrual products “per month”?

Less than 100
100-250
250-500
500-750
750-1000
Above 1000

8) How much would you be willing to spend on a “REUSABLE MENSTRUAL PRODUCT”? (e.g.: menstrual cup, reusable pads etc.)

100-250
250-500
500-750
750-1000
Above 1000

9) Which do you think is more accessible in the markets?

Non sustainable menstrual products (sanitary pads, tampons etc.)
Sustainable menstrual products (menstrual cups, reusable pads, period underwear)

10) Are there any barriers to accessing “SUSTAINABLE MENSTRUAL PRODUCTS”? (Select all that apply)

Limited availability in stores
Limited awareness
Social stigma
High cost
Other (please specify)

11) What do you think can be done to improve access to menstrual products for everyone?

Provide free or subsidised products in schools and community centres
Increase education and awareness about menstrual health

Reduce stigma and taboo surrounding menstruation
Make menstrual products more readily available in public spaces
Other (please specify)

12) Would be more likely to switch to a “SUSTAINABLE OPTION” if it was offered at a discounted price or subsidised by the government?

Yes
No

13) Do you think the consumption of your current menstrual product is a hindrance to work, travel or lifestyle?

Yes
No

14) Have you experienced any of the following difficulties with disposing of menstrual products?

Clogged toilets
Unpleasant smells
Difficulty accessing appropriate disposal bins
Fear of leaks or stains in public restrooms
Other (please specify)