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Beyond the Pink Tax: Awareness, Perceived Unfairness and Policy Support for Gender-Based Pricing among Indian Consumers

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Abstract

Background: The "pink tax", a higher price for goods and services marketed to women than for similar ones marketed to men, has drawn attention worldwide, yet consumer-side evidence from India is limited.

Objectives: This study examines consumers' awareness of gender-based price gaps, perceived unfairness, behavioural response and support for transparency and regulation, and tests three hypotheses linking these constructs.

Methodology: A descriptive, analytical, cross-sectional survey was conducted online with 96 adults (53 women, 43 men) using a structured five-point Likert questionnaire. Four multi-item scales (Awareness, Perceived Unfairness, Consumer Response and Policy Support) were retained after reliability screening (Cronbach's alpha 0.729 to 0.799). Analysis used non-parametric tests, Spearman correlations, regression and principal component analysis with Holm correction.

Findings: 80.2 per cent of respondents had noticed price differences between men's and women's products, 73 to 78 per cent considered gender-based pricing a marketing-driven burden that reinforces stereotypes, and 76 to 83 per cent supported each policy measure. Perceived unfairness was positively associated with policy support (rho = 0.364, Holm p = 0.002) but not significantly with awareness (rho = 0.161, p = 0.117) or consumer response (rho = 0.188, p = 0.067). Consumer response was the only significant predictor of policy support. After correction, no reliable differences emerged by gender, age, education, occupation or income.

Conclusion: Concern about gender-based pricing is widely shared, and consumers look to firms and government, not their own switching, for remedies. Unit-price transparency, explanation of price gaps and scrutiny of menstrual-product taxes are recommended.

Keywords: Pink tax; gender-based pricing; consumer awareness; perceived fairness; consumer equity; India

1. Introduction

1.1 Background of the study

Gender is routinely used in consumer markets as a basis for product design, branding, advertising and pricing. Where a product serves the same function for everyone, firms often sell separate "men's" and "women's" versions: razors, shaving creams, deodorants, soaps, shampoos, lotions, clothing, accessories, toys and personal-care services. Women's versions are typically presented in pink or pastel packaging and sold through emotional appeals, whereas men's versions are presented as functional, efficient and simple. The "pink tax" refers to the higher price often charged for goods and services targeted at women relative to broadly similar ones targeted at men. It is not a government levy; the word "tax" is metaphorical, because the extra amount is paid repeatedly, is difficult to avoid and is not justified by a corresponding difference in cost, quality or quantity.

For this study, the pink tax is defined as *an extra cost charged on products and services targeted at women, compared with functionally equivalent products and services targeted at men, where the difference in cost, quality or quantity does not justify the price gap*. The concept must be separated from related ideas (Table 1). In particular, the "tampon tax" is an indirect tax (GST, VAT or sales tax) imposed by the state on menstrual products, whereas the pink tax arises from sellers' pricing. A price difference is potentially discriminatory only when products do not differ meaningfully in function, quality, cost and consumer value; where ingredients, size, design or quality differ, the gap may reflect product differentiation. This distinction explains why a comparison of shelf prices alone cannot establish the existence of a pink tax. General overviews are available in reference sources such as the EBSCO Research Starters entry on the pink tax ("Pink tax", 2017).

Table 1. Distinguishing the pink tax from related concepts

Concept	Meaning	Who sets the price	Example
Pink tax	Higher price for women-marketed products or services compared with similar men-marketed ones	Manufacturers and retailers	Women's razor priced above a similar men's razor
Tampon tax	Indirect tax (sales tax, VAT, GST) on menstrual hygiene products	Government	GST of 12% on sanitary napkins until July 2018
Price discrimination	Charging different prices to different customers for the same or similar product	Seller	Different haircut prices for women and men for the same service
Product differentiation	Offering products with different features, design or quality at different prices	Seller	Different fragrance, packaging or formulation of a body wash
Gender pay gap	Difference in average earnings between women and men	Employers and labour markets	Lower average earnings that magnify the burden of higher prices

The issue came to prominence through the New York City Department of Consumer Affairs study *From Cradle to Cane: The Cost of Being a Female Consumer* (2015). It compared 794 products from 91 brands in 24 stores and found that products for women cost 7 per cent more on average than comparable products for men, with the widest gap (13 per cent) in personal-care products. The report fed legislative debate in the United States and strengthened calls for price transparency, consumer education and regulation.

The issue is pertinent to India because the personal-care and fast-moving consumer goods (FMCG) sectors are expanding rapidly and gendered products are sold through supermarkets, pharmacies, brand outlets, neighbourhood shops and e-commerce platforms. Organised and unorganised retail allow prices to be negotiated, bundled or discounted, so the price actually paid can differ from the listed price. Online, coupons, recommendations, dynamic pricing and targeted advertising add a further layer that may produce gender-linked differences invisible on the shelf. Indirect taxation is also a gender issue: sanitary napkins attracted GST at 12 per cent when the tax came into force on 1 July 2017 and were exempted from 27 July 2018 following the 28th GST Council meeting (GST Council, 2018). A shopper facing two shelves labelled "for him" and "for her" has little time, little information and rarely the habit of comparing unit prices, and it is there that hidden price gaps persist. If women routinely pay more for frequently purchased essentials, their purchasing power is reduced, compounding gender gaps in wages and unpaid work.

1.2 Research problem

The pink tax is widely discussed in the media and in consumer-rights debates, but its magnitude, causes and consequences in the Indian market remain unclear. Some studies report that women pay more for comparable products; others find that much of the apparent gap disappears once ingredients, size and function are matched, or that it reflects consumers sorting into different products. The central problem is therefore: *to what extent do gender-based price differences exist in selected consumer categories, and how do product differentiation, marketing practices, consumer awareness and perceived fairness influence consumer responses to the pink tax?*

The research programme does not presume that every price difference between men's and women's products is discriminatory. It has two phases: (i) a consumer survey on awareness, perceived fairness, behavioural response and policy support, and (ii) a matched-product price audit that will compare female- and male-oriented products after accounting for category, brand, size, unit price, features and packaging. This article reports Phase 1, the consumer survey.

1.3 Research gap

Four gaps motivate the study (developed in Section 2.9). First, most influential evidence comes from high-income markets, and systematic, category-specific evidence on gender-based pricing and consumer reactions in Indian retail is still emerging. Second, studies concentrate on a narrow band of personal-care goods, leaving clothing, accessories, health products, services and children's goods under-examined. Third, consumer studies tend to report awareness and attitudes separately, so little is known about how awareness, perceived unfairness, behavioural response and policy support relate to one another, or whether these relationships differ between women and men. Fourth, the interaction of indirect taxation and market pricing in India has received limited empirical attention.

1.4 Research objectives

The wider research programme has seven objectives. Objectives 1 to 3 relate to the matched-product price audit planned for Phase 2; Objectives 4 to 7 are addressed in this article.

1. **To examine the existence and extent of gender-based price differences** across selected product categories, brands, package sizes and retail channels, while analysing the influence of product differentiation, packaging, branding and marketing

2. **To assess consumer awareness and perceptions of the pink tax**, including its perceived fairness and its relationship with purchasing behaviour, willingness to switch products and support for price transparency.

3. **To propose practical recommendations** for consumers, businesses and policy-makers to promote gender-equitable pricing, responsible marketing and greater price transparency.

1.5 Research questions and hypotheses

The research questions are: (RQ1) Do female-oriented products cost more than comparable male-oriented products? (RQ2) Do price differences vary across categories, brands, package sizes and retail channels? (RQ3) Are price differences associated with product differentiation? (RQ4) Are consumers aware of the pink tax and its implications? (RQ5) Do consumers perceive gender-based pricing as fair or unfair? (RQ6) Does awareness influence willingness to compare prices, switch brands or support regulation? (RQ7) Do the views of women and men, or of different age, education, occupation and income groups, differ? (RQ8) What measures can improve transparency, fairness and gender equity in consumer markets? RQ1 to RQ3 belong to the price-audit phase; RQ4 to RQ8 are addressed here.

Six hypotheses were set. H1 to H3 concern market-level price data and are reserved for Phase 2; they are listed so that the full research model is transparent, and they are not tested in this article. H4 to H6 are tested with the survey data.

- **H1:** In selected categories of consumer products, women's products cost more than men's products. *(Phase 2)*

- **H2:** Price differences differ significantly across product categories. *(Phase 2)*
- **H3:** Product differentiation is positively associated with price differences between male- and female-oriented products. *(Phase 2)*
- **H4:** Awareness of the price gap is positively associated with perceived unfairness of gender-based pricing.
- **H5:** Perceived unfairness is positively associated with support for price transparency and regulation (policy support).
- **H6:** Perceived unfairness is positively associated with consumer response (willingness to avoid, compare or switch).

1.6 Significance and scope of the study

For consumers, the study highlights gender bias in pricing and the value of comparing unit prices, package sizes and ingredients; a higher-priced "women's" version is not necessarily better. For firms, it shows the reputational risk of pricing that consumers see as stereotype-driven and unexplained. For policy-makers, it offers evidence for consumer-protection and advertising regulation, price-transparency initiatives and reviews of taxes on gendered essentials. For the academic literature, it adds psychometrically screened multi-item scales for the Indian context and a test of how awareness, perceived unfairness, behavioural response and policy support are related, helping to separate whether price gaps exist from how society interprets them.

The survey covers consumer perceptions of gender-based pricing in categories where male and female variants are common: personal care, apparel and accessories, children's products, health and hygiene products and selected services. Respondents were adults (18 years and above) who purchase consumer goods regularly. The study does not cover all product categories or retail outlets and is not a measure of gender economic inequality in general.

2. Literature Review

This review is organised thematically: the concept and measurement of the pink tax; evidence from packaged goods and personal care; consumer awareness and attitudes; gendered marketing; taxation and regulation; and algorithmic pricing. It then summarises the theoretical perspectives, identifies the research gap and sets out the conceptual framework. The literature indicates that the pink tax is not monolithic: it may appear as a higher list price, a higher unit price, an additional service charge or a difference in net price after discounts, and it can be sustained indirectly through design, marketing and consumer preferences. The review therefore attends not only to the size of price gaps but also to their causes and to consumer reaction.

2.1 Concept and evolution of the pink tax

Early academic work by Duesterhaus, Grauerholz, Weichsel and Guittar (2011) compared the prices of personal-care products and services and described the additional expense of "doing femininity". The idea gained traction when the New York City Department of Consumer Affairs (2015) analysed 794 products from 91 brands across 35 product categories in 24 stores and five industries (toys and accessories, children's clothing, adult clothing, personal care, and senior or home-health-care products). Women's products cost 7 per cent more on average; the gap was 13 per cent for personal care, 8 per cent for adult clothing, 7 per cent for senior and home-health-care products, and 4 per cent each for toys and accessories and for children's clothing. Women's products were more expensive in 42 per cent of comparisons and men's products in 18 per cent.

The report did not claim that every difference was discriminatory, but it became a staple reference for legislators and consumer groups. Later academic studies used scanner data and product-level comparisons and confirmed that gender-based pricing is widespread while its causes are not straightforward: some studies point to price discrimination, others to product differentiation and consumer sorting.

2.2 Packaged goods, product differentiation and price discrimination

Moshary, Tuchman and Vajravelu (2026) analysed retail scanner data for consumer packaged goods and found that products for women were about 5.1 per cent more expensive for the same products in the same markets. Wholesale data, however, showed lower mark-ups on women's products. The gap therefore did not mainly arise from firms charging higher mark-ups on women's goods; rather, women tended to be concentrated in products with higher marginal costs and higher implied quality. More than 80 per cent of the products studied were gendered, indicating that the market is segmented by sex. When products were compared on the same ingredient basis, no consistent premium for female products appeared, and in three of five product families the female product was cheaper. Direct gender discrimination may thus be limited where consumers can easily compare and substitute.

Zhang and Zhang (2026) used NielsenIQ scanner data for toothbrushes and found that demand for women's products was less responsive to price, the classic condition under which a seller profits from a higher mark-up. Exploiting New York State's prohibition of gender-based pricing as a natural experiment, they found that the law reduced but did not eliminate price gaps, and a structural model suggested that some women's products were differentiated in ways that weakened substitution pressure and allowed higher mark-ups even where marginal costs were lower. Firms can therefore sustain price differences for physically similar goods through differentiation. The pink tax therefore cannot be judged from listed prices alone.

2.3 The pink tax in personal-care products

Personal care (shaving, deodorants, body sprays, soaps, shampoos, lotions and hair-care) is the most-studied category because many brands sell male and female versions of near-identical items. Chang et al. (2021) reported that four-bladed razors for women cost 66 per cent more than men's razors, which made razors a standard example of the pink tax. Guittar, Grauerholz, Kidder, Daye and McLaughlin (2022) studied more than 3,000 personal-care products and found that gender-based pricing was not uniformly unfavourable to women: women's deodorants, antiperspirants and lotions cost more, but men's shaving creams and gels cost more than women's equivalents. Nevertheless, pervasive gender differentiation confuses comparison and reinforces gender-essentialist ideas. Wishart, Poo, Baxter and Lau (2024) examined the pink tax in the personal-care sector and its effect on women's purchasing power, arguing that market systems perpetuate stereotypes and economic costs and that equitable pricing mechanisms and consumer advocacy are required. The pink tax is thus a social and cultural issue as well as an economic one.

2.4 Consumer awareness and attitudes

Awareness determines whether gender-based pricing becomes a public issue; if consumers do not notice price gaps, pressure on firms is limited. Febriyanti (2023) found low awareness of the pink tax in Indonesia. In India, Biswas, Parvathi, Misra and Kamath (2024) studied attitudes towards the pink tax among women and men and concluded that gender-based pricing contributes to inequality, violates consumer rights and aggravates economic disparities, particularly in view of the gender pay gap.

One of the more systematic Indian studies is Panigrahi and Ansari (2025), who compared 52 matched product pairs (personal care, clothing, children's, recreational and healthcare products) and surveyed 500 urban consumers. Female-oriented products were on average 19.4 per cent more expensive, with the largest mark-up in personal care (24.2 per cent); 72 per cent of respondents were unaware of the pink tax, 84 per cent were dissatisfied on learning of it and 91 per cent supported disclosure. Related Indian work includes Iyer and Akbar (2025) on gendered pricing and consumer perception, Kalakota, Sikes, Baguma, Suman and Maheshwari (2025) on personal-care pricing on Amazon India, Patel, Dhobi, Darji and Suthar (2026) on prevalence and economic impact in FMCG personal care, and Sareen and Sumit (2025) on corporate rationalisations and consumer awareness. These studies suggest that awareness campaigns can shift attitudes, but awareness may not suffice if consumers continue to choose gendered products or remain loyal to brands.

2.5 Gendered marketing and digital advertising

The pink tax also operates through advertising. Gender-specific appeals to beauty ideals, womanhood, manhood or lifestyle can raise willingness to pay and perceived value, and studies of gender socialisation suggest that girls and boys learn different consumption scripts that retailers reinforce. Mehrjoo and Cuevas (2024) coined the term "digital marketing pink tax" for the extra cost of reaching women online. Using Facebook advertising data for 187 countries and 40 territories, they found that advertisers in highly developed countries spent a median 30 per cent more to reach women than men, and that the premium was present in 79 per cent of audiences worldwide. Higher advertising costs may be passed on to consumers in prices, or firms may shape products and messages to exploit higher willingness to pay. Work on big-data targeting ("Research on the causes and countermeasures", 2025) and on gender-based pricing strategy ("Pink tax and gender-based pricing strategy", 2025) points the same way.

2.6 Taxation, menstrual products and legal perspectives

Although the pink tax is not a government tax, it overlaps with fiscal policy where gender-specific essentials are taxed. Calderón-Villarreal (2023) reviewed the taxation of menstrual products in the Americas (57 countries and territories plus 78 states in the United States and Brazil) and found that products were taxed in 63.2 per cent of locations, at an average rate of 11.2 per cent. Taxes on menstrual products can contribute to period poverty, which is also linked to stigma, poor sanitation, education and human rights; research on Brazil stresses multi-sectoral responses including lower taxes, better sanitation, free products in schools and workplaces, and menstrual-health education (de Moraes et al., 2025; McCarthy et al., 2026). In India, GST on sanitary napkins was 12 per cent from July 2017 and was reduced to nil from July 2018 (GST Council, 2018); market pricing and input-tax effects may still shape the final price paid.

Legal scholarship shows that gender-based price discrimination is hard to define, prove and regulate because it intersects with other gendered burdens such as the tampon tax and the wage gap (Essary, 2023; Pant, n.d.). California's Gender Tax Repeal Act of 1995 and New York's General Business Law section 391-u (effective 30 September 2020) prohibit different prices for similar services based on gender, and the New York law permits differences based on gender-neutral factors such as time, difficulty or cost. Zhang and Zhang (2026) found that the New York law reduced but did not remove gaps, implying that regulation must also address misleading claims and lack of transparency. Competition-law analysis has also been applied to healthcare pink taxes ("At first blush", 2025). India has no dedicated law banning gender-specific pricing of consumer goods. The main Indian instruments are the Constitution (Articles 14 and 15, which are directed primarily at the State), the Consumer Protection Act, 2019, the Competition Act, 2002 and the GST Council's 2018 decision on sanitary napkins; consumer-protection law, competition law and advertising standards may reach unfair trade practices, misleading advertisements or abuse of dominance, but not all gendered price differences.

Two lessons emerge from foreign experience. First, prohibitions are easier to enforce for services that are identical (haircuts, dry cleaning). Second, for goods the difficulty lies in deciding what is "substantially similar", and firms can respond by differentiating products, as Zhang and Zhang (2026) observed after the New York ban. In India, the Consumer Protection Act, 2019 recognises the consumer's right to be informed about the quantity, quality, standard and price of goods and to be assured access to goods at competitive prices (Government of India, 2019), and the abuse-of-dominance provisions of the Competition Act, 2002 might apply to unfair or discriminatory pricing by a dominant firm (Government of India, 2002). These rights can be exercised where misleading statements or non-disclosure accompany gendered pricing, but effective policy will probably need transparency measures such as unit-price labelling and explanations of price differences, together with consumer awareness and monitoring.

2.7 Beyond consumer goods and algorithmic pricing

The "pink tax" label has also been extended to health and public-policy research, such as the gendered effects of alcohol-pricing policies (Meier et al., 2021) and sex and gender disparities in peripheral artery disease (Martinez et al., 2024), showing that "hidden gender cost" has become a general analytical lens. Studies of personalised and algorithmic pricing raise further concerns about price burden, envy, access and distributional effects ("Fairness,

welfare, and equity", 2020) and argue that data-driven systems can perpetuate inequality ("Learning fair demand models", 2026; "Personalized pricing in social networks", 2025; "Consumer surplus evaluation", 2026). As e-commerce and dynamic pricing spread in India, the pink tax may appear in discounts, offers, delivery charges and advertising exposure as well as shelf prices.

2.8 Summary of key studies

Table 2. Summary of key studies reviewed

Study	Context	Method	Key finding
New York City Department of Consumer Affairs (2015)	New York City; five industries	Price comparison of 794 products, 91 brands	Women's products cost 7% more on average; 13% in personal care
Duesterhaus et al. (2011)	United States; personal-care products and services	Price comparison	Documented gendered price gaps in products and services
Moshary, Tuchman and Vajravelu (2026)	Consumer packaged goods	Retail scanner and wholesale data	Women paid about 5.1% more within the same market, but with lower mark-ups; gap linked to sorting into higher-cost products
Zhang and Zhang (2026)	Toothbrushes, New York	Scanner data and structural model; natural experiment	Lower demand elasticity for women's products; 2020 law reduced but did not eliminate gaps
Guittar et al. (2022)	Over 3,000 personal-care products	Product-level comparison	Pricing not uniformly punitive to women; differentiation makes comparison harder
Wishart et al. (2024)	Personal-care sector case	Case analysis	Gendered pricing erodes women's purchasing power
Mehrjoo and Cuevas (2024)	Facebook advertising, 187 countries	Advertising cost data	Median 30% more to reach women in highly developed countries
Panigrahi and Ansari (2025)	India; 52 matched pairs and 500 urban consumers	Price audit and survey	Female products 19.4% higher; 72% unaware; 91% support disclosure
Biswas et al. (2024)	India	Attitude survey	Gender-based pricing seen as perpetuating inequality
Calderón-Villarreal (2023)	Americas	Review of menstrual-product taxation	Menstrual products taxed in 63.2% of locations
Essary (2023)	United States	Legal analysis	Pink tax hard to define, prove and regulate

2.9 Research gap

The reviewed literature leaves several gaps. First, much of the influential evidence comes from high-income markets such as the United States, and systematic, category-specific evidence on pricing patterns and consumer responses in Indian retail is scarce. Second, many studies concentrate on a limited range of personal-care products, whereas clothing, accessories, consumer health products, services and children's goods need attention. Third, previous studies typically treat the pink tax as either discrimination or differentiation, and few combine price auditing with consumer-perception data to understand how gendered price differences are interpreted. Fourth, consumer studies usually report awareness and attitudes separately; little is known about how awareness, perceived unfairness, behavioural intention and policy support relate to each other, or whether these relationships differ between women and men, apart from a few studies using purpose-built multi-item scales with reported reliability. Fifth, the interaction of indirect taxes and prices in India has been little studied; research on menstrual-product taxation suggests that tax policy can aggravate gendered market inequalities, but India-specific evidence is limited. This study addresses these gaps by measuring awareness, perceived unfairness, consumer response and policy support reliably, comparing women and men and other demographic groups, testing relationships among the constructs and interpreting results through a consumer-equity framework.

2.10 Theoretical perspectives

Price discrimination. In economic theory, price discrimination is the practice of charging different prices for the same product to different customers without cost justification. Pigou (1920) distinguished three degrees: first-degree (each buyer pays their maximum), second-degree (price varies with quantity or product version) and third-degree (different prices for identifiable groups with different demand elasticities; see also Tirole, 1988; Varian, 1989). Gender is an easily observed group characteristic, so gender-based pricing is naturally analysed as third-degree discrimination, in which the seller seeks the highest price from the group with the least price-sensitive demand, as Zhang and Zhang (2026) found for toothbrushes.

Product differentiation. Lancaster (1966) proposed that consumers derive utility from the characteristics of goods rather than from goods themselves, so a product with a different bundle of characteristics (fragrance, packaging) is a different product to the consumer. Differentiation may be vertical (quality, on which all agree) or horizontal (attributes such as scent, on which tastes differ). Gendered products are mostly horizontally differentiated, which makes comparison ambiguous: a higher price may reflect a genuinely different formulation or merely a different label. This ambiguity explains why firms can defend gendered price gaps and why regulators struggle to challenge them.

Information asymmetry and search costs. Markets work best when buyers can compare cheaply. Stigler (1961) showed that costly search sustains price dispersion, and Akerlof (1970) showed how sellers' informational advantages distort markets. Gendered shelves raise search costs: a buyer who reads only the shelf labelled for their gender will not see a cheaper option on the other shelf, and unit prices are often not displayed when pack sizes differ. Unit-price labelling and clear price disclosure respond to this problem and are measured in the Policy Support scale.

Fairness and price perceptions. Kahneman, Knetsch and Thaler (1986) observed that people regard price increases that pass on cost increases as fair but regard increases that exploit market power as unfair. A gender premium unrelated to cost or quality is therefore likely to be judged unfair, which is the judgement captured by the Perceived Unfairness scale (marketing used to charge more, financial burden on women, reinforcement of stereotypes).

Gender socialisation and gendered consumption. West and Zimmerman (1987) argued that gender is continually "done" through everyday activities, including buying and displaying goods. Duesterhaus et al. (2011) applied this to "the cost of doing femininity": the range of products needed to meet expected standards of grooming gives sellers an opportunity to charge a premium, and gendered marketing makes gender-based pricing a reinforcer of stereotypes (measured by item Q15).

Mental accounting. Thaler (1985) showed that small, frequent purchases are treated as separate mental accounts and scrutinised less than large purchases. Personal-care and hygiene items are of this kind: a few rupees' difference per item is negligible but accumulates over a year.

2.11 Conceptual framework

2.11.1 Forms, drivers and consequences of the pink tax

The pink tax is a family of related pricing patterns rather than one practice. Five forms can be distinguished: direct price discrimination (the same or near-identical product or service sold at different prices to women and men, as with haircuts or dry cleaning); differentiation-based pricing (alteration of colour, scent, packaging or formulation to support a higher price for one segment); size or quantity differentiation (a smaller women's pack at the same or higher price, detectable only through unit prices); tax-based burdens (such as GST on menstrual products); and advertising- and algorithm-based pricing (higher cost of reaching women audiences, or personalised offers that vary by customer profile).

Five main drivers of gender-based price gaps follow from the literature and theory (Figure 1): product differentiation, gender-targeted marketing, lower price sensitivity among some customers, information asymmetry and, for some products, direct taxation. They interact: gendered marketing creates the differences on which differentiation is built, and differentiation makes comparison difficult. The consequences fall on consumers, firms and markets. For consumers, the immediate effect is reduced purchasing power, especially for essentials and frequently bought goods (Wishart et al., 2024). Splitting products into gendered lines makes price comparison harder and weakens competition, and gendered pricing harms society by reinforcing stereotypes about what women and men need (Guittar et al., 2022). For firms, the long-term risk is loss of consumer trust. For governments, the consequence is pressure for transparency rules, awareness campaigns and tax review, which is captured by the Policy Support scale.

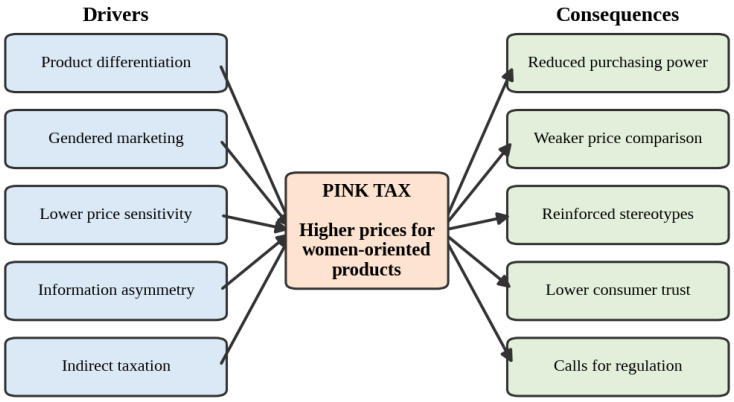

Figure 1. Drivers and consequences of the pink tax

2.11.2 Consumer equity

Consumer equity is defined here as consumers receiving the same price for the same product and being able to verify this. It has three dimensions. *Price equity*: price should reflect value and be the same for women and men. *Informational equity*: consumers should be able to read and compare unit prices and know the reasons for price differences. *Procedural equity*: consumers should have a voice and a remedy through regulation, redress and public awareness. In the survey, perceived unfairness maps to price equity, awareness and disclosure items to informational equity, and support for regulation and campaigns to procedural equity.

2.11.3 Conceptual framework and variables

The framework (Figure 2) defines the key variables and their relationships. Product differentiation and gendered marketing are the independent variables; the gender-based price difference (the pink tax) is the dependent variable;

and consumer-level outcomes are perceived fairness, willingness to switch, and support for transparency and regulation. Table 3 classifies the variables and Section 3.5 explains how they are measured.

Table 3. Classification of variables in the conceptual framework

Type of variable	Variables	Role in the framework
Independent	Product differentiation, gendered marketing, product category, brand, retail channel, package size, ingredients, fragrance, packaging design	Expected to influence the price difference between male- and female-oriented products
Dependent	Gender-based price difference (pink tax)	The main outcome of the price-audit phase
Mediating	Consumer awareness, perceived quality, perceived value, brand loyalty, price sensitivity	May explain how differentiation or marketing leads to higher willingness to pay
Moderating	Consumer gender, age, education, income, product category, retail channel	May strengthen, weaken or change the relationships
Control	Brand, package size, unit price, ingredients, features, discount, online versus offline channel	Held constant so that differences are not wrongly attributed to gender alone
Outcome	Perceived fairness, willingness to switch, support for transparency, support for regulation	Consumer response to gender-based pricing

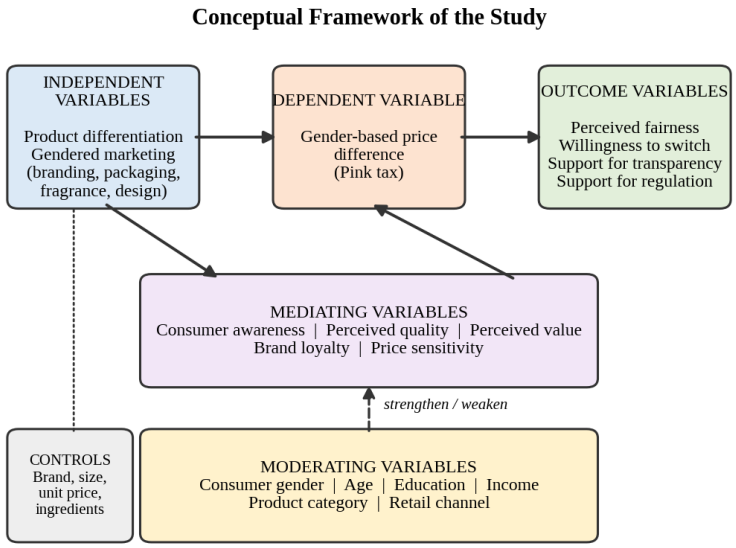

Figure 2. Conceptual framework of the study

Independent variables. Product differentiation covers differences in ingredients, fragrance, packaging, design, size and extra features; gendered marketing covers branding, emotional appeals, stereotypes, targeted advertising and positioning. Both are likely to raise the price of the women-oriented product; a women's razor may have a different handle, colour, lubricating strip or fragrance, and a women's deodorant may be marketed with emotional appeals, premium packaging or beauty messaging.

Dependent variable. The pink tax is the extent to which a female-targeted product costs more than a comparable male-targeted product:

$$\textit{Price difference (\%)} = [(Pf - Pm) / Pm] \times 100$$

where Pf is the price of the female-oriented product and Pm is the price of the comparable male-oriented product. Where pack sizes differ, unit price (total price divided by quantity or net weight) is used instead of total price.

Mediating and moderating variables. A mediator explains how the independent variable affects the dependent variable: gendered marketing may lead a consumer to believe a women's product is better suited to her, raising willingness to pay and enabling a higher price. A moderator alters the context in which a relationship operates (Baron and Kenny, 1986): the effect of gendered marketing on price differences may be larger for personal care than for clothing. The moderating role of gender in the relationships among awareness, unfairness, response and policy support is tested in Section 4.

Control and outcome variables. If a women's shampoo costs more than a men's, the researcher must check whether it is larger, uses better ingredients, a different formulation or a pricier brand; if so, the difference may reflect differentiation rather than gender-based discrimination. Outcome variables measure consumer reaction: a consumer who knows a women's product costs more than the men's equivalent may judge the pricing unfair, which may raise the likelihood of switching brands, buying unisex options or supporting government action.

2.11.4 Hypotheses and research model

The framework and literature produced the six hypotheses stated in Section 1.5. H1 to H3 are market-level hypotheses for the price-audit phase. H4 to H6 are consumer-level hypotheses tested here (Figure 3). The reasoning is that respondents who are aware of price gaps should be more likely to see gender-based pricing as unfair (H4); those who see it as unfair should be more supportive of transparency and regulation (H5) and more willing to change their purchasing (H6).

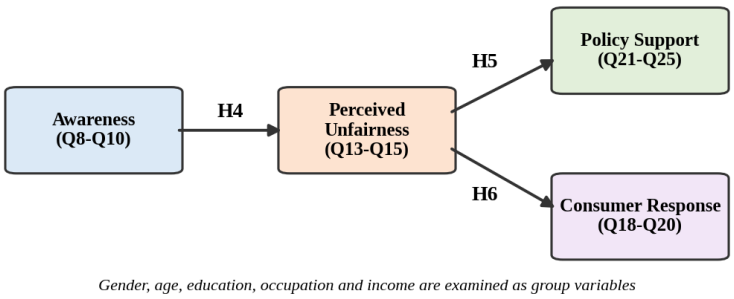

Figure 3. Research model tested with the survey data

3. Research Methodology

3.1 Research design

The wider research programme is descriptive and analytical and combines two components: consumer-survey data on perceptions and market-level price data. A mixed design is warranted because the pink tax requires both market-level evidence (whether a price gap exists) and consumer-level interpretation (whether it is noticed and judged fair). This article reports the quantitative consumer-survey component, a cross-sectional online survey. The descriptive part measures awareness, perceived unfairness, behavioural response and policy support; the analytical part examines relationships among these constructs and differences across demographic groups.

3.2 Data sources

Primary data were collected with a structured online questionnaire. Secondary data comprised academic journal articles, working papers, government and consumer-affairs reports, legislation, company websites, news reports and policy documents (see References).

3.3 Population, sampling technique and sample size

The target population was the general public aged 18 years and above who buy consumer goods regularly. The questionnaire was circulated online using convenience sampling supplemented by snowballing, so the sample is non-probabilistic. Between 26 and 30 October 2026, 96 complete responses were received, with no missing values. The target for the full programme was 150 to 200 respondents; the 96 responses form the initial wave analysed here, and the implications of this sample for generalisability are discussed in Section 6.5.

3.4 Data collection method

The questionnaire had five sections: (A) demographic profile (gender, age group, education, occupation and monthly household income); (B) awareness of the pink tax (Q6 to Q10); (C) perceptions of fairness (Q11 to Q15); (D) consumer response (Q16 to Q20); and (E) policy and transparency (Q21 to Q25). Attitude items were rated on a five-point Likert scale (Likert, 1932) from 1 (strongly disagree) to 5 (strongly agree); Q6 was answered Yes, No or Maybe. Participation was voluntary and based on informed consent, completion took about 8 to 10 minutes, and respondents could withdraw at any time. Names were replaced by serial codes (R001 to R096) before analysis and no personally identifiable information is reported.

3.5 Variables and measurement

Consumer-level variables are gender, age, education, occupation, income, awareness of the price gap, perceived unfairness, consumer response (including willingness to switch) and policy support for transparency and regulation. Market-level variables (category, brand, product, gender orientation, channel, listed and discounted price, unit price, package size, ingredients, features, packaging, fragrance and design) will be recorded in the price-audit phase. Four constructs were measured by multi-item scales of the analysed items (Table 4). Each index is the arithmetic mean of its items, and the percentage scoring 4 or above is reported as the share holding a favourable or supportive view. A mean of 4 or above is read as favourable agreement, 3 to 4 as moderate and below 3 as disagreement.

Table 4. Operationalisation of the survey constructs

Construct	Item	Statement (short)	Dimension of consumer equity
Awareness of the price gap	Q8	I have noticed price differences between men's and women's versions of similar products	Informational
	Q9	Products marketed to women are generally priced higher	Informational
	Q10	Gender-based pricing is common in personal-care products	Informational
Perceived unfairness	Q13	Companies use gender-based marketing to charge higher prices for women's products	Price
	Q14	Gender-based pricing increases the financial burden on women	Price
	Q15	Gender-based pricing reinforces gender stereotypes	Price
Consumer response	Q18	I would avoid brands that use unfair gender-based pricing	Procedural
	Q19	I compare the unit price or quantity before purchasing	Informational

Construct	Item	Statement (short)	Dimension of consumer equity
	Q20	I am influenced by product packaging and branding	Informational
Policy support	Q21	Companies should disclose clear unit prices for men's and women's products	Informational
	Q22	Companies should explain why similar products have different prices	Informational
	Q23	The government should regulate gender-based price discrimination	Procedural
	Q24	Consumer-awareness campaigns would influence my purchasing decisions	Procedural
	Q25	Taxes on essential menstrual hygiene products should be reduced or removed	Price

Fourteen of the 25 questionnaire items were retained after a purification step based on reliability analysis (Section 4.2). Q6 and Q7 (knowledge of the term), Q11 and Q12 (fairness of gender-based pricing and its justification by quality) and Q16 and Q17 (specific switching intentions) were discarded because they measured different concepts from the rest of their sections and lowered internal consistency. In particular, Q11 was worded in the opposite direction to Q13 to Q15, and the fairness section as originally worded had a Cronbach's alpha of only 0.375.

3.6 Analytical tools and techniques

Data were cleaned and analysed with Python (pandas, SciPy, statsmodels) and Microsoft Excel. Descriptive analysis used frequencies, means, medians, standard deviations and skewness. Reliability was assessed with Cronbach's alpha (Cronbach, 1951), ordinal alpha based on polychoric correlations (Zumbo, Gadermann and Zeisser, 2007) and bootstrap confidence intervals (2,000 resamples). Normality was tested with the Shapiro-Wilk test (Shapiro and Wilk, 1965), and scores were compared with the neutral value of 3 using the one-sample Wilcoxon signed-rank test. Groups were compared with the Mann-Whitney U test (Mann and Whitney, 1947), the Kruskal-Wallis test (Kruskal and Wallis, 1952) and chi-square tests, with effect sizes (r, Cramér's V, epsilon-squared) read against conventional benchmarks (Cohen, 1988). Relationships used Spearman correlations (Spearman, 1904), Fisher's z comparisons, linear regression with HC3 robust standard errors (Long and Ervin, 2000), logistic regression and interaction tests. Dimensionality was explored with principal component analysis, parallel analysis (Horn, 1965) and the Kaiser-Meyer-Olkin index (Kaiser, 1974). Holm's procedure (Holm, 1979) controlled the error rate across multiple tests. Because index scores were negatively skewed and non-normal, non-parametric methods were used throughout; the significance level was 0.05.

3.7 Data preparation

The raw export of the online form was checked and cleaned before analysis. It contained 96 responses, with no missing values and no duplicate records (two repeated names had different answers and were retained as separate respondents). Labels were standardised for capitalisation, spelling and hyphenation, and responses were coded from 1 (strongly disagree) to 5 (strongly agree); no items were reverse-coded. "School level" and "Other" education were merged (n = 5). The "Prefer not to say" income category was kept as a separate group and excluded from the income test. No respondent gave identical answers to all items. No records were deleted.

3.8 Planned price-audit phase

The second phase is a matched-product price audit of 50 to 60 male-female product pairs across personal care, apparel, children's products and health and hygiene goods in Bengaluru, covering online and offline channels,

with brand, listed and final price, pack size, unit price, ingredients and packaging recorded for each pair; differences will be tested with t-tests or Mann-Whitney tests, ANOVA or Kruskal-Wallis tests and regression. H1 to H3 are not tested here because this phase has not yet been carried out.

4. Results and Findings

4.1 Profile of the respondents

Of the 96 respondents, 53 (55.2 per cent) were women and 43 (44.8 per cent) were men (Table 5, Figure 4). The gender balance allows direct comparison of women and men, although subgroups are small. The sample is young: respondents aged 18 to 24 years form the largest group (42; 43.8 per cent), and almost two-thirds are under 35 (Figure 5). It is also highly educated: 93.1 per cent are graduates or hold a higher qualification (Figure 6), which may make respondents more aware of pricing issues than the general population. Students (37; 38.5 per cent) and salaried employees (32; 33.3 per cent) are the largest occupational groups; the retired group (6) is too small for firm inference (Figure 7). Income is the most incomplete variable: 38 respondents (39.6 per cent) did not report household income, so income comparisons rest on 58 respondents and are indicative only (Figure 8).

Table 5. Demographic profile of the respondents (n = 96)

Variable	Category	n	%
Gender	Female	53	55.2
	Male	43	44.8
Age group	18–24 years	42	43.8
	25–34 years	18	18.8
	35–44 years	12	12.5
	45–54 years	14	14.6
	55 years and above	10	10.4
Education	School/Other	5	5.2
	Undergraduate	40	41.7
	Postgraduate	40	41.7
	Professional qualification	11	11.5
Occupation	Student	37	38.5
	Salaried employee	32	33.3
	Self-employed	11	11.5
	Homemaker	10	10.4
	Retired	6	6.2
Monthly household income	Below ₹25,000	12	12.5
	₹25,000–₹50,000	14	14.6

Variable	Category	n	%
	₹50,001–₹1,00,000	17	17.7
	Above ₹1,00,000	15	15.6
	Prefer not to say	38	39.6
Total		96	100.0

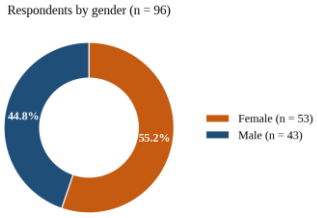

Figure 4. Respondents by gender

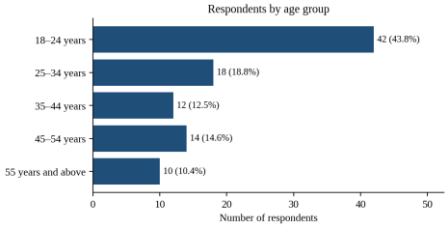

Figure 5. Respondents by age group

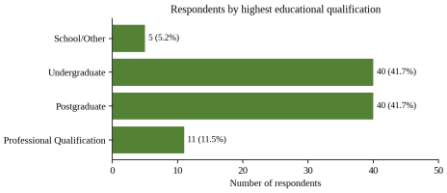

Figure 6. Respondents by highest educational qualification

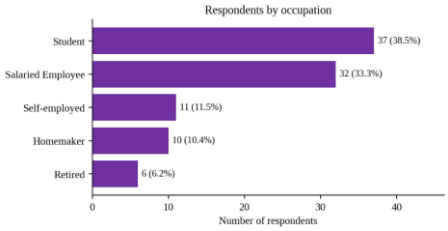

Figure 7. Respondents by occupation

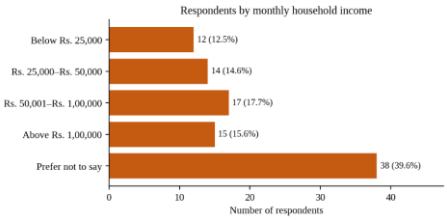

Figure 8. Respondents by monthly household income

Gender and occupation are not independent in this sample (Figure 9). Ten of the 43 men (23.3 per cent) are self-employed against one of the 53 women (1.9 per cent); nine women (17.0 per cent) are homemakers against one man (2.3 per cent); and 45.3 per cent of women but 30.2 per cent of men are students. The association is statistically significant (Section 4.5.3), so some gender differences may reflect occupation.



Figure 9. Occupation by gender

4.2 Reliability of the scales

Internal consistency was assessed with Cronbach's alpha, with 0.70 or above treated as acceptable (Nunnally, 1978; Nunnally and Bernstein, 1994). Because five-point responses are ordinal and strongly skewed, alpha tends to understate reliability, so ordinal alpha and bootstrap confidence intervals are also reported (Table 6, Figure 10). All four scales reach the 0.70 benchmark: Awareness 0.729, Perceived Unfairness 0.799, Consumer Response 0.734 and Policy Support 0.749, with ordinal alphas between 0.769 and 0.830. Mean inter-item correlations (0.38 to 0.57) lie in or above the range of 0.20 to 0.40 considered desirable for short scales. With 96 respondents, the lower bound for the Awareness scale's true reliability is 0.56, so results should be verified in a larger sample.

Table 6. Reliability of the four scales

Scale	Items	Cronbach's alpha	Ordinal alpha	Mean inter-item r	Bootstrap 95% CI	Meets 0.70?
Awareness (Q8–Q10)	3	0.729	0.769	0.479	0.556–0.827	Yes
Perceived Unfairness (Q13–Q15)	3	0.799	0.830	0.568	0.634–0.884	Yes
Consumer Response (Q18–Q20)	3	0.734	0.808	0.481	0.618–0.821	Yes
Policy Support (Q21–Q25)	5	0.749	0.804	0.379	0.630–0.822	Yes

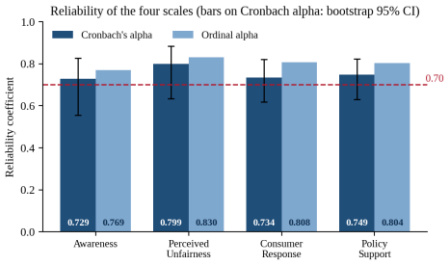

Figure 10. Reliability coefficients of the four scales

Item-level diagnostics show that all retained items have corrected item-total correlations of 0.30 or above. The strongest are Q9 (0.693) and Q14 (0.713), and Q25 is the weakest in the set (0.304); it was retained because it measures a policy-relevant idea, although its deletion would raise the Policy Support alpha to 0.779.

4.3 Descriptive analysis of the constructs

Table 7 reports the response distribution for the 14 analysed items. **Awareness.** Most respondents have noticed the price gap: 77 (80.2 per cent) have noticed price differences between men's and women's versions of similar

products (Q8), 75 (78.1 per cent) believe women's products are generally priced higher (Q9) and 65 (67.7 per cent) agree that gender-based pricing is common in personal care (Q10); means are 3.90, 3.89 and 3.80 (Figure 11). Q10 has the lowest agreement and the most neutral responses (20.8 per cent), suggesting respondents are more confident about what they have experienced than about how widespread the practice is.

Perceived unfairness. Gender-based pricing is widely seen as harmful (Figure 12). Seventy-three respondents (76.0 per cent) agree that companies use gender-based marketing to charge women more (Q13), and only three (3.1 per cent) disagree, the lowest disagreement of any item. Seventy (72.9 per cent) agree that it adds to the financial burden on women (Q14), the item with the highest proportion of strong agreement (34.4 per cent), and 75 (78.1 per cent) agree that it reinforces gender stereotypes (Q15). Item means (3.95, 3.98 and 3.90) are very close, which helps explain the scale's high reliability. This pattern fits Kahneman, Knetsch and Thaler's (1986) account of premiums unrelated to cost as unfair.

Consumer response. More than two-thirds agree with each response item (Figure 13). Seventy-four respondents (77.1 per cent) say they compare unit prices or quantities before purchase (Q19), and 66 (68.8 per cent) say they would avoid brands that use unfair gender-based pricing (Q18). Another 66 (68.8 per cent) admit that packaging and branding influence their purchases (Q20); this indicates that packaging cues continue to work, which is what allows gendered presentation to sustain price differences. Q20 attracts the largest disagreement in the section (11.5 per cent).

Policy support. Policy support gives the highest scores in the survey (Figure 14). Seventy-seven respondents (80.2 per cent) agree that unit prices for men's and women's products should be disclosed (Q21), and 76 (79.2 per cent) that reasons for different prices should be explained (Q22). Seventy-six (79.2 per cent) agree that government should regulate gender-based price discrimination (Q23), including 30 who strongly agree, and 73 (76.0 per cent) say awareness campaigns would influence their purchases (Q24). Agreement is highest for Q25: 80 respondents (83.3 per cent) agree that taxes on essential menstrual hygiene products should be reduced or removed, 38 (39.6 per cent) strongly, in line with the 2018 GST exemption debate.

Table 7. Response distribution and descriptive statistics for the 14 analysed items (counts; n = 96)

Item	Statement (short)	1	2	3	4	5	Mean	SD	% agree
Q8	Noticed price differences	2	4	13	60	17	3.90	0.81	80.2
Q9	Women's products priced higher	6	3	12	50	25	3.89	1.03	78.1
Q10	Common in personal care	4	7	20	38	27	3.80	1.06	67.7
Q13	Marketing used to charge more	2	1	20	50	23	3.95	0.83	76.0
Q14	Increases financial burden on women	3	3	20	37	33	3.98	0.98	72.9
Q15	Reinforces gender stereotypes	2	7	12	53	22	3.90	0.91	78.1
Q18	Would avoid unfair-pricing brands	3	4	23	43	23	3.82	0.95	68.8
Q19	Compares unit price before buying	1	9	12	51	23	3.90	0.91	77.1
Q20	Influenced by packaging and branding	2	9	19	44	22	3.78	0.98	68.8
Q21	Companies should disclose unit prices	0	3	16	54	23	4.01	0.73	80.2
Q22	Companies should explain price gaps	1	3	16	47	29	4.04	0.83	79.2
Q23	Government should regulate	1	6	13	46	30	4.02	0.89	79.2
Q24	Campaigns would influence purchases	1	7	15	49	24	3.92	0.89	76.0

Item	Statement (short)	1	2	3	4	5	Mean	SD	% agree
Q25	Reduce tax on menstrual products	1	4	11	42	38	4.17	0.87	83.3

Note. 1 = strongly disagree, 5 = strongly agree; % agree = responses of 4 or 5. Q8–Q10 Awareness; Q13–Q15 Perceived Unfairness; Q18–Q20 Consumer Response; Q21–Q25 Policy Support.

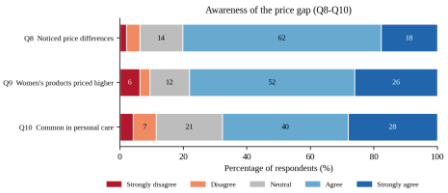

Figure 11. Responses to the Awareness items (percentage of respondents)

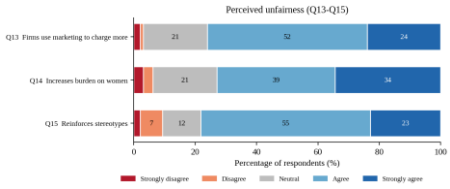

Figure 12. Responses to the Perceived Unfairness items (percentage of respondents)

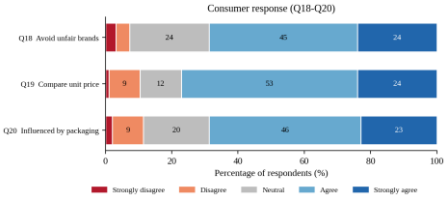

Figure 13. Responses to the Consumer Response items (percentage of respondents)

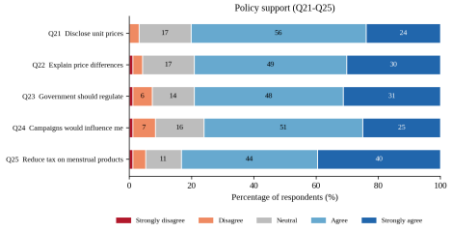

Figure 14. Responses to the Policy Support items (percentage of respondents)

Every item and every index exceeds the neutral score of 3 (item means 3.78 to 4.17; one-sample Wilcoxon signed-rank tests, all $p < 0.001$; Figure 15). The lowest-rated item is Q20 (packaging influence, 3.78) and the highest is Q25 (menstrual-product taxes, 4.17). Policy items tend to score higher than awareness and behaviour items: respondents are more willing to call for action by companies and government than to commit to changing their own behaviour.

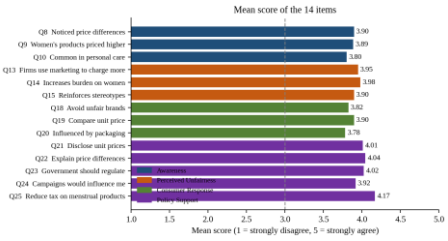

Figure 15. Mean scores of the 14 items

4.4 Index scores and their distribution

Table 8 summarises the four indices. The ranking should not be over-read because the 95 per cent confidence intervals in Figure 16 overlap for Policy Support, Perceived Unfairness, Awareness and Consumer Response. The shares scoring 4 or above are 70.8 per cent for Policy Support, 67.7 per cent for Perceived Unfairness, 63.5 per cent for Awareness and 50.0 per cent for Consumer Response, making Consumer Response the least favourably oriented construct.

Table 8. Descriptive statistics of the four indices

Index	Mean	Median	SD	Min	Max	Skewness	Shapiro-Wilk W	% scoring 4+	Wilcoxon vs 3 (p)
Awareness (Q8–Q10)	3.86	4.00	0.79	1.00	5.00	−1.21	0.892	63.5	< 0.001
Perceived Unfairness (Q13–Q15)	3.94	4.00	0.77	1.00	5.00	−1.19	0.902	67.7	< 0.001
Consumer Response (Q18–Q20)	3.83	3.83	0.76	1.67	5.00	−0.45	0.946	50.0	< 0.001
Policy Support (Q21–Q25)	4.03	4.00	0.60	2.20	5.00	−0.62	0.939	70.8	< 0.001

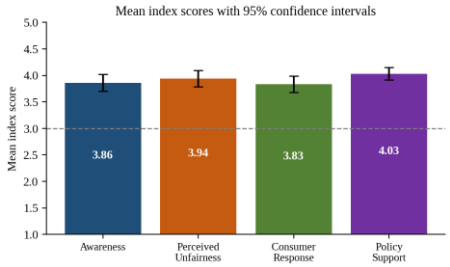

Figure 16. Mean index scores with 95% confidence intervals

Awareness and Perceived Unfairness are strongly left-skewed (−1.21 and −1.19) with a tail of respondents scoring below 3, whereas Consumer Response and Policy Support are less skewed (−0.45 and −0.62) (Figure 17). No index is normally distributed (Shapiro-Wilk $p \leq 0.001$), and most respondents score 4 or 5, a ceiling effect that justifies rank-based tests. Policy Support has the smallest standard deviation (0.60) and is the most consistent construct.

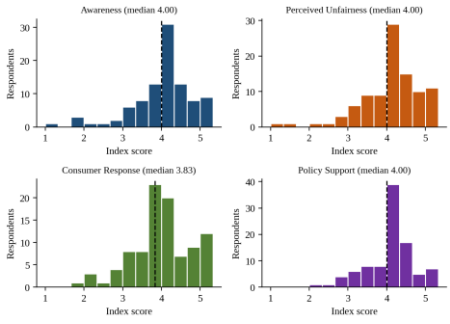

Figure 17. Distribution of the four index scores

4.5 Differences between women and men

4.5.1 Index scores by gender

Table 9 and Figure 18 compare women (n = 53) and men (n = 43) using the Mann-Whitney U test. The groups hold very similar views on perceived unfairness (3.91 for women, 3.98 for men), consumer response (3.81 and 3.87) and policy support (4.02 and 4.04); differences are not significant (p = 0.337, 0.723 and 0.678; effect sizes 0.10 or less). The only difference worth noting is awareness, where women scored 3.72 and men 4.04 (r = 0.21, p

= 0.038, a small effect). Because 20 tests were run, this must be judged against the Holm-adjusted p-value of 0.764: the difference is not statistically reliable and serves only as a pointer for future research.

Table 9. *Index scores by gender (Mann-Whitney U test; female n = 53, male n = 43)*

Index	Female mean	Male mean	U	p	Effect size r	Holm p
Awareness (Q8–Q10)	3.72	4.04	863.5	0.038	0.21	0.764
Perceived Unfairness (Q13–Q15)	3.91	3.98	1011.0	0.337	0.10	1.000
Consumer Response (Q18–Q20)	3.81	3.87	1091.5	0.723	0.04	1.000
Policy Support (Q21–Q25)	4.02	4.04	1083.5	0.678	0.04	1.000

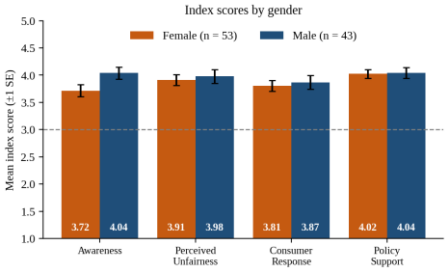

Figure 18. Mean index scores of women and men (error bars: one standard error)

4.5.2 Item-level differences

The largest item-level difference (Figure 19; item-level p-values are unadjusted) is that men were more likely than women to agree that gender-based pricing is common in personal-care products (Q10: 76.7 versus 60.4 per cent agreeing; means 4.09 and 3.57; p = 0.017). After correction for 14 tests the Holm-adjusted p-value is 0.242, so this too is tentative. The direction is the opposite of what many would expect, since women are not more likely than men to say the practice is common. One possible explanation is occupation: men in this sample are more often self-employed and women more often students or homemakers, whose exposure to personal-care shopping may differ; the sample cannot separate these explanations. Women were somewhat more likely than men to agree with unit-price disclosure, explanation of price gaps and regulation (84.9 per cent versus 72.1 to 74.4 per cent on each of the three items), but none of these differences is significant.

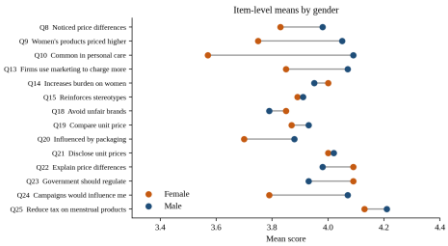

Figure 19. Item-level mean scores of women and men

4.5.3 Association of gender with other variables

Chi-square tests show no significant association of gender with age (p = 0.137), education (p = 0.622) or income (p = 0.956), and women and men do not differ in the proportion scoring high (4 or above) on any index. The only significant association is gender with occupation (χ^2 = 19.37, df = 4, p < 0.001, Cramér's V = 0.45, Holm p = 0.008), discussed in Section 4.1; several cells are small, so this is a test of pattern rather than a precise estimate.

Two further tests relate to the hypotheses: high perceived unfairness is associated with high policy support (χ^2 = 9.62, p = 0.002, V = 0.32, Holm p = 0.019), while the association between high awareness and high unfairness is smaller and not significant after correction (p = 0.018, Holm p = 0.166).

4.6 Differences across other demographic groups

Kruskal-Wallis tests for age, education, occupation and income show no significant difference at the 5 per cent level in any of the 16 comparisons (unadjusted p-values 0.070 to 0.918); the smallest p-value (0.070) is for policy support across education levels, and after Holm adjustment all p-values for these groupings are 1.000. Attitudes are therefore fairly consistent across these groups.

Age. Perceived unfairness is highest in the 25 to 34 group (4.20) and lowest in the 45 to 54 group (3.76), and the highest consumer-response score (4.30) is in the 55-and-above group (n = 10); no difference is significant (0.160 < p < 0.918) and the older groups are too small for reliable patterns (Figure 20). *Education.* Awareness is similar for undergraduates (3.88), postgraduates (3.84) and professionals (3.94), so there is no evidence that more education brings more awareness of the price gap; the highest policy support (4.64) is among the five respondents with school-level or other education (Figure 21).

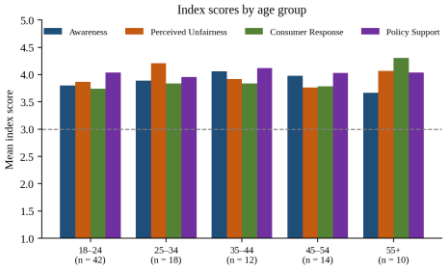

Figure 20. Index scores by age group

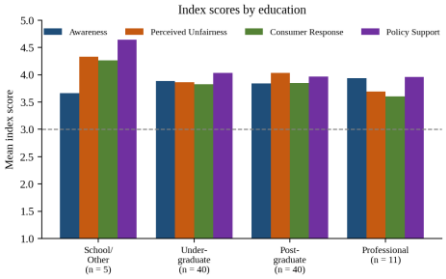

Figure 21. Index scores by educational qualification

Occupation. Occupational differences are the most visible but not significant (Figure 22). The six retired respondents have the highest consumer-response (4.50) and policy-support (4.47) scores, and self-employed respondents the lowest (3.61 and 3.71), possibly reflecting greater caution about price regulation among the self-employed; with p-values of 0.113 and 0.103 these should not be reported as findings. *Income.* Among the 58 respondents reporting income, no construct is consistently related to income (Figure 23): the highest awareness (4.18) and lowest perceived unfairness (3.62) are in the group earning above ₹1,00,000 a month, and the group earning below ₹25,000 gives the strongest policy support (4.35), but all p-values exceed 0.28. Concern about gender-based pricing is therefore not confined to a particular income group.

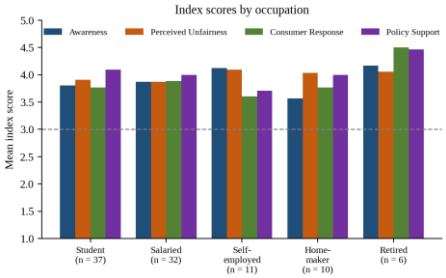

Figure 22. Index scores by occupation

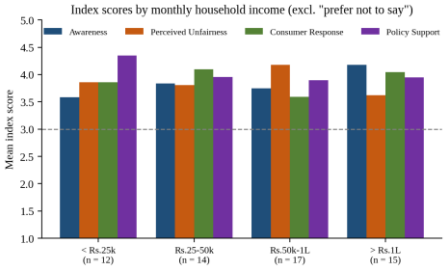

Figure 23. Index scores by monthly household income

4.7 Relationships among the constructs and hypothesis tests

4.7.1 Correlation analysis

Spearman rank correlations, suitable for ordinal and skewed data, were computed for each pair of indices (Table 10, Figure 24), with Holm-adjusted p-values over seven tests.

Table 10. Spearman rank correlations between the indices (n = 96)

Hypothesis / pair	Spearman rho	p	Holm p	Result
H4: Awareness vs Perceived Unfairness	0.161	0.117	0.134	Not significant
H5a: Unfairness vs Policy Support	0.364	< 0.001	0.002	Significant
H5b: Unfairness vs Government should regulate (Q23)	0.348	< 0.001	0.003	Significant
H6: Unfairness vs Consumer Response	0.188	0.067	0.134	Not significant
Awareness vs Consumer Response	0.220	0.032	0.126	Not significant
Awareness vs Policy Support	0.208	0.042	0.126	Not significant
Consumer Response vs Policy Support	0.618	< 0.001	< 0.001	Significant

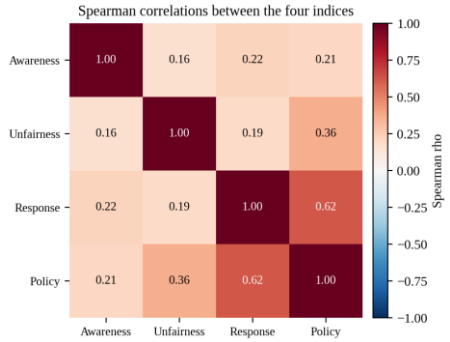

Figure 24. Spearman correlations between the four indices

H4: awareness and perceived unfairness. H4 predicted that awareness of the price gap is positively related to perceived unfairness. The relationship is positive but weak and non-significant (rho = 0.161, p = 0.117; Holm p = 0.134; Figure 25), so H4 is not supported in the full sample. Noticing price differences does not by itself lead respondents to regard them as unfair.

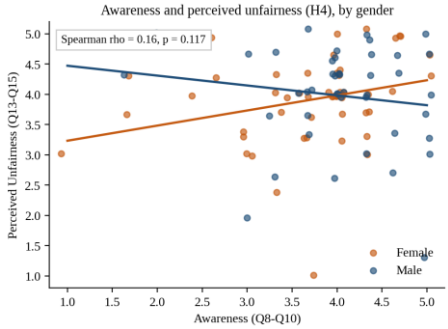

Figure 25. Awareness and perceived unfairness, by gender

H5: perceived unfairness and policy support. H5 predicted that respondents who see gender-based pricing as unfair will be more supportive of transparency and regulation. This is the clearest result. Perceived unfairness and policy support are moderately and positively correlated (rho = 0.364, $p < 0.001$; Holm p = 0.002), and unfairness is also correlated with agreement that government should regulate (Q23: rho = 0.348, Holm p = 0.003); the top-box chi-square test agrees (Section 4.5.3). H5 is supported (Figure 26). Those who call for informational and procedural remedies are those who regard the price difference as unfair, as the consumer-equity framework implies.

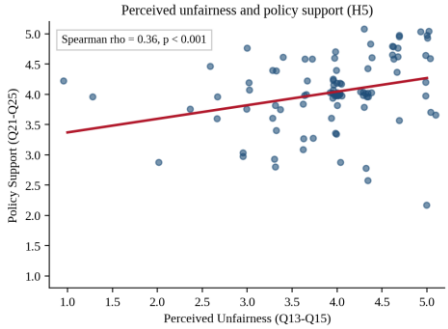

Figure 26. Perceived unfairness and policy support

H6: perceived unfairness and consumer response. H6 predicted that perceived unfairness increases the likelihood of changing purchasing behaviour. The correlation is positive but small and not significant at the 5 per cent level (rho = 0.188, p = 0.067; Holm p = 0.134; Figure 27), so H6 is not supported. The weak link points to an attitude-behaviour gap: consumers may regard a gendered price as unfair without changing brand or product, perhaps because gendered alternatives are close substitutes, because switching seems costly, or because the gap is too small to be salient (Thaler, 1985). This is consistent with the strong policy support: respondents seem to prefer solutions from companies and government to changes in their own shopping.

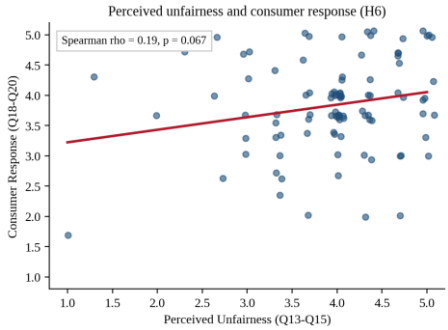

Figure 27. Perceived unfairness and consumer response

The strongest correlation of all is between consumer response and policy support (rho = 0.618, p < 0.001): respondents who avoid unfair brands, compare unit prices and recognise packaging cues are also those who most strongly support disclosure and regulation. The overlap is large enough to suggest that the two constructs are not entirely distinct, a point taken up in Section 4.9.

4.7.2 Does gender change the relationships?

The correlations were repeated separately for women and men and compared using Fisher's z (Table 11, Figure 28). The link between perceived unfairness and policy support is significant and similar in both groups (women rho = 0.30; men rho = 0.41; difference p = 0.556). The H4 correlation between awareness and perceived unfairness appears only among women (rho = 0.34, p = 0.012) and not among men (rho = −0.08, p = 0.620); the difference between the two correlations has p = 0.040, which does not survive Holm correction (Holm p = 0.241). A similar pattern holds for awareness and policy support (women 0.38; men −0.02; difference p = 0.049, Holm p = 0.245).

Table 11. Correlations between the indices by gender and test of the difference

Pair	Female rho	Female p	Male rho	Male p	Fisher z	p (difference)	Holm p
H4: Awareness vs Unfairness	0.34	0.012	−0.08	0.620	2.05	0.040	0.241
H5a: Unfairness vs Policy Support	0.30	0.027	0.41	0.006	−0.59	0.556	1.000
H6: Unfairness vs Consumer Response	0.25	0.074	0.12	0.424	0.60	0.550	1.000
Awareness vs Consumer Response	0.27	0.049	0.13	0.417	0.71	0.477	1.000
Awareness vs Policy Support	0.38	0.005	−0.02	0.903	1.97	0.049	0.245
Consumer Response vs Policy Support	0.50	< 0.001	0.71	< 0.001	−1.66	0.096	0.384

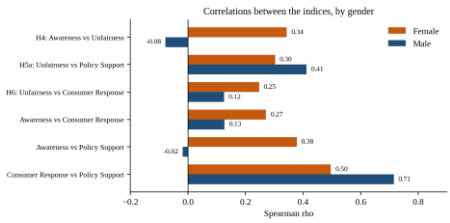

Figure 28. Correlations between the indices for women and men

Interaction terms in OLS regression with HC3 standard errors give the same message. The awareness × gender interaction for perceived unfairness is positive but not significant (B = 0.413, SE = 0.234, p = 0.078), and the interactions of gender with unfairness on policy support (B = −0.012, p = 0.955) and on consumer response (B = 0.301, p = 0.284) are far from significant. Gender is therefore not a reliable moderator in these data. The pattern is a lead for a larger sample: awareness may heighten perceptions of unfairness among women, who bear the burden, more than among men.

4.8 Regression analysis

4.8.1 Linear regression

Three linear models with robust (HC3) standard errors were estimated with gender as a control (Table 12). Model 1 regresses policy support on perceived unfairness, awareness, consumer response and gender; it is significant

and explains 37.8 per cent of variance (adjusted $R^2 = 0.350$). Consumer response is the only significant predictor ($B = 0.417$, $p < 0.001$): each one-point increase in consumer response is associated with a 0.42-point increase in policy support. Perceived unfairness, which correlates significantly with policy support on its own, is not significant once consumer response is controlled ($B = 0.133$, $p = 0.249$), and neither awareness nor gender has an effect. Part of the bivariate link between unfairness and policy support therefore reflects the shared tendency of respondents to endorse both personal action and policy. Models 2 (consumer response) and 3 (perceived unfairness) are not significant ($R^2 = 0.072$ and 0.009), consistent with the non-support of H6 and H4, and gender has no effect in any model ($p = 0.73$ to 0.99).

Table 12. Regression models with robust (HC3) standard errors (n = 96)

Model	Predictor	B	SE	p
Model 1: Policy Support	Constant	1.642	0.648	0.011
	Perceived Unfairness	0.133	0.116	0.249
	Awareness	0.063	0.086	0.464
	Consumer Response	0.417	0.106	< 0.001
	Female (vs male)	0.036	0.106	0.734
Model fit: $R^2 = 0.378$; adjusted $R^2 = 0.350$; F-test $p < 0.001$				
Model 2: Consumer Response	Constant	2.429	0.712	< 0.001
	Perceived Unfairness	0.192	0.146	0.189
	Awareness	0.167	0.126	0.184
	Female (vs male)	0.003	0.155	0.985
Model fit: $R^2 = 0.072$; adjusted $R^2 = 0.042$; F-test $p = 0.245$				
Model 3: Perceived Unfairness	Constant	3.647	0.481	< 0.001
	Awareness	0.082	0.117	0.483
	Female (vs male)	−0.038	0.166	0.817
Model fit: $R^2 = 0.009$; adjusted $R^2 = -0.013$; F-test $p = 0.738$				

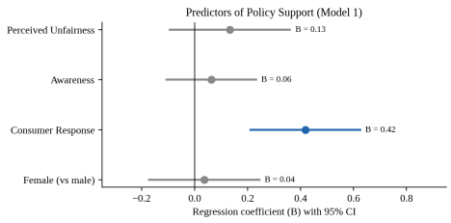

Figure 29. Predictors of Policy Support (Model 1)

4.8.2 Logistic regression

Policy support was dichotomised, with 68 respondents (70.8 per cent) scoring 4 or above classed as highly supportive. In the logistic model (Table 13) the only significant predictor is consumer response (odds ratio = 5.18, 95 per cent CI 2.14 to 12.53, $p < 0.001$): a one-point increase on the response scale raises the odds of high policy support roughly fivefold. Awareness is close to significance (odds ratio 1.96, $p = 0.072$), while perceived unfairness (1.65) and gender (1.03) are not significant. Pseudo R^2 is 0.248.

Table 13. Logistic regression for high Policy Support (index of 4 or more); pseudo $R^2 = 0.248$

Predictor	B	Odds ratio	95% CI for odds ratio	p
Perceived Unfairness	0.501	1.65	0.77–3.52	0.194
Awareness	0.672	1.96	0.94–4.07	0.072
Consumer Response	1.645	5.18	2.14–12.53	< 0.001
Female (vs male)	0.029	1.03	0.35–3.05	0.958

4.9 Structure of the data: component analysis

An exploratory principal component analysis of the 14 items tested whether they cluster as the scales predict. The Kaiser-Meyer-Olkin measure is acceptable (0.72) and Bartlett's test is significant ($\chi^2 = 509.1$, $p < 0.001$), so the correlation matrix is suitable for factoring. Parallel analysis supports three components (Table 14, Figure 30): the first four eigenvalues are 4.20, 2.06, 1.90 and 1.10, and only the first three exceed the random-data benchmarks.

Table 14. Eigenvalues and parallel analysis (KMO = 0.72; Bartlett $\chi^2 = 509.1$, $p < 0.001$)

Component	Eigenvalue	% of variance	Cumulative %	Parallel-analysis 95th percentile	Retained
1	4.20	30.0	30.0	1.89	Yes
2	2.06	14.7	44.7	1.65	Yes
3	1.90	13.6	58.2	1.47	Yes
4	1.10	7.9	66.1	1.36	No
5	0.88	6.3	72.4	1.25	No
6	0.72	5.1	77.5	1.15	No

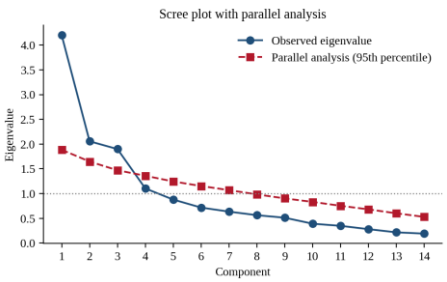

Figure 30. Scree plot with parallel analysis

After varimax rotation (Figure 31), the Awareness items (Q8 to Q10) cluster on one component (loadings 0.72 to 0.87) and the Perceived Unfairness items (Q13 to Q15) on a second (Q13 0.77, Q14 0.85, Q15 0.85), so these two scales are clearly distinct. The Consumer Response items (Q18 to Q20) and the Policy Support items (Q21 to Q23 and Q25) load together on a third component (0.48 to 0.78), while Q24, on awareness campaigns, loads on both the awareness component (0.45) and the combined component (0.37). The data thus support the separateness of awareness and perceived unfairness but not of consumer response and policy support: respondents who say they would act are largely the same respondents who call for policy action. This agrees with the 0.62 correlation between the two indices and with the dominant role of consumer response in the regressions. Given the sample of 96, the component analysis is exploratory.

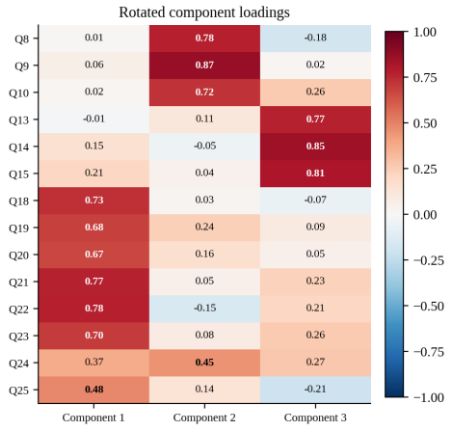

Figure 31. Rotated component loadings of the 14 items

4.10 Summary of hypothesis testing

Table 15. Summary of the hypotheses

Hypothesis	Statement	Evidence	Decision
H1	Female-oriented products are priced higher than comparable male-oriented products	Requires price-audit data	Not tested in this phase
H2	Price differences differ across product categories	Requires price-audit data	Not tested in this phase
H3	Product differentiation is positively associated with price differences	Requires price-audit data	Not tested in this phase
H4	Awareness is positively associated with perceived unfairness	rho = 0.161, p = 0.117 (Holm p = 0.134)	Not supported
H5	Perceived unfairness is positively associated with policy support	rho = 0.364, p < 0.001 (Holm p = 0.002)	Supported
H6	Perceived unfairness is positively associated with consumer response	rho = 0.188, p = 0.067 (Holm p = 0.134)	Not supported

5. Discussion

5.1 Interpretation of the findings

Four patterns stand out. First, gender-based price gaps are widely perceived and widely disapproved of. About 80 per cent of respondents have noticed price differences between men's and women's versions of similar products, and 73 to 78 per cent agree that gender-based pricing is a marketing-driven burden that reinforces stereotypes. Only 3.1 per cent reject the view that companies use gender-based marketing to charge women more. Second, awareness does not translate mechanically into a sense of unfairness (H4 not supported), and a sense of unfairness does not translate into changed purchasing (H6 not supported). Noticing a gap, judging it unfair and acting on it appear to be three separate steps, and the survey shows a disconnect between the first two and the third. Third, policy support is the dominant response: 76 to 83 per cent agree with each of the five policy statements, and it rises with perceived unfairness (H5 supported). Respondents look to companies and government, through unit-price disclosure, explanations of price gaps, regulation, campaigns and tax relief, rather than to their own switching behaviour. Fourth, women and men hold remarkably similar views, and attitudes are broadly uniform across age, education, occupation and income.

5.2 Comparison with previous studies

The finding that about 80 per cent have seen a price difference between men's and women's products is consistent with the view that the pink tax is visible in individual cases but hard to quantify as a systematic practice. Panigrahi and Ansari (2025) reported that 72 per cent of urban consumers were unaware of the pink tax. The present survey measured awareness of the price gap, not of the term, so the two are not directly comparable, but together they suggest a difference between noticing a price gap and recognising it as a systematic practice. Febriyanti (2023) found low awareness in Indonesia; the higher awareness here may partly reflect the young and highly educated sample.

The high perception of harm echoes the fairness literature. Kahneman, Knetsch and Thaler (1986) found that consumers do not accept price differences unrelated to costs, and the broad agreement that gendered marketing is used to raise the price paid by women suggests that respondents do not see the differences as cost-based. This does not contradict the scanner-data evidence of Moshary, Tuchman and Vajravelu (2026), who found that part of the observed gap arises from women sorting into higher-cost products. The two address different things: the survey measures perceptions, while scanner data measure prices and costs. The price-audit phase is needed to connect them. The result is consistent with Biswas et al. (2024), who saw gender-based pricing as perpetuating inequality, and with Panigrahi and Ansari's (2025) finding of strong support for disclosure: about 80 per cent here favour unit-price disclosure.

The weak links from awareness to unfairness and from unfairness to behaviour fit two strands of earlier work. Zhang and Zhang (2026) found that demand for women's products is less responsive to price changes, which would sustain price gaps whatever consumers say about fairness; and mental accounting (Thaler, 1985) suggests that small, frequent expenditures are scrutinised little. The strong support for cutting taxes on menstrual hygiene products (83.3 per cent) accords with the international evidence on menstrual-product taxation reviewed by Calderón-Villarreal (2023) and with India's 2018 GST exemption.

5.3 Implications of the findings

Theoretical. The results suggest that perceived unfairness, as predicted by fairness theory, is a robust and widely shared judgement, but that it is expressed mainly through demands for institutional remedies and not through individual market behaviour. The near-complete overlap of consumer-response and policy-support items indicates that "willing to act" consumers are also those most in favour of regulation, a profile of vigilant consumers who want both personal and institutional solutions. The consumer-equity framework helps to organise this: unfairness (price equity) is linked to demands for disclosure (informational equity) and regulation (procedural equity).

Practical and policy. Because awareness alone does not change behaviour, campaigns need to be combined with disclosure rules that make comparison easy, and the popularity of unit-price disclosure, explanation of price gaps and regulation indicates a favourable climate for transparency requirements.

5.4 Explanation of unexpected results

Several results ran against expectation. (i) H4 was not supported although theory suggests awareness should foster a sense of unfairness; ceiling effects are a likely contributor, because most respondents scored high on both scales. The awareness-unfairness correlation is positive among women (rho = 0.34) and absent among men (rho = −0.08), which may dilute the overall coefficient, although this difference does not survive correction. (ii) Women scored lower than men on awareness, and fewer women agreed that gendered pricing is common in personal care (Q10), contrary to the expectation that the main buyers would notice the gap more. Occupational differences between the genders may play a part, but the sample cannot establish this and neither difference is reliable after Holm correction. (iii) Consumer response and policy support overlap heavily, so the instrument did not cleanly separate behavioural intention from support for policy. (iv) The lower consumer-response and policy-support scores of self-employed respondents are speculative and not statistically significant.

6. Conclusion

6.1 Summary of the research

This study examined the pink tax from a consumer perspective in India using an online survey of 96 adults. Four screened scales (Awareness of the price gap, Perceived Unfairness, Consumer Response and Policy Support; Cronbach's alpha 0.729, 0.799, 0.734 and 0.749) were analysed with descriptive statistics, non-parametric tests, correlations, regression and component analysis, with Holm correction for multiple testing.

6.2 Key conclusions

1. **Gender-based pricing is widely perceived and disapproved of, and consumers expect someone other than themselves to address it.** About 80 per cent have noticed price differences, 73 to 78 per cent see gendered pricing as a marketing-driven burden that reinforces stereotypes, and policy support is 76 to 83 per cent on each item.

2. **Awareness is not enough to produce a sense of unfairness, and a sense of unfairness is not enough to change purchasing.** H4 (rho = 0.161) and H6 (rho = 0.188) are not supported, whereas H5 is supported (rho = 0.364; Holm p = 0.002). The attitude-behaviour gap suggests that voluntary consumer switching is unlikely, alone, to remove gendered price gaps.

3. **Concern is widely shared.** Women and men, and respondents of different ages, education levels, occupations and incomes, hold similar views; apparent differences vanish after multiple-testing correction.

4. **Consumer response is the key correlate of policy support** (regression B = 0.417; odds ratio 5.18), but the two constructs overlap and the instrument needs refinement.

5. **Perception and price are separate questions.** The survey shows how gendered price differences are interpreted; whether women actually pay more for equivalent products, and how far product differentiation explains it, can be answered only by the matched-product price audit.

6.3 Contribution to the literature

The study contributes psychometrically screened multi-item scales for measuring pink-tax awareness, perceived unfairness, consumer response and policy support in the Indian context, and an empirical test of how these constructs relate. It adds evidence on the awareness-fairness-behaviour-policy chain, shows that fairness judgements are widely shared across gender and demographic groups, and uses the consumer-equity framework (price, informational and procedural equity) to link perceptions to remedies. It thereby complements price-based studies such as Panigrahi and Ansari (2025) and scanner-data studies such as Moshary et al. (2026) and Zhang and Zhang (2026) with consumer-side evidence.

6.4 Practical and policy implications

For consumers and educators: compare unit prices, package sizes and ingredients rather than relying on "for him" or "for her" labels, consider gender-neutral options of equal quality, and use the redress mechanisms of the

Consumer Protection Act, 2019 where information is withheld or misleading. Awareness programmes on unit pricing and gendered marketing, and price literacy in school and college curricula, should be paired with disclosure rules because campaigns alone are unlikely to change behaviour (76 per cent say campaigns would influence purchases).

For businesses: display unit prices clearly on male and female products and online listings (80 per cent of respondents want this), explain price differences in terms of formulation, size or materials, audit gendered product pairs regularly, consider unisex lines and gender-neutral marketing (76 per cent attribute gendered pricing to marketing), and include price fairness in brand-trust and responsibility reporting.

For policy-makers and regulators: introduce or strengthen unit-price and price-disclosure requirements for gender-labelled goods and services, building on the consumer's right to be informed about price under the Consumer Protection Act, 2019; empower consumer-protection and competition authorities to act on unjustified differences, including on online platforms and in personalised pricing; combine transparency measures with limits on gender-based price differentials (as in California and New York), recognising that bans alone leave room for differentiation; and keep monitoring taxes on menstrual hygiene products (83 per cent of respondents want reduction or removal).

6.5 Limitations

The results should be read with the following limitations. The sample of 96 is small, young and highly educated and was recruited through non-probability methods (convenience and snowball sampling), which risks selection bias and limits generalisation to the Indian population. About 40 per cent of respondents did not report income, constraining income comparisons. Responses are self-reported perceptions and intentions, which may be affected by recall and social-desirability bias and may overstate actual behaviour, and agreement was very high, producing ceiling effects. Scale reliability is probably somewhat optimistic because the scales were purified on the same responses for which reliability is reported, and needs confirmation in a new sample. Gender comparisons are exploratory because subgroups are small and gender is associated with occupation in the sample. Although multiple tests were corrected using Holm's procedure, some chance results cannot be excluded. The survey measures what consumers think about price differences and cannot establish whether the differences exist; online prices that vary with discounts and dynamic pricing, and the difficulty of matching male and female products, will also constrain the planned price audit. The study does not capture all forms of algorithmic or personalised pricing used by online platforms.

6.6 Scope for future research

- Conduct the matched-product price audit across online and offline channels to establish the prevalence and extent of the pink tax in India and to test H1 to H3.
- Replicate the survey with a larger, more diverse and probability-based sample with fuller gender and income information, and confirm the purified scales in new data.
- Refine the instrument, for example with seven-point scales and items of graded strength to reduce ceiling effects, and separate behavioural items from policy items.
- Use interviews or focus groups with consumers and retailers to understand the link between awareness and buying behaviour.
- Run experiments to test whether labelling, unit pricing or price information changes product choice.
- Examine how discounts, delivery charges and advertising exposure differ by gender online, and the role of service costs and indirect taxes.
- Undertake longitudinal evaluation of price-transparency and regulatory policies.

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