

# HAS GST REFORM REDUCED THE PURCHASING POWER OF CONSUMERS IN KERALA?

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**Abstract:** Goods and Service tax is a remarkable indirect tax reform introduced in India on 1st July, 2017. The reform offers certain benefits such as ease of doing business, easy tax compliance, better transparency, seamless input tax credit, etc. However, its impact on purchasing power of consumers is a matter of discussion among all the stakeholders. While tax rates of several products have increased with the implementation of GST, some other products have become more affordable to the consumers. As Kerala is a state with exceptional consumer behaviour, the study is an attempt to examine the impact of GST on purchasing power of consumers in Kerala. By comparing the VAT and GST rates of various categories of commodities and by using paired sample t-test, the study found that the implementation of GST has increased the tax rates as well as price of all the selected categories of products except apparel and footwear. Hence, the study concludes the purchasing power of Kerala consumers has adversely affected by GST reform at least to a small extent.

**Index Terms** - GST reform, indirect taxation, VAT rate, GST rate, purchasing power

## 1. INTRODUCTION

As we know, the economy of India is evolving continuously. The advent of GST system on 1<sup>st</sup> July 2017 has marked a remarkable shift in the indirect taxation framework of the country. It has replaced the former VAT system introduced since 2005. The GST system has introduced to simplify the indirect tax structure throughout the country by preventing the cascading effect. As the biggest indirect tax reform of the country, GST implementation has resulted a comprehensive implication across the economy of India. Several taxes, both central and state level, are subsumed into a single tax with the implementation of new reform. Moreover, the new system offered several benefits such as ease of doing business, easy tax compliance, better transparency, seamless input tax credit, etc. The main GST rate slabs are 5%, 12%, 18% and 28%. As a state which is known for its exceptional consumer behaviour, GST may result long run significant implications on the economy of Kerala.

## 2. GST AND VAT- AN OVERVIEW

GST is a destination-based uniform tax levied on the supply of goods and services. Though GST is implemented in our country based on the principle of destination, the matter of cross border trade still to be finalised (Keen 2009, Cnossen, 2010). It has been designed as a competent tax system with a broader tax base, rationalised tax structure, lower tax slabs and easy tax compliance procedures (Ernst and Young India, 2016). It is a single and consumption-based taxation implemented in India with effect from 1<sup>st</sup> July 2017. Before implementing GST, the indirect taxation system was administered mainly by state VAT system. Kerala had followed its own VAT system for taxation of goods and services within the state up to 30<sup>th</sup> June 2017. With the introduction of GST, most of the goods and services that were previously taxed under VAT were brought under the GST framework. However, the items such as petrol, diesel, etc. are still kept outside the purview of GST and hence they are taxed as per the old VAT regime. The major tax slabs under Kerala VAT regime are 1%, 2%, 4%, 12.5%, 13.5% and 14.5%. The key controversy is that while GST rates vary with regard to the

nature of products and services across the nation, the VAT rates of different states were different for the same products or services.

### 3. SIGNIFICANCE OF THE STUDY

The introduction of GST in India is a remarkable economic reform, aimed to promote the growth of our country. Though GST offers multi-faceted benefits to the economy, its impact on the purchasing power of consumers across the country is a key aspect that needs to be examined. One of the key aspects of GST is regarding the change in tax rates. While the introduction of GST reform increases the tax rates of many products and services, the tax rates of several other products are declined considerably. Also, there are several commodities whose tax rates are identical under VAT and GST regimes. As the changes in tax rates can influence the purchasing power of the consumers immensely, the results of the study can be greatly useful in designing policies to mitigate the negative implications of GST system.

### 4. STATEMENT OF THE PROBLEM

The implementation of GST system has opened ways to multi-faceted discussions regarding its impact on the purchasing power of consumers in several states of our country. Regarding Kerala, state VAT rates were ranging from 1% to 14.5% (excluding petrol and diesel). With the introduction of GST system, several essential and non-essential commodities are subject to GST rates ranging from 5% to 28%. This leads to an increase in the prices of several commodities of daily use. As Keralites were already practiced a higher cost of living, there is a big concern that the GST will reduce the purchasing power of consumers in Kerala. Though many people express their anxiety regarding higher rates, according to *The Hindu* (2017), the GST rates are not significantly higher than the State VAT rates of Kerala. The present study seeks to examine whether GST system has declined the purchasing power of consumers in Kerala by comparing the State VAT rates and GST rates applicable for several goods and services of varied categories.

### 5. OBJECTIVES OF THE STUDY

The primary objective of the study is to examine whether the GST reform has resulted in a significant decline in the purchasing power of Keralites. To achieve the primary objective of the study, following secondary objectives are also formulated:

1. To compare the Kerala VAT rates and GST rates of different products under varied categories.
2. To examine whether GST rates significantly differ from Kerala VAT rates for different categories of products.

### 6. HYPOTHESES OF THE STUDY

H0: There is no significant difference between the Kerala VAT rates and GST rates for varied categories of products.

### 7. RESEARCH METHODOLOGY

Since the study is an attempt to explore whether GST rates are higher than the Kerala VAT rates for different categories of goods and services, a quantitative research design is used. As it focuses on comparison of Kerala VAT rates and GST rates, the design is observational and non-experimental also. Secondary data gathered from government publications, online databases, research reports, etc. are used for the study. The data related to different categories of products such as (1) food and beverages, (2) personal care products, (3) household essentials, (4) electronic and home appliances, (5) apparel and footwear, and (6) baby care products are considered. Purposive sampling technique is used to select key products under the aforesaid categories. Paired t-test is used to test whether the GST rates are statistically and significantly higher than the Kerala VAT rates. Cohen's D-value is also used to examine the extent of effect the GST reform has put on each category of commodities.

## 8. ANALYSIS AND DISCUSSION:

## (a) Food and beverage items

Table 1

Sl. No.	Items	VAT Rate	GST Rate	Sl. No.	Items	VAT Rate	GST Rate
1	Fresh fruits	0	0	26	Packed snacks	14.5	12
2	Fresh vegetables	0	0	27	Pickles	14.5	12
3	Milk	0	0	28	Sauces	14.5	12
4	Honey	0	0	29	Bread and Cake	14.5	12
5	Eggs	0	0	30	Pastries	14.5	12
6	Tea leaves	5	0	31	Chocolates	14.5	18
7	Coffee beans	5	0	32	Ice cream	14.5	18
8	Cereals (unbranded)	0	0	33	Ready-to-eat meals (e.g., Pizza, Berger)	14.5	18
9	Fresh meat and fish	0	0	34	Cereals (Branded)	14.5	18
10	Salt	0	0	35	Instant noodles	14.5	18
11	Sugar	0	5	36	Energy drinks	14.5	18
12	Tea powder	5	5	37	Flavoured milk	14.5	18
13	Coffee powder	5	5	38	Yogurt	14.5	18
14	Packed paneer	14.5	5	39	Buttermilk	14.5	18
15	Spices	14.5	5	40	Canned juices	14.5	18
16	Jaggery	0	5	41	Aerated drinks (e.g., Cola, Lemonade)	14.5	28
17	Maida	5	5	42	Flavoured coffee	14.5	28
18	Aatta	0	5	43	Bottled water (with added flavour)	14.5	28
19	Rava	0	5	44	Soda water	14.5	28
20	Suji	0	5	45	Flavoured milkshake	14.5	28
21	Butter, Ghee, and Cheese	14.5	12	46	Chocolate-covered nuts or fruits	14.5	28
22	Processed food items	14.5	12	47	Protein powder	14.5	28
23	Fruit juice	14.5	12	48	Canned/bottled coffee drinks	14.5	28
24	Biscuits	14.5	12	49	Dietary supplements	14.5	28
25	Dried fruits and nuts	14.5	12	50	Smoothies	14.5	28

**Sources:** <https://cbic-gst.gov.in/gst-goods-services-rates.html>

<https://comtax.kerala.gov.in/>

<https://keralataxes.gov.in/home-en/>

The comparison of VAT and GST rates of products selected under food and beverage category shows that the items such as fresh fruits, vegetables, milk, honey, eggs, cereals (unbranded), fresh meat and fish, and salt have no tax under both VAT and GST. These are the essential commodities which are typically exempt from taxation so as to ensure the affordability. The items such as Tea leaves, coffee beans, packed paneer, spices, etc. have enjoyed a potential tax relief under GST regime compared to VAT regime. The higher GST rates for chocolates, ice cream, ready-to-eat meals, and many branded/processed items reflect the government's intention to impose higher tax on processed, non-essential or luxury items. Aerated drinks, flavoured coffee, etc are taxed at the highest GST rate of 28% compared to the 14.5% VAT, resulting in a significant 13.5% increase. This may be due to the intention of the government to discourage the consumption of such unhealthy items.

**H0-1: There is no significant difference between the Kerala VAT rates and GST rates for food and beverage products.**

**Table 2**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GST Rate	12.6000	50	9.93037	1.40437
	VAT Rate	9.78000	50	6.50052	.91931

**Table 3**

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	GST Rate & VAT Rate	50	.780	.000

**Table 4**

Paired Samples Test								
		Paired Differences						
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t-value	Sig. (two tailed)
					Lower	Upper		
Pair 1	GST Rate - VAT Rate	2.82000	6.33323	.89565	1.02012	4.61988	3.149	.003

**Table 5**

Effect Size (Cohen's D)				
Mean (GST Rate)	Mean (VAT Rate)	Difference	Std. Deviation of the difference	Cohen's D
12.6000	9.7800	2.8200	6.33323	0.44527

Regarding all the selected food and beverage items, the mean value of the difference between VAT rates and GST rates is 2.82 with a standard deviation of 6.33323. Since p-value is less than 0.005, the hypothesis is rejected. So, it may be concluded that the GST rates are statistically higher than the Kerala VAT rates regarding the selected food and beverage items. The Cohen's D-value of 0.44527 also states a statistically considerable difference between VAT and GST rates as the Cohen's D-value for small effect is 0.20. Further, the paired correlation analysis reveals a moderate relationship between VAT and GST rates.

#### (b) Personal care items

**Table 6**

Sl. No.	Items	VAT Rate	GST Rate	Sl. No.	Items	VAT Rate	GST Rate
1	Sindoor	14.5	0	26	Toothpowder	14.5	12
2	Kumkum	14.5	0	27	Mouthwash	14.5	12
3	Bindi (non-premium)	14.5	0	28	Lip balm	14.5	12
4	Haladi	0	0	29	Hand sanitiser	14.5	12
5	Chandan	0	0	30	Face wash	14.5	12
6	Mehndi	0	0	31	Shampoo (premium)	14.5	18



7	Kajal	14.5	0	32	Face cream	14.5	18
8	Alta	14.5	0	33	Deodorant	14.5	18
9	Attar	14.5	0	34	Perfumes	14.5	18
10	Essential oils for therapeutic use	14.5	0	35	Fragrances	14.5	18
11	Bindi (premium)	14.5	5	36	Skincare creams	14.5	18
12	Hair clips	14.5	5	37	Anti-ageing cream	14.5	18
13	Hair bands	14.5	5	38	Sunscreen lotion	14.5	18
14	Bobby pins	14.5	5	39	After shave lotion	14.5	18
15	Nail clippers	14.5	5	40	Conditioner	14.5	18
16	Earbuds	14.5	5	41	Luxury cosmetics	14.5	28
17	Cotton buds	14.5	5	42	High-end skin care products	14.5	28
18	Makeup brushes	14.5	5	43	Premium fragrances	14.5	28
19	Makeup sponges	14.5	5	44	Makeup kits	14.5	28
20	False eyelashes	14.5	5	45	Luxury hair care products	14.5	28
21	Toothpaste	14.5	12	46	Professional makeup products	14.5	28
22	Toothbrush	14.5	12	47	Nail polish	14.5	28
23	Hair oil	14.5	12	48	Hair colour products	14.5	28
24	Shampoo (non-premium)	14.5	12	49	Hair straightening products	14.5	28
25	Soap (non-premium)	14.5	12	50	Luxury grooming products	14.5	28

**Sources:** <https://cbic-gst.gov.in/gst-goods-services-rates.html>

<https://comtax.kerala.gov.in/>

<https://keralataxes.gov.in/home-en/>

The implementation of GST has given complete tax exemption to the items such as Sindoor, Kumkum, Bindi (non-premium), Haldi, Chandan, Mehndi, etc., recognising their cultural and traditional significance. They were taxed at 14.5% under VAT regime. Tax rate of everyday grooming products like, hair clips, hair bands, makeup brushes, earbuds, premium Bindi, nail clippers and bobby pins are reduced from 14.5% VAT rate to 5% GST rate to make them more affordable. The hygiene items like hand sanitizer, toothbrush, toothpaste, mouthwash, face wash, hair oil, and non-premium shampoo/soap experienced a slight reduction in taxation from 14.5% to 12% which make the basic personal care items more accessible to consumers. By realising their discretionary nature, the products such as perfumes, face cream, premium shampoos, sunscreen and deodorant are the tax rates have slightly increased compared to VAT regime. The luxury items such as professional makeup kits, hair straightening products, luxury cosmetics, nail polish and premium fragrance are taxed at higher GST rate of 28%. They were taxed at 14.5% during VAT regime.

**H0-2: There is no significant difference between the Kerala VAT rates and GST rates for personal care products.**

**Table 7**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GST Rate	12.6000	50	9.93037	1.40437
	VAT Rate	13.6300	50	3.47852	.49194

**Table 8**

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	GST Rate & VAT Rate	50	.324	.022

Table 9

Paired Samples Test									
Paired Differences									
Pair	GST	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t- value	df	Sig. (two tailed)
					Lower	Upper			
1	Rate - VAT Rate	-1.03000	9.39898	1.32922	-3.70116	1.64116	-.775	49	.442

Table 10

Effect Size (Cohen's D)				
Mean (GST Rate)	Mean (VAT Rate)	Difference	Std. Deviation of the difference	Cohen's D
12.6000	13.6300	-1.0300	9.39898	-9.12522

Table 9 shows a mean value of the difference between VAT and GST rates of -1.03 with standard deviation of 1.32922. Since, the significant value (0.442) is more than 0.05, it is failed to reject the null hypothesis. Further, the paired sample correlation value (0.324) is too small. Above all, zero lies between the 95% confidence intervals of the difference between the mean rates of GST and VAT. Regarding these statistical facts, we may conclude that the difference between VAT rates and GST rates are statistically not significant for personal care products.

### (c) Household essentials

Table 11

Sl. No	Item	VAT Rate	GST Rate	Sl. No.	Item	VAT Rate	GST Rate
1	Detergent powder	14.5	12	10	Polishes	14.5	18
2	Washing soap	14.5	12	11	Sanitisers	14.5	18
3	Toilet cleaner	14.5	12	12	Deodorisers	14.5	18
4	Mops	14.5	12	13	High-end air purifier	14.5	28
5	Glass cleaner	14.5	12	14	Premium vacuum cleaner	14.5	28
6	Brooms and dustpans	14.5	12	15	Luxury fragrance for homes	14.5	28
7	Air freshener	14.5	18	16	Automated cleaning system	14.5	28
8	Insecticides	14.5	18	17	Luxury home cleaning products	14.5	28
9	Repellents	14.5	18	18	High-end insect repellent system	14.5	28

**Sources:** <https://cbic-gst.gov.in/gst-goods-services-rates.html>

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<https://keralataxes.gov.in/home-en/>

The introduction of GST system reduced slightly the tax rates for household essentials of daily use such as detergent powder, washing soap, glass cleaner, etc. (by 2.5%), to make them more affordable to the consumers. This reveals the intention of the government to reduce the financial burden on these basic household things. Regarding the standard goods such as air freshener, polishes, insecticides, deodorisers, etc., the tax rate has increased by 3.5% as they are not common household items like the basic necessities and also, they have discretionary nature. This will result slight increase in the cost for consumers. The premium category items like luxury fragrance, premium vacuum cleaner, luxury air purifier, etc., are placed at the highest tax slab as they are non-essential household items and this affect the purchasing capacity of consumers greatly.

**H0-3: There is no significant difference between the Kerala VAT rates and GST rates for household essentials****Table 12**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GST Rate	19.3333	18	6.79100	1.60065
	VAT Rate	14.5000	18	.00000	.00000

**Table 13**

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	GST Rate & VAT Rate	18	.	.

**Table 14**

Paired Samples Test									
		Paired Differences					t-value	df	Sig. (two tailed)
Pair	GST	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
1	Rate - VAT Rate	4.83333	6.79100	1.60065	1.45625	8.21042	3.020	17	.008

**Table 15**

Effect Size (Cohen's D)				
Mean (GST Rate)	Mean (VAT Rate)	Difference	Std. Deviation of the difference	Cohen's D
19.3333	14.5000	4.8333	6.7910	0.711721

Table 14 shows that the mean value of the difference between VAT rates and GST rates is 4.83333 with standard deviation of 6.791. The 95% confidence intervals of the difference are 1.45625 and 8.21042 for the lower and upper limits respectively. The p-value is 0.008. Since, the significant value is less than 0.05, the null hypothesis is rejected. Therefore, it may be concluded that the difference between Kerala VAT rates and GST rates for the household commodities is statistically significant. The Cohen's D value of 0.711721 also states nearly a large effect size.

**(d) Electronics and home appliances****Table 16**

Sl. No.	Items	VAT Rate	GST Rate	Sl. No.	Items	VAT Rate	GST Rate
1	Computers	5	12	10	Refrigerators	14.5	18
2	Printers	14.5	12	11	Washing machines	14.5	18
3	Scanners	14.5	12	12	Air conditioners	14.5	18
4	Monitors (Up to 24 inches)	14.5	12	13	TV (above 27 inches)	14.5	28
5	Fans	14.5	12	14	High-end smartphones	14.5	28
6	Lamps	14.5	12	15	High-end laptops	14.5	28
7	Smartphones	14.5	18	16	High-end refrigerators	14.5	28
8	Laptops and Tablets	5	18	17	High-end washing machines	14.5	28
9	TV (up to 27 inches)	14.5	18	18	High-end air conditioners	14.5	28

**Sources:** <https://cbic-gst.gov.in/gst-goods-services-rates.html>

<https://comtax.kerala.gov.in/>

<https://keralataxes.gov.in/home-en/>

The tax rate for computers has highly increased from 5% VAT rate to 12% GST rate. This can lead to a significant increase in the costs for consumers. However, the slight decrease in the tax rates for scanners, monitors, printers, fans, lamps, etc., from 14.5 % VAT rate to 12 % GST rate can offer a small reduction in prices of such commodities. The rates of washing machine, refrigerators, air-conditioners, etc. uniformly enhanced to 18% as they are non-basic items. Since these appliances are widely used in urban households, the urban consumers may be impacted significantly. The increase of tax rate for laptops and tablets from 5% VAT slab to 18% GST slab may impact the affordability, mainly for professionals and students. Further, the middle-income consumers may be potentially affected by the increase of tax rate of smartphones from 14.5% VAT slab to 18% GST slab. For premium and luxury commodities, the GST rate has doubled compared to earlier VAT regime. This reflects the government policy of making the basic models more affordable while luxury variants attract higher tax rates.

#### **H0-4: There is no significant difference between the Kerala VAT rates and GST rates for electronics and home appliances**

**Table 17**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GST Rate	19.3333	18	6.79100	1.60065
	VAT Rate	13.4444	18	3.07212	.72411

**Table 18**

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	GST Rate & VAT Rate	18	.232	.354



Table 19

Paired Samples Test									
Paired Differences									
Pair	GST Rate	Mean	Std. Deviation	Std. Error Mean	95% Confidence		t- value	df	Sig. (two- tailed)
					Interval of the				
					Lower	Upper			
1	- VAT Rate	5.88889	6.77269	1.59634	2.52091	9.25687	3.689	17	.002

Table 20

Effect Size (Cohen's D)				
Mean (GST Rate)	Mean (VAT Rate)	Difference	Std. Deviation of the difference	Cohen's D
19.3333	13.4444	5.8889	6.77269	0.86951

Table 19 reveals an average difference of 5.88889 between VAT and GST rates with a standard deviation of 6.77269. The 95% confidence limits of the difference are 2.52091 and 9.25687 respectively for lower and upper limits, and the t-value is 3.689. Since the significant value (0.002) is less than 0.05, the null hypothesis is rejected. Hence, we may conclude that the difference between Kerala VAT rates and GST rates for electronics and home appliances is statistically significant. Further, Cohen's D value of 0.86951 proves a large effect regarding the difference between VAT and GST rates. In nutshell, we can assert that the GST rates are significantly higher compared to the tax rates that prevailed during VAT regime with regard to the electronics and home appliances.

#### (e) Apparel and footwear

Table 21

Sl. No.	Items	VAT Rate	GST Rate	Sl. No.	Items	VAT Rate	GST Rate
1	Unbranded fabrics	5	5	13	Kurtas (unbranded and non-premium)	5	12
2	Unprocessed fabrics	5	5	14	Lungis (unbranded and non-premium)	5	12
3	Embroidery floss	5	5	15	Towels	5	12
4	Lace	5	5	16	Bed sheets and Pillow covers	5	12
5	Ribbons	5	5	17	Branded apparel (Shirts, pants, etc)	14.5	18
6	Handloom products	0	5	18	Branded footwears	14.5	18
7	Unstitched cloth	5	5	19	Leather bags	14.5	18
8	Yarn	5	5	20	Leather belts	14.5	18
9	Unbranded apparel (Shirts, pants, etc)	5	12	21	Leather wallets	14.5	18
10	Unbranded footwear	5	12	22	Branded textiles	14.5	18
11	Saris (unbranded and non-premium)	5	12	23	Branded clothing for infants	14.5	18
12	Dhotis (unbranded and non-premium)	5	12	24	Branded sportswear	14.5	18

**Sources:** <https://cbic-gst.gov.in/gst-goods-services-rates.html>

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<https://keralataxes.gov.in/home-en/>

For many basic items of apparels, like unbranded fabrics, ribbons, unprocessed fabrics, unstitched cloth, embroidery floss, yarn, etc., the VAT rate and GST rate is the same at 5 %. Since 5% GST rate is newly introduced for the handloom products, the purchasing power of consumers of handloom sector may be negatively impacted potentially. The tax rate for the handloom products during VAT regime was zero. The shift from 5% VAT rate to 12% GST rate for the unbranded apparel, footwear, towels, kurtas, saris, pillow cover, bed sheets, etc. could also bring a drastic change in the affordability of consumers of a wider base. Similarly, the tax hike in branded apparel and accessories from 14.5% VAT to 18% GST may also affect the affordability of consumers of higher sections of the society. This may result many consumers to choose the unbranded apparel due to price sensitivity.

**H0-5: There is no significant difference between the Kerala VAT rates and GST rates for apparel and footwear**

Table 22

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GST Rate	11.6667	24	5.42672	1.10772
	VAT Rate	7.9583	24	4.83177	.98628

Table 23

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	GST Rate & VAT Rate	24	.853	.000

Table 24

Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t-value	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	GST Rate - VAT Rate	3.70833	2.83578	.57885	2.51089	4.90578	6.406	23	.000

Table 25

Effect Size (Cohen's D)				
Mean (GST Rate)	Mean (VAT Rate)	Difference	Std. Deviation of the difference	Cohen's D
11.6667	7.9583	3.70833	2.83578	1.30769

Table 24 shows a mean difference of 3.70833 between VAT rates and GST rates with a standard deviation of 0.57885. The 95% confidence interval of the difference is 2.51089 for lower limit and 4.90578 for upper limit. The t-value is 6.406. Since the significant value is less than 0.05, the null hypothesis is rejected. The Cohen's

D-value also confirm a statistically significant difference. So, it may be concluded that the difference between VAT rates and GST rates of apparel and footwear items is statistically significant.

#### (f) Baby care products

**Table 26**

Sl. No.	Items	VAT Rate	GST Rate	Sl. No.	Items	VAT Rate	GST Rate
1	Human milk substitutes	5	0	15	Baby walkers	14.5	18
2	Baby food (e.g., Cerelac)	5	0	16	Baby swings	14.5	18
3	Baby nutrition supplements	5	0	17	Feeding bottles	14.5	18
4	Baby soaps	14.5	12	18	Baby food makers	14.5	18
5	Baby powder	14.5	12	19	Baby food storage containers	14.5	18
6	Baby creams	14.5	12	20	Luxury strollers	14.5	28
7	Baby toothbrush	14.5	12	21	High-end baby monitors	14.5	28
8	Baby shampoo	14.5	12	22	Premium baby carriers	14.5	28
9	Diapers	14.5	12	23	Luxury baby furniture	14.5	28
10	Baby wipes	14.5	12	24	Advanced baby safety products	14.5	28
11	Nursing pads	14.5	12	25	Luxury baby beddings	14.5	28
12	Baby monitors	14.5	18	26	High-end baby bathtubs	14.5	28
13	Baby carriers	14.5	18	27	Luxury baby feeding products	14.5	28
14	Baby gyms	14.5	18				

**Sources:** <https://cbic-gst.gov.in/gst-goods-services-rates.html>

<https://comtax.kerala.gov.in/>

<https://keralataxes.gov.in/home-en/>

The baby care products such as human milk substitutes, baby food, nutrition supplements, etc. are categorised as essential items under GST and have exempted to prioritise affordability for essential nutrition products for infants. Earlier, they were taxed at 5% VAT. For the commonly used baby care products such as baby powder, baby shampoos, baby soaps, creams, diapers, etc., the tax rate has been reduced from 14.5% VAT to 12% GST to make them more affordable for parents. For baby equipment and accessories such as carriers, swings, monitors, food makers, etc., the tax rate has been increased from 14.5% VAT to 18% GST. This might affect the purchasing power of consumers adversely. The tax rate of luxury and high-end products such as premium carriers, luxury strollers, luxury furniture, etc. is significantly increased to 28%. The tax rate for these items during VAT regime was 14.5%.

**H0-6: There is no significant difference between the Kerala VAT rates and GST rates for baby care products**

**Table 27**

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GST Rate	17.1852	27	8.86235	1.70556
	VAT Rate	13.4444	27	3.04243	.58552

Table 28

Paired Samples Correlations				
Pair 1	GST Rate & VAT Rate	N	Correlation	Sig.
		27	.699	.000

Table 29

Paired Samples Test									
		Paired Differences					t-value	df	Sig. (two tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	GST Rate - VAT Rate	3.74074	7.07973	1.36249	.94009	6.54139	2.746	26	.011

Table 30

Effect Size (Cohen's D)				
Mean (GST Rate)	Mean (VAT Rate)	Difference	Std. Deviation of the difference	Cohen's D
17.1852	13.4444	3.74074	7.07973	0.52837

Since the difference between the mean values of VAT and GST rates is 3.74074 with a standard deviation of 7.07973, the significant value is 0.011, which is much below 0.05. Further, zero doesn't lie between the 95% confidence intervals of the difference between VAT and GST rates. Above all, the Cohen's D - value of 0.52837 confirms a moderate effect. So, we can conclude that the difference between Kerala VAT rates and GST rates regarding baby care products is statistically significant and GST rates are higher than the VAT rates.

## 9. Conclusion

Regarding the varied categories of products considered for the study such as food and beverage items, personal care commodities, household essentials, electronics and home appliances, apparel and footwear, and baby care products; the difference between VAT and GST rates is statistically significant for all categories except for apparel and footwear category. The changes in tax rates from VAT regime to GST regime seem to favour the affordability of essential and semi-essential goods. But luxury and non-essential items are taxed at higher rates. Though this structure supports purchasing power for day-to-day essentials, it may constrain spending on premium or non-essential products. Based on the overall analysis, we may conclude that the implementation of GST has reduced the purchasing power of consumers of Kerala at least to a small extent.

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