

Dishwasher Market

Section: 8

Group Number: 19

Microeconomics Project: Final Report

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Market

The founder of the dishwasher Josephine Garis Cochran founded a company to manufacture the dishwasher, which was called KitchenAid [\[1\]](#). Today, there are several companies manufacturing and selling dishwashers in India. Here's a comparison of prices: [\[2\]](#) [\[3\]](#) [\[4\]](#) [\[5\]](#)

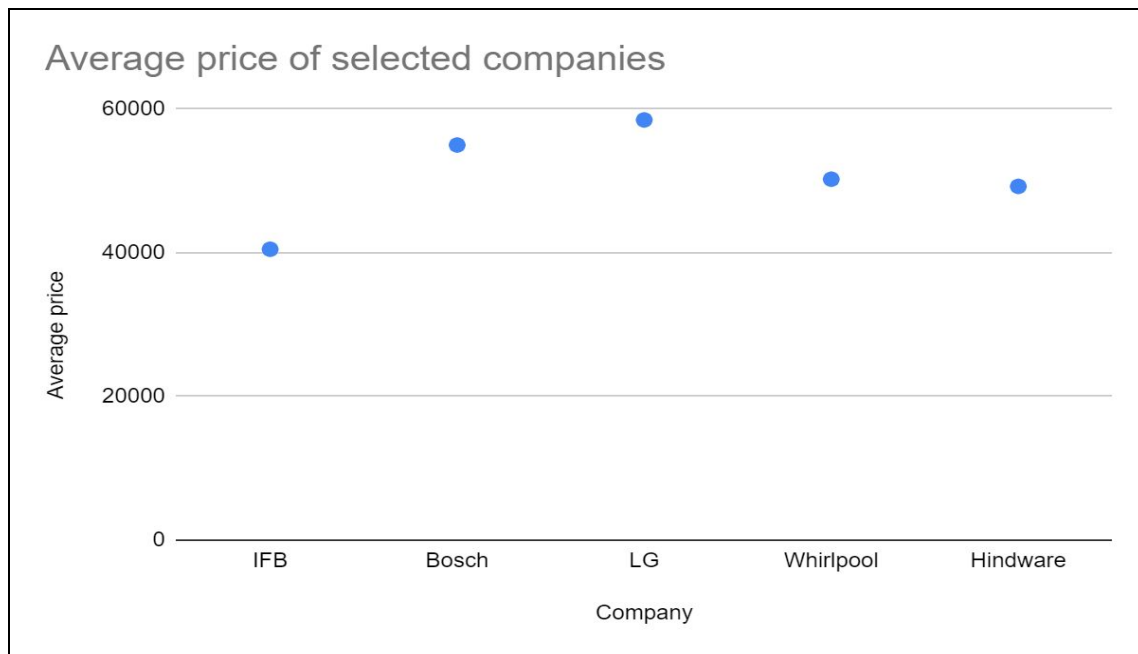


Figure1: Price of a dishwasher across companies. Created using Google Docs.

The graph shows that all prices are more or less the same. The average prices do not reveal anything about one company being dominant over another. Considering the market shares, it is reported that Bosch-Siemens together enjoy 50-60% of the market share of dishwashers [\[6\]](#). However, the list of best selling and most favorable products is quite varied, it includes products from Bosch-Siemens, LG, IFB etc [\[7\]](#) [\[8\]](#)

All this leads us to conclude that:

- There are more than one firms
- The prices are almost the same, hence it seems no firm has control over it.
- But their products are not exactly similar, they are differentiated and enjoy different consumer attention

There is little information available about the production cost of a dishwasher, hence the profit margin cannot be determined. From the available information, it can be inferred that the market is *monopolistic competition*. Here, though there are several firms, one firm has more hold than others.

Overview of Indian Market



Figure2: Reference: <https://www.openpr.com/news/1762134/india-dishwasher-market-2018-2024.html>

Demand

Before lockdown

1. Demand Overview

The major demand of dishwashers has always been from restaurants and hotels. The houses which can afford to buy a dishwasher can also afford to have a servant, especially in India.

When a maid can be easily hired to do the job, what's the need of a dishwasher? Maids can do the hard scouring to remove all the hard stains. "A dishwasher wouldn't wish me 'Eid Mubarak' or 'Happy Diwali'," wrote Shobhaa De in a tribute to her maid in the Times of India (ToI) in 2002. "A dishwasher wouldn't provide me with a sane, practical commentary on current affairs first thing in the morning." Due to such Indian mentality and less awareness, there was a very low demand for dishwashers. But recently due to the redevelopments and modernization, it's easy to have a dishwasher in the kitchen, fewer people have servants these days as the dirty dishes may pile up which is unhygienic. This led to some increase in the demands of dishwashers.^[9]

2. WTP

We could observe that a dishwasher was considered as a luxury, there were fewer consumers and the WTP was less than the actual price. As there was fewer demand, consumer surplus was negative which indirectly means that most consumers did not want to buy the product.

3. Elasticity of Demand

Dishwasher being a luxury good, the demand wasn't much. Hence, we could deduce that the demand was elastic.

During and After Lockdown

1. Demand overview

COVID-19 accelerated the demand which was created by a sense of personal hygiene. Due to lockdown, the house-work had to be done all alone which led to much increase in demand of dishwashers. So the primary option of hiring a domestic help was gone because of the social distancing norms. This increased the burden on the household and people's dislike for washing dishes, led to increased demand for dishwashers.

The demands went so high that:

- BSH Household Appliances went out of stock and are importing 30k units from Turkey. The company met its monthly target in week.^[9]
- 400-500% increase in demand was noted in LG Company.
- Bosch distributor, says, "Dishwasher sales have seen a healthy increase. While we sold around 20 dishwashers monthly before the lockdown, the quantity has doubled to more than 40 post the lockdown."^[6]

Graph given below depicts take off in dishwashers' sales in India

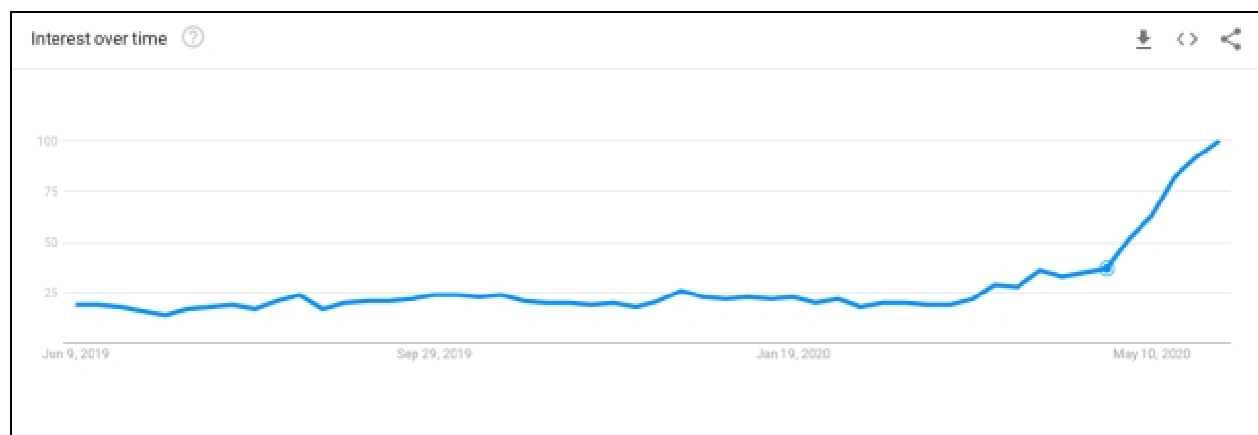


Figure3: Reference :

<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.afags.com%2Fnews%2Fmktg%2Fwill-dishwasher-sales-finally-take-off-in-india&psig=AOvVaw0oWED9K-CH2dH->

2. WTP

Dishwasher has become a necessity for many as the house-work is to be done by self. There was also a shortage of goods but the demand was rising. In such a scenario, the WTP will be high and so the consumer surplus must be positive.

3. Elasticity

Dishwashers became a necessity good for a lot of people which led to a drastic increase in demand as explained above. We could deduce that the demand becomes inelastic.

Demand Analysis

The Chart below depicts the demand share by Households and Commercial Sector.

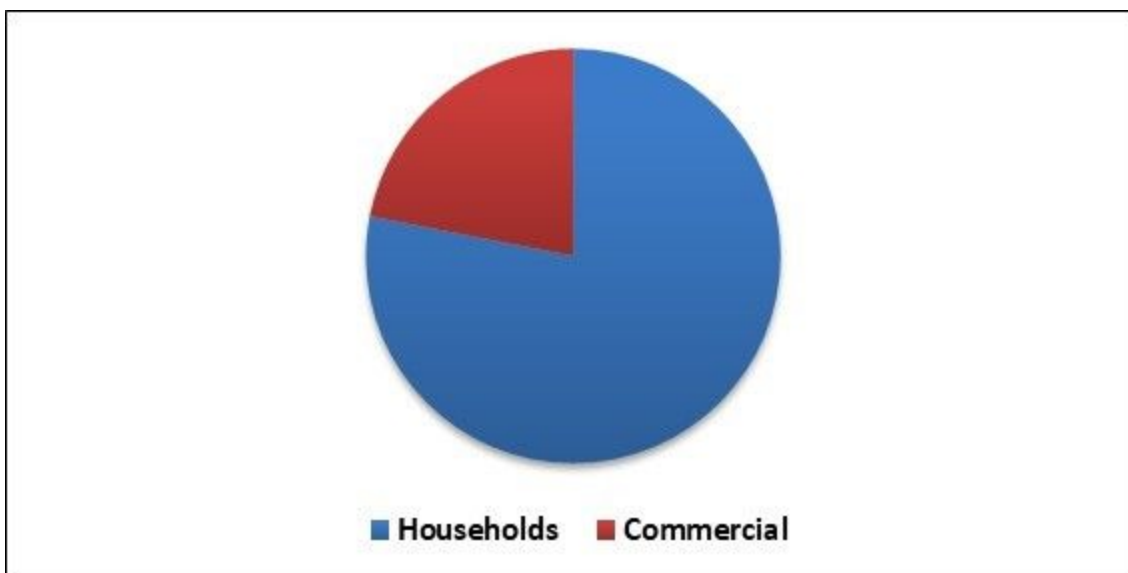


Figure4: Reference: <https://www.kbvresearch.com/smart-dishwasher-market/>

The demand graph derived from WTP obtained from Google form survey is as shown below. As data collected was limited to 20 people and various random values (even less than the actual price) across the range of ₹ 20,000 to ₹ 32,000 were entered by people (some entered very high WTP or very low WTP)

, the demand curve obtained is not perfectly straight with downward sloping .There are changes at the higher and lower price points.The middle portion seems to satisfy the condition of the demand curve.

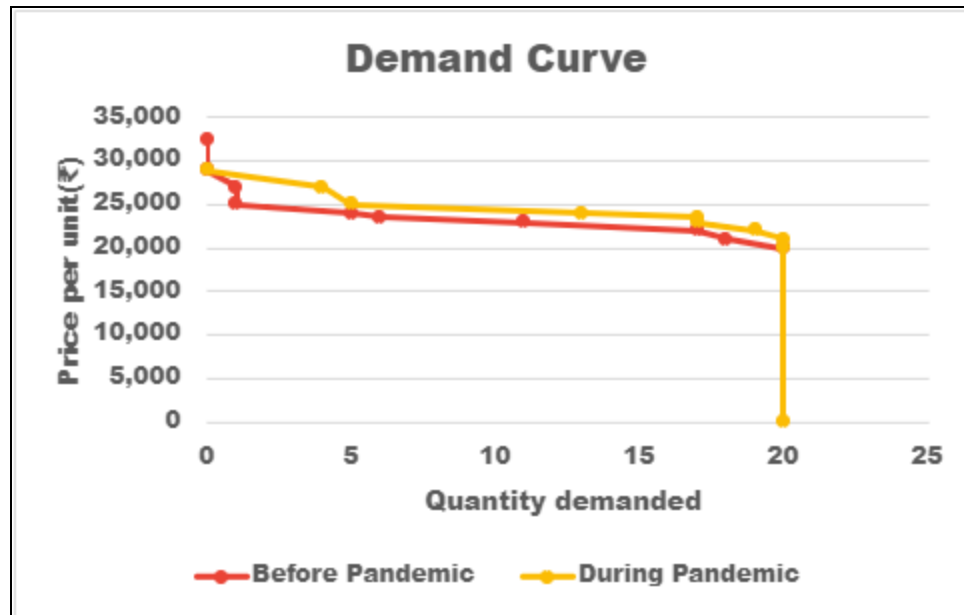


Figure5: Reference: Google form data analysis

The demand curve shifts right during the pandemic which shows that the demand increased during the pandemic and there was a rise in WTP. As per data analysis, for a product of ₹23,000 the lowest WTP was ₹ 20,000 and highest was ₹ 28,000 before the pandemic. While during the pandemic the lowest WTP was ₹ 22,250 and highest was ₹ 32,000.

Supply

Before lockdown

1. Supply Overview

As evident, the supply before lockdown was lower compared to other luxury goods like Air conditioners and washing machines. Around 50,000 units were sold every year and some quantity was imported from various countries as shown in the graph below.

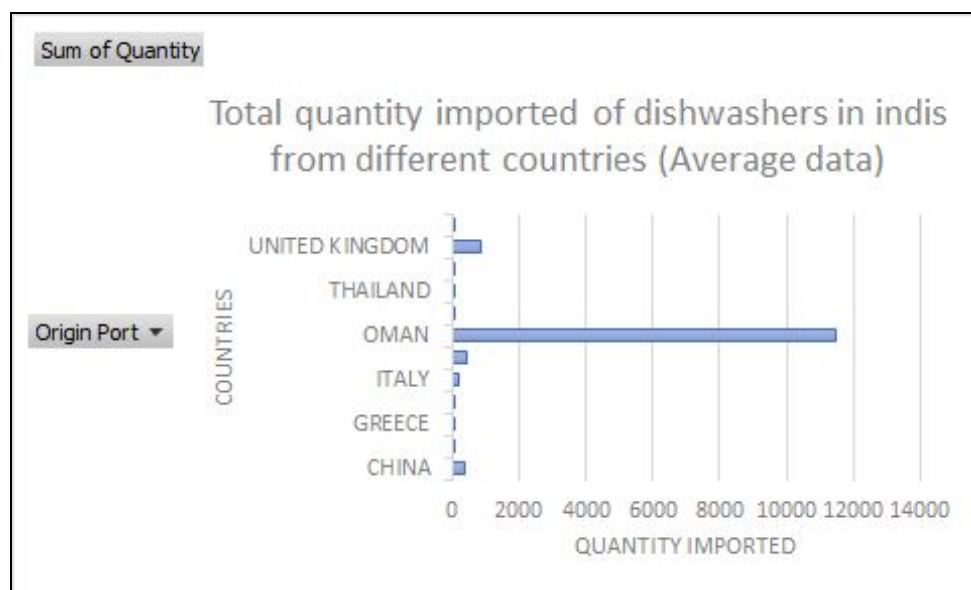


Figure6: Reference: <https://connect2india.com/global/Dishwasher-import-to-india/1>

2. Elasticity of Supply

The demand for dishwashers was less, due to which there were sufficient stocks available and hence the supply was elastic.

During and After Lockdown

1. Supply Overview

During the lockdown the government had shut down production and import/export. So there were few units left and no new supply had arrived for the few months of lockdown. Due to this demand for Dishwashers increased significantly. Dishwasher brands like Voltas Beko, BSH Home, LG witnessed a surge in demand for their products compared to last year. In March 2020 Dishwasher sales of LG increased 400- 500 percent up from the last year. And all social media and online shopping services faced depletion in stock of dishwashers. In metro cities large brands were able to sell around 3000 units of dishwashers post lockdown which was double of Diwali sales. This is an indicator of shortage in supply. [\[10\]](#)

According to industry sources, Companies expect that if current demand continues till end of 2020 then almost 100000 dishwashers would be sold in a year which would be 100 percent growth over the previous year. [\[11\]](#)

2. Elasticity of Supply

The demand of dishwashers was high, due to which there was shortage in stocks and hence supply was inelastic.

Producers/Suppliers

- The major suppliers of dishwashers in India are: [\[12\]](#)
 - BOSCH
 - Voltas Beko
 - LG
 - Whirlpool
 - Siemens
 - BPL
 - Faber

- There are approximately 50 major suppliers and 5 major exporters of Dishwashers in India. [\[13\]](#) [\[14\]](#)
- India Exports mainly to Srilanka, UAE, Nepal, Germany. [\[15\]](#)
- India imports mainly from Oman, China, Greece and the United Kingdom. [\[16\]](#)

Raw Materials and Taxes

The raw materials for the dishwasher are steel and plastic. [\[17\]](#) Both experienced a dip in demand during lockdown. [\[18\]](#) According to the law of demand, dishwasher prices would either decrease or stay the same. This makes it easy for dishwasher brands to manufacture more to meet the increasing demand.

Dishwasher, being a luxury good, falls under the fourth slab of GST and hence attracts 28% tax on it. [\[19\]](#)

Welfare Analysis

Before lockdown

1. Consumer Surplus

Consumers in India mostly preferred maid services due to which the demand for dishwashers was less and WTP of people was also very less which led to low Consumer Surplus.

2. Producer Surplus

Dishwashers were not in much demand and sufficient supply was available which led to low producer surplus.

During and After Lockdown

1. Consumer Surplus

People preferred to buy Dishwasher instead of using maid services due to safety concerns. Due to high demand and less supply in comparison, there was more WTP during the pandemic as compared to WTP before the pandemic which led to a rise in consumer surplus.

2. Producer Surplus

During the pandemic, the demand for dishwashers went high due to safety concerns which led to increase in producer surplus but on the other hand restrictions on import of Dishwashers (most of sell in india is due to imported Dishwashers) led to decrease in supply and decrease in producer surplus.

As we don't know which effect dominated we can say that producer surplus was ambiguous. [\[6\]](#)

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