

INTRODUCTION

1.1. Introduction

In the present day competitive market, the design of the right pricing policy is becoming more and more important and is also a very challenging task. Pricing policy has an impact on demand. Wherever such an effect is encountered, it is said to happen due to price sensitivity or demand-price elasticity. In other words, higher is the factor of price elasticity more will be the sensitiveness of price in causing an increase or decrease in the demand. The demand for most of the commonly used goods, such as fast-moving consumer goods (FMCGs), is price-sensitive and is governed by the Law of Demand (Marshall, 1898). According to this law, price and demand have an inverse relationship. In literature, two types of price-demand relationship have been widely used by the researchers. Some authors (Chen and Chen, 2007; Kim et al. 2011; Zanoni et al., 2014; Bhunia and Shaikh, 2015; Panda et al., 2015) have considered the demand to be the linear function of the price. While others (Mukhopadhyay et al., 2004; Soni and Patel, 2013; Soni and Joshi, 2013; Chang et al., 2015; Chung et al., 2015; Dye and Yang, 2016) have taken it to be a power function of the price. Apart from the price, the demand has also been taken to depend upon inventory level (Panda et al., 2012; Chung and Cárdenas-Barrón, 2013; Ghiami et al., 2013; Zhang et al., 2015; Chakraborty et al., 2015; Li et al., 2017), quality (Seifbarghy et al., 2015; Maiti and Giri, 2015), credit period (Giri and Maiti, 2013; Guchhait et al., 2014), frequency of advertisement (Pal et al., 2006), and income (Dahlström and Åsberg, 2009) etc. However, the available literature is dominated by the work considering the inverse price-demand relationship. There are other class of items where this general inverse relationship is not applicable (Veblen, 1899; Landi, 2013). Thus, the determination of the right pricing policy for such items becomes a very

challenging task when it has an impact on demand (Li and Teng, 2018). It will be evident from the following elaborations.

Possession of exclusive or expensive items has been the way to impress others to earn a special status in society, and it is achieved by emulating the higher class people (Camcastle, 2008). The desire for social status and exclusiveness motivates the elite class people to consume luxury goods conspicuously. Display of social status through such possession is a common trait of people of the elite class. The behaviour of conspicuous consumption and psychology of such class of people was first discussed by the American economist Veblen (1899) in his book '*The theory of the leisure class*' based on his study and observations. He narrated conspicuous consumption in terms of consuming of luxury clothing, possession of luxury vehicles, consuming superior quality wine, etc. According to him, even spending leisure time luxuriously is a way of displaying social status. The motivation to consume conspicuously comes from the desire for prestige and social identity. Though the luxury goods may not have much of utility value, mere possession of these is believed to earn status in the society. In old days, possession of a large number of slaves was also considered as a matter of pride and was a sign of being rich.

The conspicuous consumption is seen to grow with the increase in the price of luxury goods. Goods with such characteristics are called as Veblen products. Leibenstein (1950) was first to suggest to incorporate socio-economic behaviour, responsible for conspicuous consumption, in the consumer demand theory. The consumption patterns were described by three distinct and different price-demand curves incorporating the Veblen effect in demand.

According to Leibenstein (1950), the existence of conspicuous demand for luxury products was formally established by Veblen (1899). In the old days, possession of a

large number of slaves was considered as the status symbol. The people also used to spend lavishly on food, clothing, and housing in order to display their conspicuous consumption (Veblen, 1899). According to his theory, the demand for such products, also named Veblen products, is not out of need but to cater to the ego and esteem of elite and wealthy people. These persons exhibit their social status irrespective of their culture by the possession of wealth and luxury items. Such an effect on consumption due to the price of luxury goods alone (inherent to the product) was termed as 'Veblen effect' by Leibenstein (1950). Other two effects (not inherent to the product) found by him are (i) Bandwagon effect and (ii) Snob effect. In the case of the bandwagon effect, the demand for an item increases when the persons are influenced by the increased consumption of the same by the people around them. This behaviour is the result of getting influenced due to peer pressure. Under the snob effect, opposite of the bandwagon effect, a person will purchase an item not consumed by the people around him. This behaviour is seen mostly with the people who would like to have "exclusive" possession of the item (Leibenstein, 1950, Tian et al., 2001). In all the above scenarios, the demand is not because of the real need, but merely for the belief to gain high social status by doing so. Other factors that influence this kind of conspicuous consumption are the socio-economic condition of consumers (Chaudhuri and Majumdar, 2006), their psychological framework (Kastanakis and Balabanis, 2012), culture (Caserta and Murphy, 2008), and desire for uniqueness (Amaldoss and Jain, 2005). The notion of luxury is specific to the population segment and will not necessarily be the same for low-income and high-income group people (Bagwell and Bernheim, 1996).

The presence of the Veblen effect is not necessarily limited to the demand for luxury products. Veblen effect has been found to be present in the educational sector (Campos, 2017) and Housing sector (Lee and Mori, 2013). Campos (2017), an American

researcher, found this effect present in applications falling for university admission. He analyzed the relationship of the total number of applications falling for admission in University of Colorado Law School with the corresponding tuition fee for the years 1995 to 2012. He found that, with the increase in tuition fee, there was generally an increase in the percentage of the applications received even though the total number of applications for all the law schools continuously decreased after 2004. The data showed that potential demand for admission in the University of Colorado Law School increased even after the heavy increase in tuition fee. Veblen effect of tuition fee on the percentage of applications falling in the University of Colorado Law School is shown in Fig. 1.1.

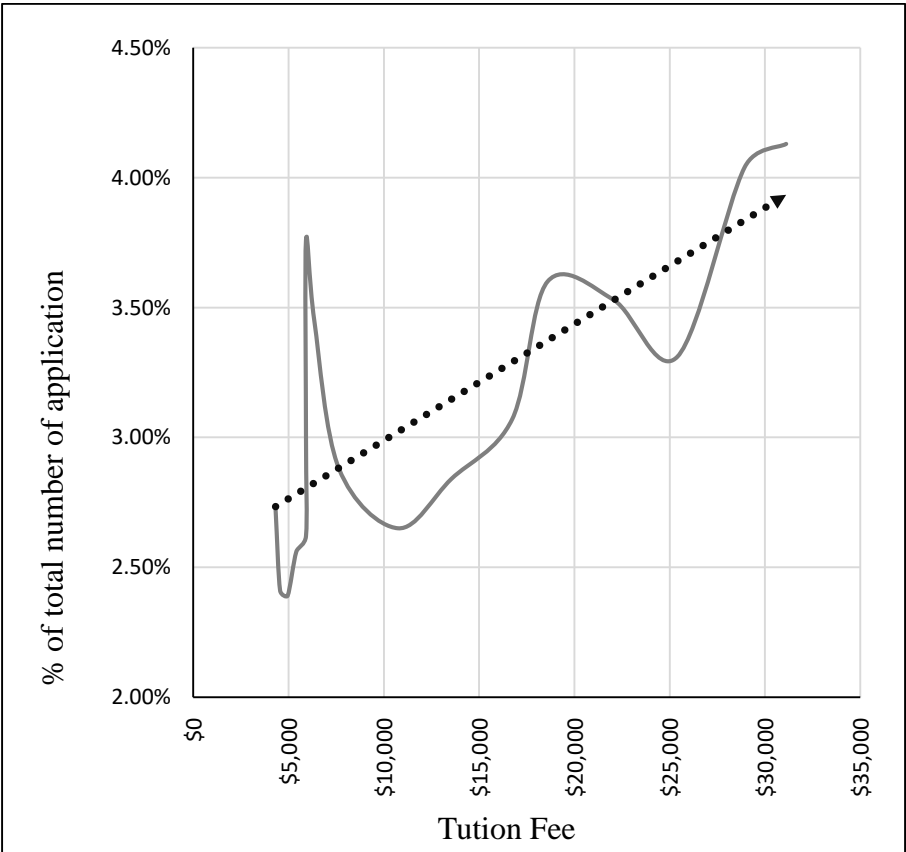


Fig. 1.1 Amount of tuition fee and the corresponding percentage increase in the number of applications (Campos, 2017)

Veblen effect in demand was also found by us while carrying out a survey of broadband users of an Indian Telecom Company. The price-demand relationship of Fig. 1.2 was found while observing the data on the number of subscribers using different

broadband monthly schemes. It was found that the number of subscribers increases initially with the increase in the cost of the monthly broadband scheme. With a further increase in the cost of the monthly scheme, the number of subscribers starts declining. The relation between the cost of the monthly scheme (p) and the number of the subscribers (N) was found to be a cubic function as $N = 0.0000003p^3 - 0.001627p^2 + 2.257p - 81.6$, with R^2 value of 0.83.

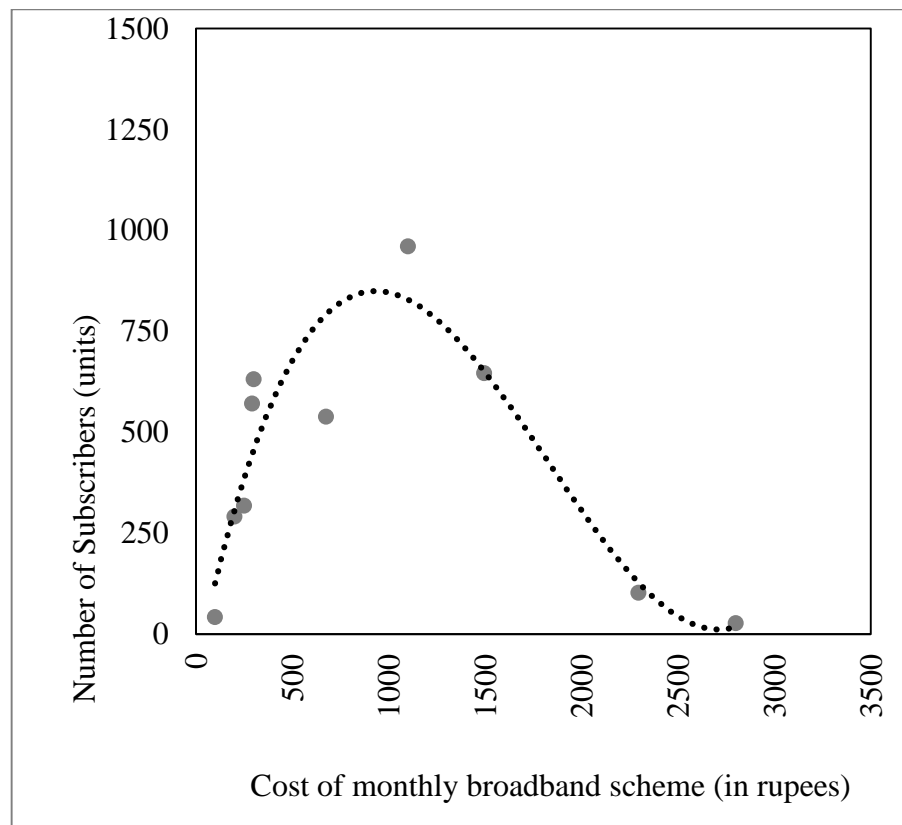


Fig. 1.2 Relationship between the cost of monthly scheme and number of subscribers

The demand for Veblen products can be influenced by marketing strategies. Advertisement and promotion, including demonstration and extended warranty, play a significant role in increasing the firm's market share and profitability, particularly for luxury automobiles, precious jewellery, and high-end cosmetics goods. The authors such as [Clark et al. \(2009\)](#), [McClure and Kumcu \(2008\)](#), [Zheng et al. \(2013\)](#) and some others have developed mathematical models in which they showed that the advertisement

expense could increase the profitability of the firm either by increasing the sales volume or the perceived value of the product.

1.2. Background and Motivation

The luxury market has significantly grown in the past two decades and is still continuously growing. A U.S. based top global management consultancy firm ([D'Arpizio et al., 2020](#)) reported the luxury market share to reach \$1.45 trillion by the end of 2019. It surveyed nine segments of luxury goods: personal luxury goods, luxury cars, luxury hospitality, luxury cruise, fine wine and spirit, fine food, designer furniture, private jets and yachts, and fine arts. The firm found the luxury market to follow an upward trend in the past two decades. It predicted the same to grow at the annual rate of 4-5% until 2025. Since this market is not small, there is definitely a need to develop inventory models for Veblen products for different possible variations in their demand suggested by [Leibenstein \(1950\)](#). Therefore, an attempt has been made here to develop mathematical models for determining optimal pricing and inventory policies along with promotional expense in the case of Veblen goods.

1.3. Organization of the Thesis

Chapter 2 presents the literature review and then by gaps identified for further research. In Chapter 3, the issue of determining pricing and lot-sizing policies for a Veblen product for a single retailer has been considered. Chapter 4 focuses on determining the optimal promotional expenses as well as optimal sales price and lot-sizing policies for Veblen products under two different markets; niche market and mass market. In Chapter 5, these policies are determined when the demand of the Veblen product also depends upon advertisement expenses. Chapter 6 presents the conclusions and summarises the work done in this thesis.