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From Well-heeled to Tip-toed, Shoe-shine to Shoe-lace: Valuing Product Differentiation in Men's Formal Footwear

Vishal Kumar and Satish Y. Deodhar¹

Abstract

Gone are the days when the only branded footwear Indians knew was Bata. After years of economic liberalization, one finds many firms; local, national, and international jostling for consumer attention by producing various types of footwear in Indian market. In fact, today Indian footwear industry is the second largest in the world. This market can be described as a stylized case of a monopolistically competitive market where there is intense competition among firms manufacturing differentiated products. In this study, we focus our attention on men's formal shoes which are distinguished by the presence (or absence) of many differentiated attributes such as heel, toes, colour, surface, laces, buckles and brands. Invoking hedonic price analysis and bid and offer curves of the customers and firms respectively, shoe prices are viewed as the sum total of the valuation of each of the shoe attributes. We estimate the relative valuation of the shoe attributes by regressing market prices of shoes on various quality attributes. Analysis shows that shoes made of leather, shiny surface, buckles, laces, and brands carry a premium and differentiation based on colour, pointed toes, high heels, and texture is not important. In a highly competitive market, such data driven studies can provide pointers to firms in altering existing shoe models and successfully launching newer ones.

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From Well-heeled to Tip-toed, Shoe-shine to Shoe-lace: Valuing Product Differentiation in Men's Formal Footwear²

1. Introduction

Traditionally referred as 'The Sleeping Giant' of global footwear industry, Indian footwear industry has come a long way from being viewed as a low cost supplier of leather material and footwear. Today, it has emerged as the second largest producer of footwears in the world, next only to China. A report by Transparency Market Research (TMR) had valued the global footwear market at USD 185 billion in 2011. With an expected compound annual growth rate (CAGR) of 1.9 per cent, the market is likely to reach USD 211.5 billion by 2018. A lot of this growth is predicted to take place in the Asia Pacific region with overwhelming domination by India and China. In fact, TMR (2012) projections show that these two countries will account for more than 30 per cent of the global revenues in 2018.

While footwear production capacity of India is only second to China in the world, there is significant difference in the absolute size. In 2011, while China produced more than 10 billion shoes (RNCOS, 2012), India produced only a little more than 2 billion pairs of footwear. Moreover, domestic footwear brands have hardly made any impact in foreign countries. Of the 2 billion footwear pairs, only 115 million pairs were exported in 2011. Going by the projections for domestic footwear demand, it is going to be a herculean task to strengthen and protect the domestic industry from foreign players, especially the low-cost footwear players from China.

² The idea of the paper is based on a preliminary group project undertaken by students including the first author at IIMA. The group project was carried out as part of an elective course under the guidance of the second author. Authors acknowledge the initial impetus given to this study by the group of students.

One of the interesting things about Indian footwear market is the fact that men's footwear segment covers more than 50 per cent of the entire footwear market in India. Within this segment, demand of formal footwear is on the rise due to India's rising younger working-class population. With changing lifestyles, evolving fashion trends, increased consumer disposable income, and rise in organized retail, men's formal footwear market in India is in a transformative phase. In 2012, India allowed 100 per cent foreign direct investment (FDI) in single brand retailing. Going by the number of shops at the airports and malls that carry international brands, it is clear that foreign players are gaining a foothold among Indian consumers. Moreover, although Indian government had mandated that 30 per cent of materials must be sourced domestically, this has not been an impediment for foreign brands as they already procure and import more than 30 per cent of their footwear materials from India (FU, 2012). Therefore, gone are the days when Bata was the only foreign manufacturer in Indian market. Today, if there are domestic brands such as Metro, Liberty, Corona and a few others, there are also quite a few foreign brands such as Clarks, Aldo, and Hush Puppies³ among others. Market for men's formal shoes, therefore, can be described in the language of neoclassical microeconomics as a 'monopolistically competitive' market – That is, the market being highly competitive with many firms trying to woo the customers, and at the same time, brands succeeding with some degree of success to create brand loyalty among customers through product differentiation and advertising.

³ Hush Puppies is a branded footwear of the US firm Wolverine Worldwide Inc. For quite some time, it has licenced Bata India to produce and market Hush Puppies through its exclusive stores. Perhaps firms are preparing themselves for the moment when Indian government allows FDI in multi-brand retailing (ET, 2012)!

While price is an important consideration in purchase decisions, Indian consumer, especially in the young working men segment, is starting to explore and experiment with various non-price factors such as trendy styles, comfort, quality and brand recognition. In these changing market conditions, the entry of foreign players would certainly affect the sales of local and national footwear brands. Therefore, it becomes imperative for the domestic manufacturers and other stakeholders to formulate a strategy to maintain or increase their market share. This would require a clear understanding of consumers' preferences and the importance they attach to various quality attributes of men's formal shoes. Once the consumer valuation of various shoe attributes is understood, the industry players can enhance their brand portfolio in terms of altering or adding features to the existing shoe styles. And armed with new or altered features, firms can aggressively market their shoes to increase the footfall and sales in the stores.

In the context of the above discussion, this paper attempts to identify the consumer preferences and valuations of various quality attributes of men's formal footwear by applying hedonic price analysis methodology to 150 shoe models across 18 different brands in the Indian market. The large number of shoe types as well as brands makes this analysis fairly representative of the Indian formal shoe market. With a total of 150 observations on prices and quality attributes, the regression model presented in the subsequent sections adds robustness to the analysis. In the section that immediately follows, we cover a brief review of existing literature on hedonic price analysis and some of the key results. Section III describes the methodology used in this paper for carrying out the analysis. Section IV provides information on

data collection, regression results, and key inferences. Finally, Section V provides concluding observations and pointers for further research.

2. Literature Review

Hedonic price analysis methodology has been around for nearly a century now and over the years, it has been mainly used in the field of agribusiness sector. In early 20th century, Waugh (1928) pioneered the work on measuring consumers' relative valuation of quality attributes of vegetables in Boston market. Several decades later, in a classic paper on consumer theory, Lancaster (1966) showed that goods are a combination of multiple characteristics and these characteristics play a significant role in determining the consumer preferences. In one of his most critically acclaimed papers, Rosen (1974) showed that equilibrium price of a differentiated product is the summation of the implicit prices of the utility bearing characteristics of that product. Using this principle, among other, studies have been conducted on processed food products such as wine, fruit juices, tea. For example, Schamel, Gabbert and Witzke (1998) did a study on wines in US market based on sensory attributes and factors such as region of origin and wine vintage. They found that consumers paid premium not only for sensory quality but also for reputation of the region of origin. Similarly, Weemaes and Riethmuller (2001) examined the fruit juice industry in Australia to measure the relative importance of the various quality attributes of fruit juices. They found that nutrition, convenience in usage, and product information were the main factors that commanded a price premium. Yet another study on Indian

tea by Deodhar and Intodia (2004) showed that among various attributes of tea, aroma and colour were the most prominent attributes valued by Indian consumers.

Of course, hedonic price analysis has not remained confined to processed food products alone. One finds its applications for valuation of characteristics of farmland, real estate, sportspersons, and even marriage! For example, Elad, Clifton, and Epperson (1994) used hedonic analysis to determine the relative worth of farmlands in Georgia (USA) by deriving implicit prices of quality attributes of farmlands. Similarly, Tse and Love (2000) applied the hedonic methodology to determine the consumers' valuation of residential property in Hong Kong market. Rastogi and Deodhar (2009) were the first to apply hedonic price analysis to cricket players. They focused their attention on the inaugural Twenty-20 format of the game played in the Indian Premier League (IPL) in 2008. For their analysis they used the IPL 2008 auction prices of cricketers and the cricketing and non-cricketing attributes of these players. Among other results, *ceteris paribus*, they showed that on an average, the auction price of an Indian player was US\$ 258,000 more than the auction price for non-Indian player, and non-cricketing attributes also played an important role in determining the player price. Interestingly, Rao (1993) conducted a study in which he estimated the rise of dowry in India using socio-economic and demographic attributes of brides and grooms in South Indian villages. A combination of growing population, higher number of people in younger cohorts, and substantive difference between marriageable age of women and men leads to surplus of women in marriage market. They find that this demographic feature defined as 'marriage squeeze' results in the rise of dowry in Indian villages.

While the above mentioned studies present various interesting applications of hedonic price analysis, no such study has been conducted on the footwear market, either in India or in any other global market. As alluded to in the earlier section; a combination of economic growth, changing lifestyle, and opening-up of the economy to rest of the world has dramatically catapulted Indian footwear market on a high pedestal! It has turned the market into a classic example of a monopolistically competitive market. While there are many local, national, and international brands in the market, there is also enough scope for product differentiation – Men’s formal shoes could be well-heeled or with no heel, they may be tip-toed or flat toed, they could be with laces or without, with black or brown colour, glossy or matt textured, and branded or generic ones. Therefore, what other but an uncharacteristically ordinary product such as footwear has emerged as an excellent candidate to carry out hedonic price analysis! In what follows, we focus our attention on hedonic price analysis of men’s formal footwear category in the Indian market. This enables us to measure consumers’ relative valuation of various quality attributes of men’s formal footwear and offers clues to firms - what attributes they may alter or add to stay ahead of competition.

3. Methodology

In this paper, we have adopted the model suggested by Rosen (1974) while the notation terminology is taken from Schamel, Gabbert and Witzke (1998). According to the model suggested by Rosen, in equilibrium, value of any economic good is based on its utility bearing attributes. That is, the equilibrium market price of any economic good turns out to be the sum

total of shadow prices that a consumer is willing to pay for its utility enhancing attributes. For example, for a representative good Z with N attributes, the hedonic price for good Z can be represented as:

$$P_Z = f(Z_1, \dots, Z_K, \dots, Z_N), \quad (1)$$

where P_Z is the price of good Z and $Z_1, \dots, Z_K, \dots, Z_N$ are the N attributes of good Z . Moreover, the utility maximization problem can be represented as:

$$\text{Max } U = U(Z, X) \quad \text{s.t.} \quad M - P_Z - X = 0, \quad (2)$$

where M represents income and X represents a composite numeraire commodity representing all other goods. Here we make an implicit assumption that in a given period a consumer purchases one unit of good Z . The marginal rate of substitution (MRS) between the K^{th} attribute of Z and the numeraire good X is given by:

$$MRS = \frac{\delta U / \delta Z_K}{\delta U / \delta X}. \quad (3)$$

In equilibrium when utility (U) is maximized, the MRS must be equal to the ratio of the shadow price of the attribute Z_K and the price of X . X being the numeraire good, therefore, the following equilibrium condition emerges:

$$MRS = \frac{\delta U / \delta Z_K}{\delta U / \delta X} = \delta P_Z / \delta Z_K, \quad (4)$$

where $\delta P / \delta Z_K$ represents the marginal implicit price of characteristic Z_K of the product Z and would correspond to the regression coefficient of Z_K in equation (1) above. Further, we can write the utility function U as:

$$U = U (M - P_Z, Z_1, \dots, Z_K, \dots, Z_N). \quad (5)$$

Solving the above mentioned equation for P_Z by keeping U^* & Z_{-K}^* constant at their optimal values as mentioned in equation (2), one can generate a bid curve B as:

$$B = g (Z_K, Z_{-K}^*, U^*). \quad (6)$$

Ceteris paribus, the bid curve B shows the maximum amount that a consumer would be willing to pay for a unit of Z as a function of the attribute Z_K . Higher the amount of Z_k in Z , higher would be the bid price B . Thus, B will be a positively sloped function with respect to Z_K . Moreover, we assume diminishing marginal utility with respect to Z_K , and, therefore, the bid curve B would be a concave function with respect to Z_K . Based on different consumers' preferences/incomes, we can have different bid curves $B^I(Z_K)$ & $B^J(Z_K)$ for two different consumers I and J as shown in Figure 1(a). For any such bid curve, a shift in the south-east direction would represent higher level of welfare for the consumer.

Similarly, on the supply side, we can sketch out an offer curve C for a representative firm with respect to the attribute Z_K as follows:

$$C = h (Z_K, Z_{-K}^*, \pi^*). \quad (7)$$

The offer curve C of a representative firm shows the minimum price at which the firm would be willing to sell a unit of Z as a function of Z_K while keeping all other attributes (Z_{-K}^*) and profit (π^*) at the optimal level. The offer curve C is positively sloped with respect to Z_K , for additional amount of Z_K can be offered only at a higher price. Moreover, offer curve C is a convex function with respect to Z_K , for it exhibits increasing marginal cost of providing additional units of Z_K . In Figure 1(b), $C^R(Z_K)$ and $C^S(Z_K)$ represent offer curves for two different firms R and S . For any offer curve, a shift in the north-western direction would be more profitable for a firm.

Figure 2 shows that a differentiated product Z is being bought and sold at different prices, which contains different levels of attribute Z_K . In equilibrium, P_{IR} price is paid by consumer I to firm R for a differentiated good which contains Z_{KIR} level of attribute Z_K . This equilibrium price and level of Z_K is the result of tangency between the bid curve B^I and offer curve C^R . Similar tangency condition ensures that consumer J purchases good Z from firm S , for a price P_{JS} and which contains Z_{KJS} level of attribute Z_K . Of course, superscripts in the functions B and C need not just be representing two consumers and two firms but two groups of consumers and/or firms. In fact, we can generalize this to say that there could be many groups of consumers and firms who trade Z at different prices and different levels of Z_K attribute in it. The relation between the locus of such equilibrium tangencies (P and Z_K) can be estimated. In fact, since there are N different attributes of Z , such relation can be estimated between price P and all attributes ($Z_1, \dots, X_K, \dots, Z_N$) of Z . Therefore, given the market prices of each of the differentiated product Z and varying values for its quality attributes ($Z_1, \dots, Z_K, \dots, Z_N$), one can estimate equation (1) which is described as the hedonic price equation. This hedonic price equation may not be linear (as may

appear in Figure 2). An appropriate functional form can be always be estimated econometrically by applying a suitable Box-Cox transformation to the data.

Figure 1(a): Bid Curves

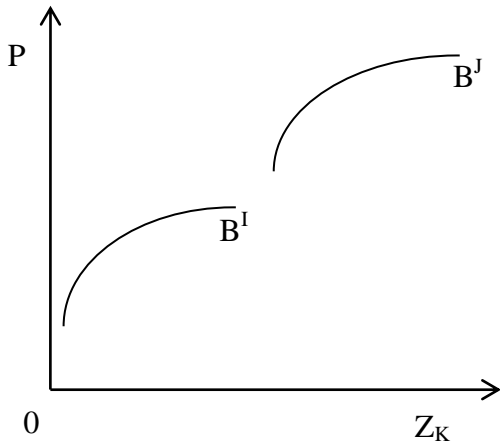


Figure 1(b): Offer Curves

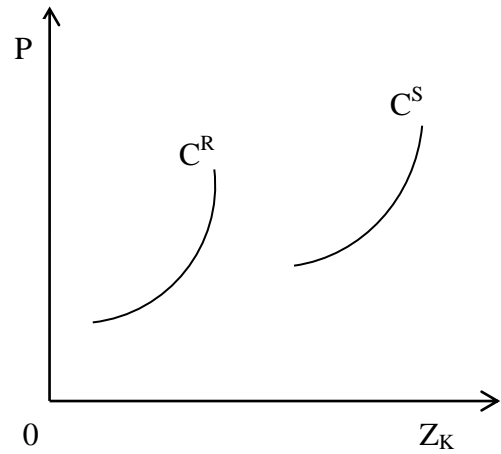
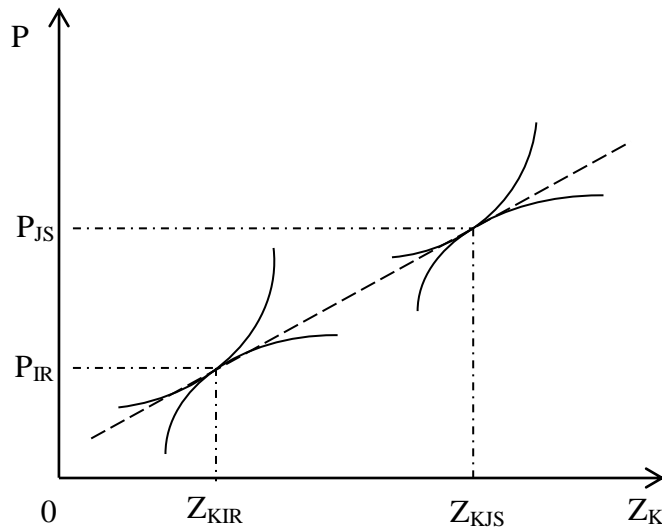


Figure 2: Equilibrium Hedonic Price and Quality Attribute



With many local, national, and international brands in men's formal shoe category, the industry represents a typical case of a monopolistically competitive market. The good Z described in this section very well represents the men's formal shoes sold in India. These shoes can be described as a differentiated product with varying prices and characterized by varying quality attributes. Therefore, a hedonic price analysis can be done by regressing prices of men's formal shoes on its various quality attributes. We turn to the empirical estimation of this equation in the next section.

4. Data, Regression, and Interpretation

Our paper analyses the data of 150 types of men's shoes from 18 different brands in the Indian market. The data were collected from various online e-commerce websites like flipkart.com and also by visiting many shoe shops in Ahmedabad city. All shoe prices were considered at MRP (Maximum Retail Price) level. Similarly, we identified ten key quality attributes of men's formal shoes. These include, (1) whether the shoe was made from genuine leather or otherwise; (2) whether the shoe colour was black or otherwise (mostly brown); (3) whether the shoe texture was plain or chequered; (4) whether the shoe was tip-toed (pointed) or otherwise; (5) whether the shoe surface was shiny or otherwise; (6) whether the shoe had laces or otherwise; (7) whether it was well-heeled or flat; (8) whether it had a buckle or otherwise; (9) whether the shoe was from a national brand or otherwise, and (10) whether the shoe was from an international brand or otherwise. Of course, if a shoe is neither from a national brand nor from an international brand, it gets characterised as a locally made generic shoe. *Ceteris paribus*,

inclusion of the national/ international/ local brand captures the consumer perception about identifying shoe quality that is associated with its brand and origin.

Given the data and the above description of the variables, we regressed prices of 150 types of shoes on its 10 quality attributes. The spectrum of the coverage of the men's formal shoes is quite wide – It includes 9 international brands including Aldo, Clarks, Steve Madden, Bata etc. and 8 national brands including Liberty, Metro, and others. Each of the brands has many types of shoes depending upon the 8 attributes mentioned above. In the model, the shoe price (P) ranges from Rs. 550 to Rs. 9990 covering a wide cross section of men's formal shoes sold in Indian markets. The variables representing the quality attributes (Z_1 to Z_{10}) are all dummy variables taking value 1 or 0 depending on presence or absence of a particular quality attribute. The Descriptive statistics of the data provided in Table 1 below.

Table 1: Descriptive Statistics

| | Variable Description | Shoe Count | Mean | σ |
|-----------------|------------------------------------|------------------------------|-------------|----------------------------|
| P | Max Retail Price (Rs.) | Total = 150 | 3307 | 1923 |
| Z ₁ | Composure (1 if leather, else 0) | Leather = 110 | 0.73 | 0.44 |
| Z ₂ | Colour (1 if black, else 0) | Black = 107 | 0.71 | 0.45 |
| Z ₃ | Texture (1 if chequered, else 0) | Chequered = 59 | 0.39 | 0.49 |
| Z ₄ | Structure (1 if pointed, else 0) | Pointed = 41 | 0.27 | 0.45 |
| Z ₅ | Lace (1 if it is present, else 0) | With lace = 74 | 0.49 | 0.50 |
| Z ₆ | Heel (1 if it is present, else 0) | With heel = 101 ^a | 0.67 | 0.47 |
| Z ₇ | Surface (1 if shiny, 0 if dull) | Shiny = 92 | 0.61 | 0.49 |
| Z ₈ | Buckle (1 if present, else 0) | With Buckle = 23 | 0.15 | 0.36 |
| Z ₉ | = 1 if National brand, else 0 | National = 63 | 0.42 | 0.49 |
| Z ₁₀ | = 1 if international brand, else 0 | International = 73 | 0.49 | 0.50 |

^a Considered to be present if heel height is greater than or equal to 1 inch from the sole.

To choose the functional form for the hedonic price equation, a particular Box-Cox transformation of the variables is used which fits the data best. In particular, a transformation could use dependent and independent variables in levels (Lin-Lin) or in logs (Log-Log) or one

could be in logs and the other in levels (Log-Lin or Lin-Log), or both could be used by taking first differences. Of course, in the current estimation, all independent variables (Z_1 to Z_{10}) are dummy variables taking a value of 1 or 0. Therefore, transformations such as the Log-Log, Lin-Log, and first-differences cannot be used. Log-Lin transformation seemed to fit the data best which can be described by the functional form:

$$\ln P = \beta_0 + \sum_{k=1}^{10} \beta_K Z_K. \quad (8)$$

This function in its original exponential form is written as:

$$P = e^{[\beta_0 + \sum_{k=1}^{10} \beta_K Z_K]} \quad (9)$$

The above function is valid only for positive values of P , which makes sense as (shoe) prices will always be positive. Here the coefficient β_K demonstrates a constant percentage change in P due to a unit change in the quality attribute Z_K ; i.e., $\beta_K = 1/P * (dP/dZ_K)$. Moreover, the intercept term β_0 captures all other factors that potentially could affect the shoe price and is not covered among the 10 attributes. The results of the estimation are reported in Table 2 below. Table 3 reports the econometric robustness of the estimated equation. The regression equation produced a Multiple R^2 and the Adjusted R^2 of 0.77 and 0.56, respectively. It also meets the goodness-of-fit test with F-statistics of 20.0 significant even at a p-value of 0.0001. Also, the estimated χ^2 values of B-P-G and Glejser test were not significant at 0.05 p-value. Therefore, the null hypothesis of homoscedasticity could not be rejected. Moreover, the independent dummy

variables were tested for multicollinearity using Klein's rule. All the auxiliary R^2 values were lower than overall R^2 indicating absence of multicollinearity among the independent variables.

Table 2: Hedonic Price Equation (Dependent Variable: $\ln P$)

| Variable (Z_K) | Coefficient (β_K) | T Statistics |
|--------------------|---------------------------|--------------|
| Constant | 6.37 ^a | 42.23 |
| Z_1 | 0.32 ^a | 3.79 |
| Z_2 | - 0.04 | -0.53 |
| Z_3 | 0.04 | 0.52 |
| Z_4 | - 0.01 | -0.07 |
| Z_5 | 0.16 ^b | 2.02 |
| Z_6 | - 0.10 | -1.31 |
| Z_7 | 0.28 ^a | 3.66 |
| Z_8 | 0.29 ^a | 2.77 |
| Z_9 | 1.20 ^a | 9.05 |
| Z_{10} | 1.28 ^a | 10.12 |

^a Significant at 0.01 two-tailed test, ^b significant at 0.05 two-tailed test

Table 3: Diagnostic Tests of the Regression

| | | |
|---------------------------------|---------------------------|---|
| 1. Coefficient of Determination | Multiple R^2 | 0.77 |
| | Adjusted R^2 | 0.56 |
| | | |
| 2. Overall Significance | F Statistics | 20.00 ^a |
| | | |
| 3. Homoscedasticity Tests | B-P-G χ^2 | 8.07 ^b |
| | Glejser χ^2 | 1.01 ^b |
| | | |
| 4. Multicollinearity | Klein's Rule ^c | $R^2_{Z1} = 0.18, R^2_{Z2} = 0.09$ $R^2_{Z3} = 0.11, R^2_{Z4} = 0.12$ $R^2_{Z5} = 0.30, R^2_{Z6} = 0.18$ $R^2_{Z7} = 0.17, R^2_{Z8} = 0.22$ $R^2_{Z9} = 0.11, R^2_{Z10} = 0.05$ |

^a Significant at 0.01, ^b not significant at 0.01 & 0.05, ^c auxiliary R^2 's less than overall R^2

Our analysis presents some interesting results for men's formal footwear in Indian markets. One of the key variables which showed major impact on the shoe price is its composure; i.e. whether shoes are made up of leather or any other material. *Ceteris paribus*, i.e. holding other things constant, our analysis indicates that consumers are willing to pay a premium of 32 per cent for leather shoes over non-leather shoes. On an average, this amounts to a premium of about Rs. 691. Coefficient of the 'colour' attribute is not significant at all. That is, on an average, a particular colour, black or brown is not valued more over the other. We also found other attributes such as texture, structure and heel to be insignificant in our analysis. These attributes do not seem to influence shoe price. That is, whether or not the shoe texture is

chequered or smooth, whether shoes have pointed or round and square toes, and, whether they are well-heeled does not seem to matter. However, although the coefficient of (high) heel was statistically insignificant; somewhat, the coefficient itself was negative in value. This may suggest that high heel shoes are perhaps considered to be less formal by men's segment in India and/or perhaps they are less comfortable to wear.

And there were some other interesting results as well. The coefficients of attributes related to shoe laces, shoe surface, and buckles were positive and quite statistically significant. We find that consumers are willing to pay 16 per cent or about Rs. 472 more for shoes with laces over slip-on (non-lace) shoes. Although Slip-ons may seem to be convenient to use, however, men seem to consider shoes with laces more formal than slip-ons. Also, men prefer shoes with shiny surface over flat or matt finished ones and are willing to pay 28 per cent more for it. This amounts to a premium of about Rs. 720. Perhaps this indicates that consumers see value in buying shoes which do not require frequent polishing. A buckle seems to be considered as a style symbol in luxury shoes. We find that *ceteris paribus*, the price of a shoe with buckles is 29 per cent more than that of a shoe without buckles. This 29 per cent premium amounts to an absolute premium of about Rs. 939. This may be an indication of a changing fashion trend among Indians where a shining buckle shoe may have become a style statement and they are willing to pay more than Rs. 900 for it.

Importantly, even after controlling for about 8 quality attributes of shoe, we find that there is strong premium attached to the intangible attribute of brand. Both national and

international brand coefficients were highly statistically significant and commanded about 120 per cent and 128 per cent premium over local brand. This translates into an absolute premium of about Rs. 1002 and Rs. 1069, respectively over locally made generic shoes. This clearly confirms that consumers are ready to pay a huge premium for a brand which is recognized nationally or internationally, despite controlling for the important 8 quality attributes we have incorporated in the analysis. Moreover, with a difference of about Rs. 67, the premium difference between an international brand and a national brand is very insignificant. And finally, the constant term in the hedonic price regression is also statistically very significant. The constant term captures the influence of variables that are not explicitly included in the hedonic price equation. These could relate to quality attributes such as comfortable insoles, better fit to the foot, and shoes being heavier or lighter to wear etc.

5. Summary and Concluding Observations

Today, India and China are the world's two leading shoe producers. While India does export a significant volume of footwear, it is on the cusp of a retail revolution in the domestic market. With high GDP growth rate, allowance of 100 per cent FDI in single-brand retail, changing lifestyle, and larger share of younger population, Indian footwear market is bound to become one of the largest in the world in the upcoming years. Currently, men's footwear segment covers more than half of the entire footwear market in India and many firms including local, national and international are competing with each other in selling differentiated shoe brands in Indian markets. Therefore, this market can be characterized as a classic case of a

monopolistically competitive market with many firms selling many differentiated versions of men's formal shoes.

In such a market, it becomes imperative for shoe manufacturers and retailers to understand consumer perceptions of various quality attributes of shoes. Understanding consumer preferences about the designs and the relative valuation of the quality attributes would help them develop more ergonomic designs and cater better to the taste of consumers in men's formal footwear category. Equilibrium price of any product is the result of the interaction between demand and supply for that product. Different varieties of men's formal shoes sell at different prices at a point in time and a consumer too makes an informed choice to pick a particular kind of shoe. This means that a consumer makes utility maximizing choices of different quality attributes of a shoe which result in buying a particular kind of shoe. Therefore, the equilibrium prices of different shoes can be thought of as a sum total of the relative valuations of their quality attributes. Given the market prices of shoes and measurements of different quality attributes, a hedonic price analysis accomplishes just that.

Our paper presented hedonic price analysis of men's formal shoes in Indian market. We identified 10 key variables which might have impact on shoe prices and performed regression analysis by keeping the price as the dependent variable. The regression equation reveals quite a few relative valuations of different quality attributes of men's formal shoes. Controlling for all other attributes, it is clear that consumers do not have any specific preference for shoes with heel or without, shoes with pointed toes or flat ones, shoes that have plain texture or chequered, and

shoes of different colours i.e. black or brown. Therefore, no premiums are attached to these quality attributes.

On the other hand, there are quite a few attributes that command premium. Controlling for all other quality factors, men's formal shoes with laces are valued more than the slip-on shoes. Perhaps shoes with laces are considered more formal than the other. Buckle on the shoe seems to be a style statement, for the coefficient associated with it was statistically quite significant. Moreover, shiny shoes seem to be preferred over flat or matt finished ones indicating value attached to saving time and efforts required for frequent polishing. Consumers also seem to be very brand conscious. Both national and international brands command a premium of more than Rs.1000, despite controlling for all other quality attributes. Thus, brands seem to signal quality and it is imperative that shoe manufacturers pay attention to brand building exercise. Another important feature is the premium for leather shoes over shoes made from man-made-materials which suggest that leather seems to add more formality to shoes than any other material.

In the present study, for the men's formal shoes available in the market, we have incorporated as many quality attributes as we could get information on. However, there could be some factor which market prices and physical attributes of the shoes do not reveal. Contribution of such factors gets included in the constant term of the hedonic price equation. We do find that the constant term in the regressed equation was quite significant. Factors such as sole material, shoe fit and comfort, and shoe being light or heavy could be considered in such attributes for

which data is not available. Of course, advertising and promotions also influence consumers' perceptions. However, such influences get captured in the brand dummy which we have used in our analysis.

We anticipate that this study would act as a template or a yardstick for incumbent firms, potential entrants, and other stakeholders in the footwear business. They could work around with the various shoe attributes to develop appropriate shoe varieties particularly suited to Indian market. Of course, the hedonic price analysis is based on market data of prices and physical attributes of shoes, and therefore, it is impersonal in nature. It can be complemented by market research techniques such as dip-stick surveys.

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