From Well-heeled to Tip-toed, Shoe-shine to Shoe-lace:

Monopolistic Competition and Product Differentiation in Men's Footwear[1]

Vishal Kumar and Satish Y. Deodhar[2]

Monday, 4 January 2016

[1] Paper for presentation at the Association of Indian Economic and Financial Studies (AIEFS) sessions, Allied Social Sciences Association (ASSA) meetings, San Francisco, CA, 3-5 January 2016.

[2] Authors are graduating student and Professor of Economics, respectively, at the Indian Institute of Management Ahmedabad, India 380 015. Contact for the corresponding author: satish@iimahd.ernet.in

From Well-heeled to Tip-toed, Shoe-shine to Shoe-lace:

Monopolistic Competition and Product Differentiation in Men's Footwear

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.

From Well-heeled to Tip-toed, Shoe-shine to Shoe-lace:
Monopolistic Competition and Product Differentiation in Men's Footwear

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 mere low cost supplier of leather material and footwear. Today, it has emerged as the second largest producer of footwear 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 and it is expected 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 emerging markets 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 pairs of footwear (RNCOS, 2012); India produced only a little more than 2 billion pairs. 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.

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 growing 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 retail outlets at airports and shopping malls that carry international brands, it is evident 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 many domestic brands including the more popular ones such as Metro, Liberty, and Corona; there are also quite a few foreign brands such as Clarks, Aldo, and Hush Puppies[3] 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 is intensely competitive with many firms trying to woo the customers, and, at the same time, many firms have been successful in creating brand loyalty among customers through product differentiation and advertising.

While price is an important consideration in purchase decisions, Indian consumers, especially in the young working men segment, are 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

[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, foreign firms are preparing themselves for the moment, when Indian government allows FDI in multi-brand retailing (ET, 2012)!

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 brand loyalty by of altering or adding features to the existing shoe styles. 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 footwear 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 3 describes the methodology used in this paper for carrying out the analysis. Information on data collection, regression results, and key inferences are provided in Section 4. Finally, Section 5 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 the 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, studies have been conducted on processed food products such as wine, fruit juices, and 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 the US state of Georgia 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 those 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, they could be shiny or matt textured, they could be black or brown coloured, and the shoes could be 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 in the Indian market. This enables us to measures 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:

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

where P_Z is the price of good Z and $Z_{1, \ldots,} Z_{K, \ldots} Z_N$ are the *N* attributes of good Z. Moreover, the utility maximization problem can be represented as:

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

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:

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

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:

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

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, ..X_K, …, 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, .., Z_K, .., 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

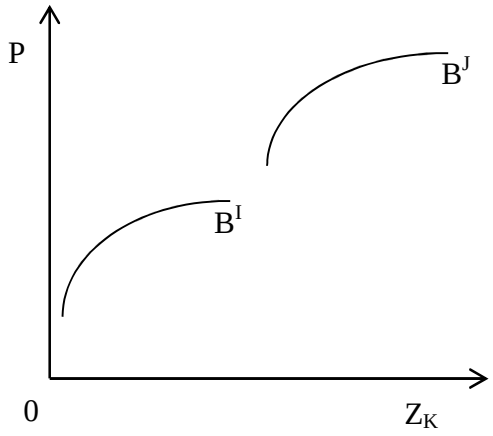


Figure 1(b): Offer Curves

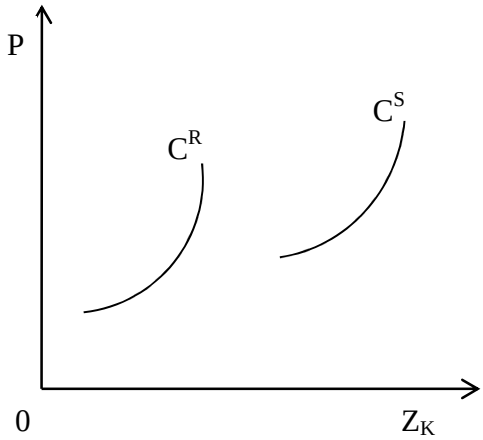
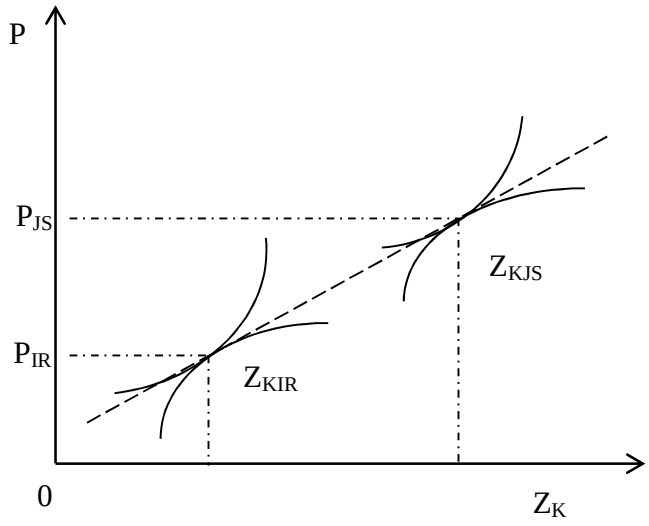


Figure 2: Equilibrium Hedonic Price and Quality Attribute



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 (between Jan to March 2014). All shoe prices were considered at MRP (Maximum Retail Price) level. For our research analysis, we identified ten key quality attributes of men's formal shoes. These include, (1) shoe composure - whether the shoe was made from genuine leather or otherwise; (2) colour - whether the shoe colour was black or otherwise (mostly brown); (3) texture - whether the shoe texture was plain or chequered; (4) structure - whether the shoe was tip-toed (pointed) or otherwise; (5) lace - whether the shoe had laces or otherwise; (6) heel - whether it was high-heeled or flat; (7) surface - whether the shoe surface was shiny or otherwise; (8) buckle - whether it had a buckle or otherwise; (9) brand (national) - whether the shoe was from a national brand or otherwise, and (10) brand (International) - 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 among 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 is 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 Adjusted R^2	0.77 0.56
2. Overall Significance	F Statistics	20.00[a]
3. Homoscedasticity Tests	B-P-G χ^2 Glejser χ^2	8.07[b] 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^2s 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. Quite interestingly, colour of the shoe does not play a major role in deciding the consumer perception towards its price. That is, on an average, a particular colour, black or brown is not valued more over the other. We found colour coefficient to be insignificant in the analysis. Perhaps, one of the reasons for this insignificance is the fact that today, most of the shoe varieties are available in wide range of colours and consumers are not required to pay an additional amount to choose a particular colour 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 prices. 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 much in Indian markets. However, although the coefficient of (high) heel was statistically insignificant; 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 - 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 quite 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 competitive 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 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 huge premiums. 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 factors 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.

The above results presented in the paper have important implications for shoe manufacturers, domestic & international retailers and export houses. In fact, when it comes to Indian consumers in men's formal footwear segment, having a strong brand presence pays a rich dividend. Thus, it is important for local traders and local manufacturing hubs to expand their brand presence all over the country to gain better market share. Given the changing fashion trends among young working men in the emerging markets such as India, China and other Asian countries, it becomes important for manufacturers, retailers & traders to know the evolving fashion trends and accordingly alter or design shoes that suit the growing consumer needs. As evident from our study, even a minor addition of Buckle in the shoes or making the shoe surface shiny can give high returns in these emerging markets. Another important fact among Indian consumers is the importance given to leather shoes over non-leather shoes in formal footwear category. However, we also found that international brands are able to charge high price even for shoes that are not made of leather, thus clearly showing how an established and internationally recognized brand influences consumers price and quality perception of shoes.

We anticipate our study to act as a template or a yardstick for incumbent firms, potential entrants, and other stakeholders of footwear business in emerging markets. They could work around with the various shoe attributes to develop appropriate shoe varieties particularly suited to emerging markets of India and other Asian countries as consumer preferences largely depend on the ten key attributes listed in the paper. 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 further complemented by market research techniques such as dip-stick surveys.

References:

Deodhar, S. and Intodia, V. (2004). What's in a Drink You Call a Chai?: Quality Attributes and Hedonic Price Analysis of Tea. *Journal of International Food and Agribusiness Marketing*, 16(1), 43-57.

ET (2012). "Bata may expand international footwear brands basket for India". Economic Times (ET), accessed on 12 December 2014 from http://articles.economictimes.indiatimes.com /2012-01-15/news/30629682_1_multi-brand-retailing-bata-india-bata-global

Elad, R.L., Clifton, I.D. and Epperson, J.E. (1994). Hedonic Estimation Applied to the Farmland Market in Georgia. *Journal of Agricultural and Applied Economics*, 26, 351-66.

FU (2012). "FDI woos global footwear majors to India", FashionUnited (FU), accessed on 11 November 2014 from http://www.fashionunited.in/news/apparel/fdi-woos-global-footwear-majors-to-india-130320123290.

GOI (2012). "Indian Footwear Industry – A Status Note", Council of Leather Exports, Government of India (GOI), accessed on 6 August 2014 from http://www.leatherindia. org/products/footwear-23-4-13.asp

Lancaster, K. J. (1966). A New Approach to Consumer Theory. *Journal of Political Economy*, 74(2), 132-157.

Palmquist, R. (1989). Land as a Differentiated Factor of Production: A Hedonic Model and its Implications for Welfare Measurement. *Land Economics*, 65, 23-28.

Rao, V. (1993). The Rising Price of Husbands: A Hedonic Analysis of Dowry Increases in Rural India. *Journal of Political Economy*, 101(4), 666-677.

Rastogi, S. and Deodhar, S.Y. (2009). Player Pricing and Valuation of Cricketing Attributes: Exploring IPL Twenty-Twenty Vision. *Viklapa, The Journal for Decision Makers,* Vol. 34 (2), April-June, 15-23.

RNCOS (2012). "Indian Footwear Market Forecast 2014". *RNCOS Business Consultancy Services*, accessed on 6 August 2014, from http://www.rncos.com/Report/IM310.htm

Rosen, S. (1974). Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition. *Journal of Political Economy*, 82, 34-55.

Schamel, G., Gabbert, S., and Witzke, H. (1998). Wine Quality and Price: A Hedonic Approach. In D. Pick et al (Ed.), *Global Markets for Processed Foods: Theoretical and Practical Issues* (pp. 211-221). Boulder, Co: Westview Press.

TMR (2012). "Footwear Market - Global Scenario, Trends, Industry Analysis, Size, Share and Forecast 2012 – 2018". Transparency Market Research (TMR), accessed on 6 August 2014, from http://www.transparencymarketresearch.com/footwear-market.html

Tse, R., and Love, P. (2000). Measuring Residential Property Values in Hong Kong. *Property Management*, 18 (5), 366-374.

Waugh, F. (1928). Quality Factors Influencing Vegetable Prices. *Journal of Farm Economics*, 10, 185-196.

Weemaes, H. and Riethmuller P. (2001). "What Australian Consumers like about Fruit Juice: Results from a Hedonic Analysis". Paper presented at the World Food and Agribusiness Symposium, International Food and Agribusiness Management Association, Sydney, Australia, 27-28 June.