The Influence of Demographic Characteristics on Price Sensitivity: A Study

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***Abstract*- Price is one of the most important tools of the marketing mix. The pricing strategy and decisions of marketers can largely affect profitability, survival, and revenues. The aim of the study is to understand the connection of demographic variables of customers with customers' price sensitivity. The five demographic characteristics of customers are age, gender, marital status, occupation, and family annual income level. In total 120 customers participated in the study and data was collected through the survey method in Mizoram. Multiple linear regression, one-way ANOVA, descriptive statistics, and reliability statistics were used to analyse. The five characteristics of customers have a negative correlation to the dependent variable. Occupation has the most negative impact on customers' price sensitivity. Older customers and high income are less price-sensitive compared to younger ones and low-income level. As demographic characteristics are crucial for understanding the price sensitivity of customers, more authors and researchers should focus on the impact of socio-demographic characteristics on price sensitivity.**

Keywords: **demographic, price sensitivity, multiple linear regression**

1.Introduction

Price sensitivity is the difference on how one individual consumer express their reaction to certain fluctuations in price levels. Each customer has certain acceptable price range and limit in their view of what the worth is to be inside their range. Price sensitivity of customer is one of the key factors in the decision-making of the marketer. It measures the percentage of sales to lose or gain at any specific price point in relation to another lower or higher price point. A thorough knowledge of product's price sensitivity, can help to uncover revenue, maximize price band, and the impact of price changes on sales numbers. Price sensitivity is normally measured by Price elasticity of demand. Price elasticity of demand is defined as the measure of the change in demand to the function of its price change. This implies the degree to which the sale and demand of a particular product or service is affected as the cost of product or service changes. As some of the consumers are reluctant to pay extra rupees for a litre of gasoline, if there is a lower-priced gas station available nearby. Price sensitivity is the means in which the cost of a product and service can change the consumers' purchasing power and decisions.

With the help of price sensitivity analysis, decision-maker of companies can create better decisions on how to label the price for product and service, able to assign the right price, and also to remain in competition and increase revenues. Price-sensitive customers is one of the key element that affect the marketing strategies, pricing choices, and profitability of business. It is like a three-legged stool, the pricing strategy needs a strong support and hand from positioning, packaging, and pricing to be effective and efficient. There are many factors influencing the price sensitivity of customer, though, stated by Kim, Srinivasan and Wilcox (1999), demographic variables are one of the key factors of price sensitivity. In fact, even though socio-demographic characteristics are essential for understanding of costumers' price sensitivity; there are few authors that focus on the demographic characteristics influencing the customer price sensitivity, researchers like, Kim, Srinivasan and Wilcox (1999), Meyer et al. (2014), and Etemadi (2019).

In the following sections, the literature review is elaborated, the objective of the paper and the hypothesis are mentioned. Then, methodology, results and discussion, and conclusion are presented.

2.Literature Review

Nassar, Gad, and Kortam (2021) purpose is to improve the understanding of the relationship between customer demographic variables (age, gender, income level, and family life cycle) and price sensitivity at an individual level. This study was conducted in Egypt with context to the Fast-Moving Consumer goods market. Based on literature reviews and exploratory research, the four demographic variables are potentially significant to price sensitivity.

Yarela, Roberto, Francisco, and Felipe (2021) distinguished the three dataset types that is aggregated data, disaggregated data, and semi-aggregated data. The purpose is to compared the significances of using large sample of semi-aggregated data to small sample of fully disaggregated data on the estimation of water price elasticity, and also, to analyse if different levels in the demographic variables influence the estimation of water price elasticity. The results indicated that water price elasticity differs with the level of aggregation, and are statistically distinctive to large semi-aggregated sample and to small disaggregated sample.

Marie (2020) explored the impact of socio-demographic characteristics on the price sensitivity of customers. The study was

conducted in Czech, majority of the respondents were at the age group of 25-54 years old (63%), family with two children (29%), with a partner (28%), and (61%) have master or bachelor's degree. The results showed that age group displays high significance, which means, younger customers are less price-sensitive than the older ones. In gender, females are somewhat more price-sensitive than males, and household with more family members, the customer is more price-sensitive. Income and Education display a negative correlation with price sensitivity of customer. The independent variables, Age and Income has the most positive and negative significant and impact on the consumers' price sensitivity.

Uslu, and Huseynli (2018) determined the effect of price sensitivity on repurchase intention in relations to personality characteristics, and also examined which of the personality characteristics has affect to price sensitivity. The research was conducted in Turkey and 519 participants, who consume soft drinks. The results of the study showed that price sensitivity varies from personality characteristics with Agreeableness, Extraversion, and Neuroticism dimensions. Additionally, income level from socio-demographic characteristics of the participants differs with price sensitivity.

Mirela and Ivana (2017) explored the influence of personal factors on shopping enjoyment, its impact on word of mouth communication, and moderating effects of demographic variables. In total 1000 Croatian respondents was collected and, SEM and other statistical techniques, was used for data analysis. The outcomes showed that personal factors have positive and significant influence on shopping enjoyment, and to word of mouth communication. Additionally, confirm the moderating effects of demographic variables to shopping enjoyment and word of mouth. The findings will be helpful to marketing experts to understand the consumer's factors, to adequately evaluate the necessary appeals, and to form an effective and persuasive marketing communication.

Ziyuan, Zhibin, John, and Wenbo (2017) investigated the spatial heterogeneity of parking occupancy sensitivity to the change of price. The study was conducted using the data acquired in San Francisco between the year 2011to 2014. Performance-based pricing model allows parking rate to increase, decrease or unchanged with the levels of parking occupancy higher than, lower than, or within a range was implemented. The result showed a significantly negative correlation to the change in occupancy and parking rate. Findings can be used to assist parking authorities to identify which blocks are suitable for parking, and to plan optimal parking rate schemes.

Yang et al (2016) examined the explanatory variables of smokers' behavioural response at the individual and regional level, to the price of cigarettes. The price behavioural response is associated with demographic characteristics, income, smoking expenditure and purchasing behaviours. The survey was conducted in China, cross-sectional multistage sampling process, and multilevel logistic regression analysis was used. For collection of information, standardized questionnaires used for individual level, and national database used for regional level. The results showed 5660 smokers, out of which 5.2 % cut their smoking spending due to price, 5.9 % used non-self-paying cigarettes, and 32.8 % bought cigarettes in cartons. The analysis showed that demographic characteristics, expenditure, restriction, production, and media exposure are associated to price sensitivity. The finding indicated that with the increasing sensitivity to the prices of cigarette will demand better tobacco control and public education campaigns.

3.Objective of the paper

To find the relationship between demographic characteristics and price sensitivity of customers. In this study, the demographic characteristics taken into consideration are Age, Gender, Marital status, Occupation, and Family annual income.

4.Hypothesis

There is a positive and significant relationship between demographic characteristics and the price sensitivity of customers.

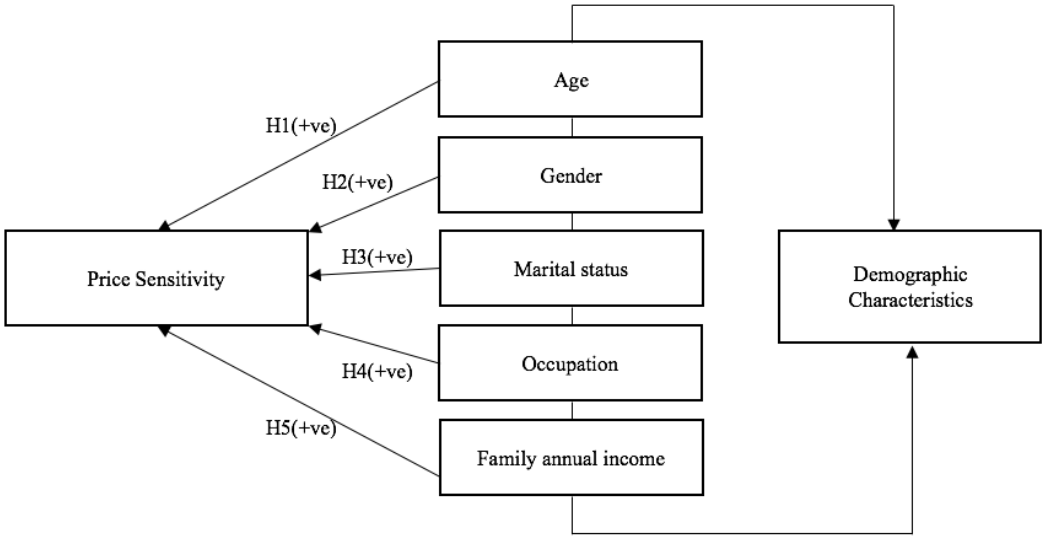

Figure 1: Hypotheses model for Price Sensitivity

5.Methodology

For the collection of data, structured questionnaires were designed and divided into two sections. The first section consists of the demographic characteristics of customers that is Age, Gender, Marital status, Occupation, and Family annual income level. In the second section, the questions are regarding the price sensitivity of customers. A Likert scale of five points, 1 being Strongly Disagree and 5 being Strongly Agree was used for the second section. The study was conducted in Mizoram, North Eastern Region of India, 120 customers participated, and the data was collected through an online survey tool (Google form). A Purposive sampling technique is used for selecting the respondents. The data analysis and interpretation were performed using Reliability statistics, Descriptive statistics, one-way ANOVA, and Multiple Linear Regression in Jamovi version 2.3.19 software.

6.Results and discussion

6.1. Demographic characteristics

In Table 1, it shows the frequency of the characteristics of 120 respondents, the maximum of the customers belongs to the age level of below 25 years (73, 60.8%), more female (54.2%) participated than the male (45.8%), respondents are mostly single (93, 77.5%) and student (73, 60.8%), and the family annual income level of the customers is maximum at Below INR 2 Lakhs (40, 33.3%) and minimum at Above 8 Lakhs (11, 9.2%).

Table 1. Demographic Characteristics Frequency (N=120 Respondents)

Characteristics		**Counts**	**% of Total**	**Cumulative %**
Age	36-45 years	10	8.3%	39.2%
	26-35 years	37	30.8%	30.8%
	Below 25 years	73	60.8%	100%
Gender	Female	65	54.2%	54.2%
	Male	55	45.8%	100 %
Marital status	Divorced	1	0.8%	0.8%
	Married	26	21.7%	22.5%
	Single	93	77.5%	100%
Occupation	Government employees	12	10%	10%
	Private employees	24	20%	30 %
	Self-employed	11	9.2%	39.2%
	Student	73	60.8%	100%
Family annual income level	Below INR 2 Lakhs	40	33.3%	42.5%
	INR 200001-4Lakhs	29	24.2%	66.7%
	INR 400001-6Lakhs	21	17.5%	84.2%
	INR 600001-8Lakhs	19	15.8%	100%
	Above 8 Lakhs	11	9.2%	9.2%

6.2. Reliability analysis

In Table 2, the overall Cronbach's Alpha value is 0.685, which indicates the alpha as an excellent, good, acceptable, and non-acceptable level. (Konting et al., 2009) interpreted the Alpha Cronbach value as (0.91-1.00= excellent), (0.81-0.90= Good), (0.71-0.80 = Good and Acceptable), (0.61-0.70 = Acceptable), (0.01- 0.60 = Non- acceptable). The accepted value of Cronbach's alpha is 0.7; although, the values above 0.6 are also accepted (Taber., 2018), and referred to as "the acceptable values of 0.7 or 0.6" (Griethuijsen et al., 2014). The item-rest correlation values are between (0.336 – 0.552), which indicates good discrimination.

Table 2. Item Reliability Statistics

Item	**Mean**	**SD**	**Item-rest correlation**	**If item dropped**
				Cronbach's α
PS1	3.39	0.946	0.502	0.605
PS2	3.23	0.923	0.342	0.678
PS3	3.23	0.855	0.336	0.677
PS4	3.18	0.809	0.480	0.619
PS5	3.39	0.873	0.552	0.584

6.3. Descriptive analysis

In Table 3, it shows the descriptive statistic, Shapiro-Wilk normality test is used to analyse the normality of the sample. The test indicated that all the items have <.001 p-value and W-value between (0.866 – 0.883), with 1 being a perfect match. The skewness values showed that the distribution is left-skewed, and the kurtosis values implied that the distribution is platykurtic.

Table 3. Descriptive Statistics

Item	**Skewness**	**Kurtosis**	**Shapiro-Wilk (Normality)**	
			W	***p*- value**
PS1	-0.136	0.0639	0.883	< .001
PS2	-0.353	0.240	0.883	< .001

PS3	0.123	0.0737	0.877	< .001
PS4	-0.252	0.250	0.866	< .001
PS5	-0.317	0.239	0.879	< .001

6.4. Regression analysis

In Table 4, Multiple Linear Regression showed that age, gender, marital status, occupation, and family annual income significantly explain 14% of the variance in price sensitivity {F (12-107) = 1.45, p=0.156}, giving regression equation of:

Price Sensitivity = (-0.0645 X Age) + (-0.0693 X Gender) + (-0.00715 X Marital status) + (-0.3028 X Occupation) + (-0.0729 X Family annual income) + 3.5638

Table 4. Multiple Linear Regression Analysis

Characteristics	***t***	***p***	**beta coefficient**	**Std. error**
(constant)	5.2830	<.001	3.5638	0.675
Age (H1)	-0.1611	0.8725	-0.0645	0.22
Gender (H2)	-0.3662	0.715	-0.0693	0.111
Marital status (H3)	-0.0078	0.843	-0.00715	0.634
Occupation (H4)	-0.670933	0.448667	-0.3028	0.243
Family annual income (H5)	-0.1939	0.52975	-0.0729	0.22825

7.Conclusions

The purpose is to find the correlations between demographic characteristics and customers' price sensitivity. The value of the correlation coefficient lies in the range of -1 to +1. Correlation value -1 reflects the negative association, correlation value +1 reflects the positive association, and the absence of association is reflected by the correlation value 0. The results of the study showed that the five characteristics of customers namely age, gender, marital status, occupation, and family annual income level have a negative correlation to the price sensitivity of customers. The finding showed that older customers are less price-sensitive than younger ones, and also the customers, whose family annual income is above INR 8 Lakhs are less prone to changes in price. In the multiple linear regression model, the value of the beta coefficient is used to state that a higher beta value indicates that the independent variables (age, gender, marital status, occupation, and family annual income) have a more significant impact on the dependent variable (price sensitivity). Occupation has the most negative significant impact on the price sensitivity of customers, followed by family annual income. Marital status has the least negative impact on customers' price sensitivity. The present study is limited only to five demographic characteristics of customers and conducted in one state of the country.

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