Dynamic Pricing and the Economic Paradigm Shift –A Study Based on Consumer Behaviour in the E-commerce Sector

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Abstract- *This article is an attempt to study the impact of dynamic pricing on the behaviour of consumers. Today, dynamic pricing is a common pricing strategy used in several industries such as hospitality, travel, entertainment, e-commerce, retail, electricity etc. Each industry adopts a slightly different approach in pricing the commodities considering their own needs and the demand for the products. This study specifically focuses on the impact of dynamic pricing used in the e-commerce sector on the consumer satisfaction levels and their prospective purchase decisions. t tests and descriptive statistical tools are used in the analysis part. The inferences from the study reveal that the consumers are dissatisfied with the proximity and magnitude of fluctuation in prices. The study also proves that there is no difference in the gender wise reaction towards dynamic pricing.*

Index Terms- Dynamic Pricing, Consumer Price Perception, Online Shopping, Consumer Behaviour.

INTRODUCTION

Dynamic pricing as referred by dictionary is the practice of pricing items at a level determined by a customer's perceived ability to pay. This is not entirely a novel concept. As professor Paul Krugman denoted, 'dynamic pricing is merely a new version of the age-old practice of price discrimination.' Yet, today's price discrimination differs in the sense that current technology has made dynamic pricing not only widely possible, but also commercially viable. The current technological progress has caused a paradigm shift in price determination by taking pricing strategy to a whole new level. Changing minute by minute and sometimes tailoring them individual specific by processing information about what is known about consumer's income, spending habits, tastes etc. is being practically employed.

Among the various pricing strategies, dynamic pricing has become a commonly practiced price discrimination strategy used by sellers to maximize profits by charging different prices for very similar or essentially the same products or services according to the amount of money individual customer is willing to pay. (Haws & Bearden, 2006). This modern pricing tactic stands in refutation of erstwhile economic theories stating that the prices remain sticky for a long time. The postulation of sticky price model by the new Keynesians was based on a number of factors such as costs associated with changing prices (menu costs), fear of price war etc. With the advent of dynamic pricing in the e-commerce sector, we are witnessing drastic fluctuation in prices. A recent report published by Profitero, one of the leading global providers of online competitor pricing data, points that e-commerce giant Amazon.com is executing more than 2.5 million price changes on a daily basis in its pursuit to be the most competitive retailer on the web. This clearly indicates the presence of asymmetric information among the buyers and sellers. As internet has become the platform for facilitating online trade, price changing can be done without incurring any cost. This modern pricing strategy provides plenty of benefits for businessmen as well as consumers. Dynamic pricing enables the producers to sell products at comparatively low costs when the demand is low and compensating this loss when there is an upsurge in demand.

The magnitude and proximity of price variation is highly uncertain and the impact that it could make on the consumer behaviour needs to be studied. The answer to the question whether consumers get offended by the price changes or consider the change as an opportunity to buy products at low prices can help the sellers to devise selling strategies accordingly.

LITERATURE REVIEW

Findings from empirical studies have provided evidence that consumers' price fairness perceptions are influenced by various factors. Overall, consumers tend to rely on several reference points such as past prices, competitor prices, and cost of goods sold when inferring price fairness to make comparisons **(Bolton et al., 2003)**. Conceptually, perceived price fairness is defined as consumers' assessments of whether a seller's price can be reasonably justified **(Xia et al., 2004)**. Fairness is more of a subjective than an objective judgment because it is what consumers actually perceive regardless whether such perception is correct or not. Thus, price fairness perceptions may not be critical until consumers perceive a price as unfair **(Xia et al, 2004)**. Previous research has found that price fairness perceptions can be easily influenced by various factors.

Haws and Bearden (2006) examined how consumers perceived fairness of dynamic pricing. The authors compared a price discrepancy among different sellers and consumers at different times under different pricing setting mechanisms. It was found that consumers reported lowest perceptions of fairness when the comparison was made with other consumers. This may be due to the fact that in dynamic pricing, most transaction characteristics (e.g. seller, product) are highly comparable, and differences in prices charged to buyers are distinct and thus comparable. There is little doubt that such a price discrepancy or inequity, especially when it is to consumers' disadvantage, may lead to a negative emotional state, such as anger, disappointment, and dissatisfaction, which will trigger adverse behaviors, such as complaints, negative word-of mouth, and revenge action against the seller. Although **Haws and Bearden (2006)** attested to the importance of price discrepancy, as a result of comparing with reference to others (consumers), on price fairness perceptions, it is not clear whether price discrepancies at different magnitudes or temporal proximity will lead to different levels of perceived price fairness.

K.Vaitheesewaran (2013) examined the convenience of online shopping "With product getting standardized, specifications getting fixed and the concept of service getting eroded, the post-sale responsibility of the retailer has come down drastically. Hence customers go to stores to explore the product physically detail but by online at a cheaper rate. Heavy discounts of e-commerce firms are possible because of their no warehouse model."

OBJECTIVES

1. To study whether dynamic pricing affects the consumer satisfaction levels.
2. To study whether dynamic pricing has an impact on the prospective purchase decision of the consumers.
3. To study whether there is difference in gender wise reaction towards dynamic pricing.

METHODOLOGY

The data was collected through a structured online questionnaire. The questionnaire was prepared through the inputs taken from the past researches and also from the feedbacks of the pilot study. Thus the validated final questionnaire was used to collect data from 100respondents. 90 out of 100 respondents answered the questionnaire and 3 of them were excluded for marking false inputs. Random convenient sampling technique was used to gather the data. The survey was passed on mostly to the students of different colleges in southern Kerala. The questionnaire was mainly divided into two parts. The dynamic pricing strategy used by amazon.in was used in the questionnaire to study the consumer reaction. The first part of the questionnaire included questions to assess the consumer attitude towards amazon.in. The second part consisted of a hypothetical purchase scenario in which the respondents were exposed to a major real price change and were asked to rate their reaction. Likert scale ranging from 1 = strongly disagree to 5 = strongly agree was used to collect responses from the above two sections. t statistic was used to test the pre and post purchase scenarios. Descriptive statistical tools were also used to analyse the real price variation of the product.

RESULTS AND DISCUSSION

Table - 5.1.Consumer Satisfaction with Amazon services – Pre and post scenario comparison

Paired t-test no.1

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data: satisfaction (Pre-purchase) and satisfaction (post purchase)
t = -4.5908, df = 86, p-value = 1.496e-05
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval: -0.7741633 -0.3062964
sample estimates:
mean of the differences:  -0.5402299
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The T test results shown in table 5.1 reveals that the p value is lesser than the significance level (0.05) hence we reject the null hypothesis that dynamic pricing doesn't affect consumer satisfaction and accept the alternative hypothesis that dynamic pricing affects consumer satisfaction.

Table – 5.2. Respondents' desire to purchase from Amazon – Pre and post scenario comparison

Paired t-test no.2

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data: Buy frequently (pre-purchase) and buy frequently (regardless of dynamic pricing)
t = 2.3193, df = 86, p-value = 0.02275
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:0.04269359 0.55500756
sample estimates:
mean of the differences: 0.2988506
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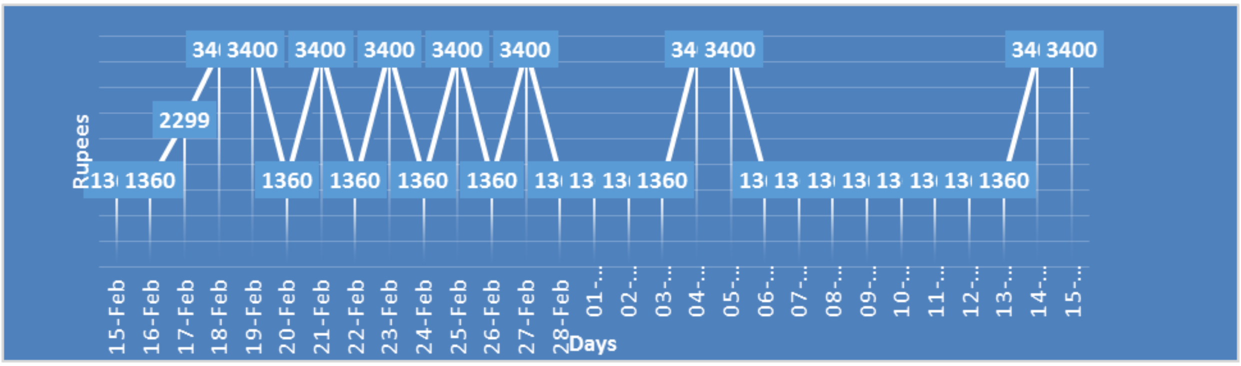
It can be inferred from table 5.2 that the p value is lesser than the significance level (0.05). Hence, we reject the null hypothesis that dynamic pricing doesn't have an impact on Purchase decision and accept the alternative hypothesis that dynamic pricing does have an impact on the purchase decision of the consumer.

Table – 5.3. Respondents' reaction variation towards Dynamic Pricing across different gender groups

Reaction towards dynamic pricing	t value	df	p - value
Buy fewer products from amazon due to dynamic pricing	0.60953	86	0.5439
Switch to amazon's competitors due to dynamic pricing	0.13827	86	0.8904
Feel that the purchase was bad	-1.985	86	0.0503
Overall satisfaction from the purchase	-1.896	86	0.0613

As per the table given above, the reactions of both male and female customers are alike in all the cases. The p values are above significance level (0.05) and can be concluded that there is no considerable difference in the male-female reaction towards dynamic pricing.

Figure – 5.1. Real price variation of the product



The real price variation of the American Tourister bag (product used in the questionnaire) made by amazon.in for the period between 15th February 2017 – 15th March 2017 is shown above. The following table shows the statistical analysis of the price fluctuation

Table – 5.4. Analysis of Price variation

Test Statistic	Values
Range of Variation	1360 - 3400
Mean	2096
Standard Deviation	978.261
Coefficient of Variation	43.39%

The standard deviation and coefficient of variation given in the above table shows that the magnitude and proximity of variation in prices are too high and erratic. This can be regarded as the reason for consumer dissatisfaction.

CONCLUSION

The t test results show that dynamic pricing does have an impact on the consumers' satisfaction level and their prospective desire to purchase. No significant difference was seen in the gender wise reaction towards dynamic pricing, which means males and females alike feel offended by the pricing strategy. Results prove that the consumers are highly dissatisfied with the proximity and magnitude of price variation. The presence of asymmetric information among buyers and sellers make it difficult for the buyers to predict the prices and they feel offended when they realize that the price they paid was much higher than the actual price. The study also concludes that the consumers do not favour continuous and enormous fluctuation in prices. Dynamic pricing should be practiced in such a manner that doesn't affect the fair price perception of the consumers. The extent of price variation should be set in accordance with the Price elasticity of products.

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