

Factors Affecting the Application of Price Discrimination in the Hospitality Business in Yenagoa, Bayelsa State

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ABSTRACT

This research examines the factors influencing the application of price discrimination in the hospitality industry in Yenagoa, Nigeria. To achieve this objective, primary and secondary data were used. The secondary data include books, journals, periodicals, unpublished research materials and the internet and the primary data include interview and a well structured questionnaire administered to one hundred and sixty-five (165) respondents in fifty (50) hotels sampled from the population. The data collected from the questionnaire were analysed using relevant econometric tests such as granger causality, diagnostic, and ordinary least square statistics for the purpose of analysis. The results suggest a positive relationship between the factors influencing the application of price description and the hospitality industry in Yenagoa. On the basis of the findings, the paper concluded that price discrimination is poor in the hospitality industry and recommended that for it to be successful, owners and operators of the industry should invest on credible feasibility study on client classification into political, business, civil servant and social events. Also on daily discounts and commitment from all level of staff, with strong relationship marketing.

Keywords: Price Discrimination, Factors influencing, Application, Hospitality Industry, Yenagoa Nigeria.

INTRODUCTION

A seller who charges different prices for the same good is said to engage in price discrimination. Price discrimination focuses not on differences based on race, gender, or religion, but on differences in customers' preferences for products or services. Sellers attempt to increase profits by matching prices of products to customers' willingness to pay. In a non discriminating market (one with just one price for a product) some customers would be willing to pay even more and others would buy the product only if it were a bit cheaper. In both cases, money that could be spent by customers is not spent. By recognizing different demands and sensitivities among consumers and adjusting prices accordingly, price discrimination segments the market, providing more attractive options to more customers and making them more likely to buy. (Khan and Jain 2007)

In the 1920s and 1930s, English economist, Arthur Pigou, outlined three degrees of price discrimination. In the purest type, first-degree discrimination, the price varies with every sale as the vendor tries to squeeze as much as possible from each customer. This occurs when buyers and sellers haggle over the prices of common consumer good in a bustling outdoor market. While common in some cultures, first-degree discrimination is relatively rare in advanced economies because the seller must work relentlessly with every customer to reap the maximum each is willing to pay. Khan and Jain (2007) focused on the patterns and impact of second- and third-degree price discrimination, which are far more common in most economies.

In second-degree discrimination, the price of a good depends on its quantity. A super market operator buying dozens of cartons of milk can pay a fraction per milk compared to a bachelor buying a few tins for yet another solitary breakfast of tea. This difference in retail price is dictated by the wholesale cost retailers pay for volume products. Discrimination is an explicit strategy to alter retail price beyond what is needed to simply recoup differences in wholesale cost. This nonlinear pricing strategy, the "bulk discount" in which twice as much quantity does not cost twice as much money, segments the market by allowing more customers to find appealing size-price combinations. (Dastidar, 2006.) "The real application of this is quantity-based segmentation, not quality segmentation. A customer had to buy a larger size than one would buy at a supermarket.

Third-degree price discrimination, or micromarketing, exploits differences in demand from one community to the next by varying prices from store to store. Anyone who has saved a few naira by buying toothpaste and batteries at one supermarket down the street rather than across the road had experienced the third degree of price discrimination. “With store-based pricing, there’s a sense of arbitrage. This cannot be prevented because of the inherent imbalance between markets that are exploited in third-degree discrimination largely due to imperfect market information. (Dastidar, 2006).

While second- and third-degree price discrimination have been recognized and practiced for decades, there is sparse empirical evidence of their relative impact on demand and profit. Khan and Jain created mathematical models to study how several factors, including product size and store location, influenced sales. They then were able to predict how second- and third-degree price discrimination, separately and together, could impact on profits positively. Most researches on price discrimination concentrates on either the manufacturing sector or on wholesale and retail business. But this study is taking a look at its profitability on the hospitality industry which is the major striving business in Yenagoa. Again, despite its identified benefits to retailers most hotels in the hospitality industry had not effectively annexed this strategy in their pricing policies. It therefore downed on the researchers to identify the factors responsible for this poor implementation, and to determine its effect on profitability in the hospitality industry in Nigeria. Thus, the objective of this study is to examine the relevance of price discrimination on the basis of profitability, business survival, sales volume and client patronage to determine its applicability in hotel services in the process of billing their customers. To achieve this objective, the paper was divided into five interconnected sections. The next section (second) presents the literature on price discrimination. The third section provides the materials and methodology while the fourth section presents the results and discussion of findings and the fifth and final section presents the conclusion and recommendations.

LITERATURE REVIEW

The Nature and Scope of Price Discrimination

One of the main incentives of starting a business is to earn profit through effective pricing strategy. How can one know what prices to choose for their goods and services, is a question answered in Micro Economics, which provides several different pricing strategies to maximize accounting profit. There are many pricing strategies, but the ones that the researchers will focus on are: **Competition-based, Cost-plus, Creaming or skimming, Penetration, Price discrimination, Psychological/Odd**, and by assessing the business situation one can figure what is best for them.

Competition-based pricing: This involves checking what competitors were setting their price on the same good and fixing same price or adjusting it to fit individual pricing policies.

Cost-plus pricing: This involves the process of figuring out what the completed product will actually cost and then adding on some extra cost to price to make some profit. The problem with this is that if the price is too low, customers might not buy it as much if they wonder about the quantity. But on the other hand if the price is too high then the customers might go for the substitutes on that market for the same good.

Creaming or skimming happens when a new product is entered in the market and is set at an initially high price to turn high profit. Thus it is much like how milk gets skimmed and the top part has the cream, and in this example the cream is the money. It is usually done to cover the cost of investment on research that had to be done to make the product. A good example is iPod’s, GPS systems, VCR’s, and new types of video games when they first entered the market, but after a while their prices came down to more of an affordable price. This strategy is done to get “early adopters” for a product/service. The people who get a rush off of getting the product first (their demand is inelastic) will not mind to pay the higher price. These people that buy it first are relatively less price responsive because either their need to have that product is greater than others or they know the value of the good or service better than others. Skimming is used only for a limited time to get back most of the money that was invested to create the product. This is a short-term strategy and other strategies should be used such as; **penetration pricing**. Which is a process of tagging new products with low prices to attract customers at the beginning, so as to get people to try it because of such a low price. (Adachi 2002)

Price Discrimination is charging a different price on the same good or service to different people. Basically the seller tries to charge the highest price they believe the individual consumer is willing to pay. There are many types of price discrimination. Price discrimination requires segmentation of the market and that whatever it is

cannot be resold. Such as movie tickets at different times or for different ages. Premium pricing is a form of price discrimination which applies to many luxuries that appear to be unique or special from the buyers' standpoint. Another pricing strategy that deals with a customer's perspective of a product is **Psychological/Odd pricing**. Psychological pricing can be the same as quantity discount; the buyer may likely purchase a product due to reduction in price. The consumer decides through an emotional response, instead of a rational basis. The communication net work systems in Nigeria adopt this for their internet product services.

Price discrimination is identified as the practice of firms to charge different prices for the same product to different consumers given that the price differentials cannot be explained in terms of differences in costs of providing the good or the service. Varian (1989) classified price discrimination into three groups

a) First Degree Price Discrimination : A different price is charged for each unit of the product sold such that each unit is bought by the customer at a price that equals his /her maximum willingness to pay for the unit . Notably, for this the seller has to have detailed information regarding the maximum each consumer is willing to pay for any given unit of the product

b) Second Degree price discrimination : Every consumer faces the same price schedule but the per-unit price varies with the number of units sold . In this case , the seller is not able to distinguish between different types of customers and instead charges buyers with smaller demands more compared to those with larger demands . Since the discrimination is based upon quantity, this type of discrimination is also identified as quantity discrimination (Perloff, 2007)

c) Third Degree price discrimination : Different prices are charged to different consumers , but each consumer pays the same per-unit price for each unit of the product bought . The seller segments the market into different groups according to varying price sensitivities of consumers and charge relatively higher prices to buyers with inelastic demands This is also known as multimarket price discrimination (Perloff 2007, Adachi 2002)

For any product or service, different people have different prices they are willing to pay. The downward sloping demand curve in economics is a graphical way of saying that a seller will get more buyers at a low price and fewer buyers at a high price. For a business that cannot price discriminate, this poses a problem. What price to offer? There might be some consumers willing to pay ₦80, but twice as many consumers willing to pay ₦50. If you set the price at ₦50, you get more revenue, but the people who are willing to pay ₦80 are happy that your offering was ₦30 less than they were willing to pay. (Economists call this consumer surplus.) The ideal situation for the business would be to sell to some consumers at ₦80 and others (the price sensitive ones) at ₦50. Price discrimination – charging each consumer close to what he or she is willing to pay, increases revenue for the business. The demand curve below illustrates the point.

From the graph in figure 1, the mc of a discriminating seller intercept the MR, D, AR, and price at ATC with a greater margin for profit while that of the non discriminating seller has a lower profit margin because MR and MC are not equal at AR.

Business strategists are forever trying to figure out ways to price discriminate. For commodities it can be difficult, but some markets are conducive to price discrimination. The classic example is the airline industry. Travelers have different itineraries and routes, and the airlines purposely impose complex pricing rules (e.g. cheaper if you stay over a Saturday) in order to price discriminate. Business travelers typically end up paying more than leisure travelers, and if you fly into or out of a small city you pay more than between large cities. On a flight with 100 passengers, it is possible that everyone paid a different price for the seat – 100 different prices for the same product. Consumers often resent these schemes, but economists love them. (Canto 2008)

Movie theaters price discriminate by charging lower admission for kids and seniors. Everyone gets the same product – a seat in the theater – but consumers that are more price sensitive pay less. Car dealers discriminate based on how much the customer haggles. Sellers of new products, especially consumer electronics, often price discriminate over time. (Welker 2009)

Buyers often feel like they are being played for chumps when they learn about price discrimination, but many economists absolutely are crazy about it and wish we had more price discrimination. Businesses are encouraged to make prices secret – create a fog of uncertainty – to get customers to accept prices offered to them. Preston McAfee, an economics professor at the California Institute of Technology, gave a talk about prices. He talks about Dell selling the same computer at different prices based on how the consumer identifies themselves at the website small business, large business, home users. (Welker, 2009)

Firms are the ones that gain from price discrimination. Firms wish to sell their products at the most profit-maximizing price, i.e. the maximum price the consumer would like to pay. Taking into consideration different people, who might want to pay different prices, firms discriminate among consumers, and the ones who are willing to pay more end up paying that amount. The movie ticket is a great example that everyone can relate to. Museums, with special prices for infants and university students, who can't afford an expensive ticket, are another example. In terms of total surplus, society is worse off. Society would be best off where price equals marginal cost, but in the case of price discrimination, on the graph, price no longer equals marginal cost, and this creates what is called the dead weight loss, which represents the loss of total surplus to society. The total surplus of the society is lower, because a dead-weight-loss appears, and though producer surplus increases as consumer surplus decreases, it doesn't entirely make up for it. (Esssia 2004, Adachi 2002)

Empirical evidence

Several studies had been done on price discrimination, profitability and social welfare. Most of them were based on self developed models to test its profitability and social welfare. Case study analysis had been the widely used design for all such studies because it is a real life corporate or business phenomenon. (Appah, 2011). Since this method is most used by authors, we will limit our review to such studies. Table 1 summarizes the methodology, sample and findings of these studies.

Table 1. Review of selected empirical studies

Authors	Methodology and sample	Main findings
Cecila Canto(2008)	A study of selected airline businesses in Europe. Content analysis with descriptive statistics	Most airlines are demanding for and had already adopted third degree price discrimination and found to be profitable
Welker (2009)	Content analysis and descriptive statistics on selected business out-lets and general public opinion	The result indicated that it gives better profit to a discriminating monopolist with the society losing due to dead weight loss in supply.
Khan, and Jain (2005)	Observation of selected super stores on sales and revenue profile. Developed a model to test the relationship between price discrimination and profitability	All degrees of price discrimination are profitable. But with a good combination of 2 nd and 3 rd degree, a firm may make more profit.
Simon, Cowan, 2007.	Survey of firms on price discrimination and social welfare. With empirical analysis	Price discrimination contributes to social welfare by improving on the sellers wealth maximization which in turn improves on the gross domestic growth of the society
Layson, (1998).	A survey of firms with success in price discrimination and the demand patterns of the products	The success of price discrimination is dependent on the demand elasticity of the product to the individual buyer.

MATERIALS AND METHODS

The primary data for the study were generated through the administration of questionnaires conducted to evaluate the factors influencing the adoption of price discrimination in the hospitality industry in Yenagoa, the capital of Bayelsa State, Nigeria on two hundred and thirty (230) respondents (managers, supervisors and accountants) on fifty (50) hotels. The study was conducted between September to December 2012. The Yaro Yamen model was used for the purpose of sample size determination. A total of one hundred and sixty five (165) usable questionnaires were completed and used for the analysis representing sixty five percent (66%). The modified questionnaire was pre-tested using ten (10) hotels in the study. A reliability and internal consistency test was done on the collected data using Cronbach Alpha and Pearson Product Moment Correlation Coefficient

model, to explore the consistency of the questionnaire. The result of the reliability test shows that the questionnaire design is highly reliable and consistent at 0.732 and 0.781. Excel software was used to transform the variables into format suitable for analysis, after which the econometric view (e-view) was utilized for data analysis. The ordinary least square regression, granger causality, unit root and diagnostic tests were adopted for the purpose of data analysis. Gujarati and Porter (2009), document that the ordinary least square regression analysis shows the direction of causing/affecting between the dependent and independent variable. Brook (2008) suggested that unit root test such as Dickey-Fuller, Augmented Dickey-Fuller, Philips-Perron and Kwiatkowski, Philips, Schmidt and Shin (KPSS) are used to determine the stationarity and nonstationarity of variables. Granger Causality test refers to the ability of one variable to predict (or cause) the other (Kozhan, 2010). These are to text the factors affecting the implementation of price discrimination in the hotel business in Bayelsa State in Nigeria, while the Bivariate correlation coefficient model was used to test the relationship between price discrimination and profitability. The use of this test is informed by the fact that correlation is a model with consistency and reliability. The bivariate table was useful due to the ranked and scaled questionnaire designed for the study. The regression model is:

$$Y = f(X) \dots\dots\dots (1)$$

Where X are the factors that determines PD implementation

$$Y = f (X1, X2, X3, X4, X5) \dots\dots\dots(2)$$

Where X1 = demand elasticity, X2 = market information, X3 = presumed profitability, X4 = size and class of hotel, X5 = location of the hotel.

$$PD = \alpha + \beta_1DE + \beta_2MI + \beta_3PP + \beta_4SC + \beta_5LH + \varepsilon \dots\dots\dots(3)$$

The a priori expectation of the linear model is presented below

$$\partial DE/\partial PD > 0; \partial MI/\partial PD > 0; \partial PP/\partial PD > 0; \partial SC/\partial PD > 0 \text{ and } \partial LH/\partial PD > 0$$

Where: PD = Price discrimination; DE = Demand elasticity; MI = Market Information; PP = Presumed profitability; SC = Size and class of the hotel; LH = Location of the Hotel; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficients of the regression, α is the intercept of the regression and ε is the error term capturing other explanatory variables not explicitly included in the model.

RESULTS AND DISCUSSION

Table 2 presents the multiple regression result and the results indicate that PD is significantly related to DE, MI, PP, SC and LH (i.e. 0.0006, 0.0033, 0.0275, 0.0307 and 0.0458 is greater than the critical value of 0.05). This implies the acceptance of the alternative hypothesis that the elasticity of demand for the service, the available market information about the price of other hotels in the locality, the presumed profitability of price discrimination to the operator, the size and class of the hotel and its localization affects the efficiency and implementation of price discrimination in the hotel business in Bayelsa state. This agrees with the findings of Cecila Canto(2008) and Layson, (1998).

The table 3 presents the Breusch-Godfrey serial correlation LM test. The result indicates that there is no autocorrelation because the probability of 0.230385 is greater than the critical value of 0.05.

able 4 shows the White Heteroskedasticity test and the result indicates that there is no evidence of heteroskedasticity. That is, 0.176969 is greater than 0.05.

The table 5 presents the Ramsey RESET test for model specification and the result indicates that the model is properly formulated.

Table 6 presents the Augmented Dickey-Fuller Unit Root test for stationarity of the variables. The results indicate that all the variables are stationary at level data. That is, PD, DE, MI, PP, SC and LH of -4.071106, -3.547454, -4.036829, -3.678941, -4.539028 and -3.848270 is greater than the 1% and 5% values of -3.4722 and -2.8795. This implies that all the variables are stationary at level data. The stationarity at level data implies that ordinary least square can be used for analysis (Asterious and Hall, 2007; Brook, 2008).

The table 7 shows the pairwise granger causality test for the dependent variable (PD) and independent variables (DE, MI, PP, SC and LH). The results indicate that DE granger cause PD and PD does not granger cause DE. This is also the same with PD and MI, PP, SC and LH respectively.

CONCLUSION AND RECOMMENDATION

The study examines the factors influencing the application of price discrimination in the hospitality industry in Yenagoa the capital of Bayelsa State, Nigeria. To achieve this objective, a well structured questionnaire titled price discrimination strategy and profitability in the hospitality industry, was administered to one hundred and sixty five (165) respondents mostly accountants and managers of the fifty (50) hotels sampled in the study. The results revealed that the factors of Demand elasticity; Market Information; Presumed profitability; Size and class of the hotel and Location of the Hotel; are very important in the application of price discrimination in the hotel business. To effectively and efficiently determine the most suitable price at every service in hotels, the basis of billing customers and the handing of indirect costs must be strategized . The findings suggest that most of the hotels sampled in the study do not adopt price discrimination; rather, they apply fixed prices for their services.

Therefore, the paper concluded that price discrimination is not adopted in the hotel business in Yenagoa. On the basis of the conclusion, the following recommendations are provided:

1. Hotel owners and operators should be educated on the need to apply price discrimination in the billing system.
2. Appropriate and reliable costs drivers should be identified that would provide the basis for billing hotel services.
3. Hotel owners and operators should be given the needed seminars and workshops on the merits of price discrimination compared with the traditional fixed price technique.
4. Researchers in the field of management accounting should train owners and operators of the industry to invest on credible feasibility study on client classification into political, business, civil servant and social events. Also on daily discounts and commitment from all level of staff, with strong relationship marketing.

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TABLES AND FIGURES

Table 2: Ordinary least Square Multiple Regression

Dependent Variable: PD

Method: Least Squares

Date: 4/23/113 Time: 15:13

Sample: 1 165

Included observations: 165

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.601174	2.037506	2.258238	0.0253
DE	0.328328	0.093452	3.513332	0.0006
MI	0.266254	0.089345	2.980057	0.0033
PP	0.293073	0.102981	2.845894	0.0275
SC	0.236823	0.115680	2.047225	0.0307
LH	0.245022	0.103634	2.364301	0.0458
R-squared	0.504108	Mean dependent var		12.76364
Adjusted R-squared	0.425622	S.D. dependent var		2.969132
S.E. of regression	2.750458	Akaike info criterion		4.897098
Sum squared resid	1202.838	Schwarz criterion		5.010042
Log likelihood	-398.0106	F-statistic		6.422807
Durbin-Watson stat	1.925425	Prob(F-statistic)		0.000018

Source: e-view output

Table 3: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	8.269744	Probability	0.230385
Obs*R-squared	15.72562	Probability	0.370385

Source: e-view output

Table 4: White Heteroskedasticity Test:

F-statistic	1.418153	Probability	0.176969
Obs*R-squared	13.91325	Probability	0.176985

Source: e-view output

Table 5: Ramsey RESET Test:

F-statistic	1.009835	Probability	0.366633
Log likelihood ratio	2.109047	Probability	0.348358

Source: e-view output

Table 6: Unit Root Test (ADF)

Variable	ADF	1%	5%	Stage
PD	-4.071106	-3.4722	-2.8795	Level
DE	-3.547454	-3.4722	-2.8795	Level
MI	-4.036829	-3.4722	-2.8795	Level
PP	-3.678941	-3.4722	-2.8795	Level
SC	-4.539028	-3.4722	-2.8795	Level
LH	-3.848270	-3.4722	-2.8795	Level

Source: e-view output

Table 7: Pairwise Granger Causality Tests

Date: 12/13/11 Time: 14:57

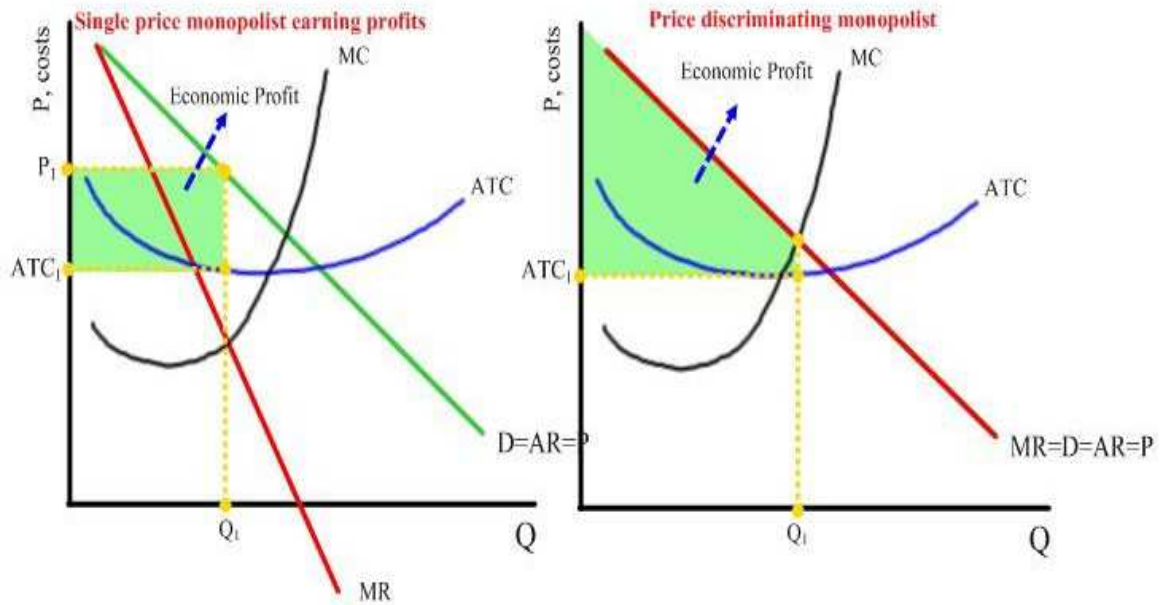
Sample: 1 165

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
DE does not Granger Cause PD	163	1.54590	0.02633
PD does not Granger Cause DE		2.54603	0.08160
MI does not Granger Cause PD	163	1.45180	0.01725
PD does not Granger Cause MI		1.68234	0.18925
PP does not Granger Cause PD	163	0.38804	0.04903
PD does not Granger Cause PP		1.55125	0.21519
SC does not Granger Cause PD	163	0.21019	0.03065
PD does not Granger Cause SC		4.20803	0.01658
LH does not Granger Cause PD	163	0.04156	0.04930
PD does not Granger Cause LH		1.69897	0.18620

Source: e-view output

FIGURE 1. demand curve for price discrimination and profit maximization.



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