European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.15, No.19, 2023

Impact of Green Marketing Mix (7Ps') On Customer Satisfaction: A Study on Natural Gas

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Abstract
Natural gas is one kind of environment friendly product and researcher can use green marketing mix for satisfying the customers. It becomes an increasingly important sector in Bangladesh. The main intent of this study is to examine the impact of green marketing mix (7Ps') elements on natural gas customer satisfaction. The data of this paper were collected by using structured questionnaire from sample of 100 people from Chittagong district of Bangladesh. Data were analyzed with the help of software SPSS by using the statistical techniques regression. The findings of the study showed distribution and price negatively affect the satisfaction levels of natural gas users. So some recommendations have been given for future improvement in customer satisfaction.
Key words: Customer Satisfaction, Green Marketing Mix, 7Ps'
DOI: 10.7176/EJBM/15-19-02
Publication date: December 31st 2023

1.Introduction

Natural gas is fully a natural product which is naturally extracted and distributed with less environmental effect. Natural gas is a clean burning fuel; its combustion emits fewer pollutants into the atmosphere than other fossil fuels.(islam2007) According to the American Marketing Association green or ecological marketing refers to the "the study of the positive and negative aspects of marketing activities on pollution, energy depletion and non-energy resource depletion" (Henion and Kinnear 1976).According to Herbig et al (1993) green marketing refers "to products and packages that have one or more of the following characteristics; they are less toxic; are more durable; contain reusable materials and/or are made of recyclable materials". It is a great concern among the concerns to undertake such initiatives that will help to mitigate the destruction of natural gas and environment at the time of production, transportation and distributaries. (Islam, 2007). Natural gas is the most important fuel for Bangladesh – both in terms of energy and diversity of use. Bangladesh Oil, Gas and Mineral Resources Corporation (Petrobangla) is entrusted with the responsibilities of the gas and coal sectors of Bangladesh. Subsidiaries under Petrobangla are responsible for exploration, production, transmission, distribution and marketing of natural gas to the end users. The port city of Chittagong is the commercial capital city of Bangladesh. Due to expansion of industry and commercial customers and as the increasing demand of natural gas Bangladesh government took the positive initiative to build separate gas Distribution Company for better management and efficient customer service for grater Chittagong region. Karnaphuli Gas Distribution Company Ltd. Marketing of gas to the customers ranging from large power and fertilizer plants to small households and business is the responsibility of five marketing companies under Petrobangla. These companies are namely Titas Gas Transmission & Distribution Company Limited, Bakhrabad Gas Distribution Company Limited, Jalalabad Gas Transmission & Distribution System Limited, Paschimanchal Gas Company Limited and Kamaphuli Gas Distribution Company Limited. Each company has its own marketing franchise area covered by a fairly extensive distribution network. Natural gas is a fossil fuel formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure over thousands of years. Natural gas is a nonrenewable resource because it cannot be replenished on a human time frame. Natural gas is a hydrocarbon gas mixture consisting primarily of methane, but commonly includes varying amounts of other higher alkenes; it is also the main source of the helium (2-7%) and sometimes a usually lesser percentage of carbon dioxide, nitrogen and hydrogen sulfide.

2. Literature Review

McCurdy,(2013) identified efficient energy distribution and consumption can satisfy the new demand in future at well price. Moreover natural gas can develop in a sustainable manner for efficient use of gas at home, business and industrial sector.

Arslan and Gogce,(2013) stated green marketing practices have become foundational value adopted by businesses and they compete in environment-friendly manner with consumer and legal responsibilities and protect and also contribute to environment. Moreover he found that the increasing importance of the protection of natural environment is the top item on the agenda of the world market and particularly relevant to businesses.

The term green marketing mix has its origins with the use of primary marketing mix tools of product, price, place and promotion to divide green marketing into four main strategies (Ginsberg & Bloom, 2004)

Smith. & Perks,(2011) showed that management and other employees of the business should become enthusiastic about greening all the business functions. Businesses should consciously strive to use resources more efficiently in the manufacturing/operations function and distribution/logistics function, as this could give businesses a competitive advantage that could positively impact on the marketing sales function.

Jean-François Cirelli president of Euro gas, stated that natural gas can be with us for a very long time. The reserves of gas in conventional reservoirs will provide enough to meet more than 60 years of demand at today's consumption rates. Moreover he stated that Natural gas offers solutions to the world's economic and environmental challenges in a secure and sustainable way because it is the cleanest of hydrocarbons, easy to control and efficient in distribution and use.

As time progresses and marketing approaches improve, the McCarthy 4P marketing mix model has intervened with a renewable P model. Some researchers propose have more Ps than the traditional 4P elements applied only to markets (Goi, 2009). Goi (2009) argue for new P elements to be introduced into the marketing realm to cope with increasingly competitive circumstances, by adding people, physical evidence, and process elements into the 7P framework.

Companies that adopt the green marketing mix strategy only need to do a little twist by implementing environmental programmes; not only can they can reduce cost they also do not need to promote their green initiatives lavishly. Companies that use defensive green strategy do so as a response to external pressures from environmental groups and competitors. These companies usually focus on long-term benefits and view green activities as opportunities to create innovative products and technologies.

The dimensions of those variables are: 1) Product: materials, quality, benefits, packaging, design; 2) Price: value, impact on quality life, and environment; 3) Place: distribution process; 4) Promotion: communication/advertisement of ecofriendly products eco-friendly life style, campaign; 5) People: responsiveness, knowledge of employees; 6) Process: production process, recycling process; 7) Physical Evidence: ambience, store concept, brand image; 8) Customer Satisfaction: expectation, repurchase.(Novita .et al.,2018)

Green Product Green products (also referred to as environmentally friendly products or environmentally conscious products) are designed to lessen the consumption of natural resources and minimize harmful environmental effects during their entire life-cycle (Tsai, Chuang, Chao, & Chang, 2012). Green Promotions to communicate the meaningful environmental information to consumers and it cannot be considered as an effective strategic tool unless it is supported by other corporate activities. The environmental statement can be enhanced by performing other activities, such as sponsorship of environmental events or minor product modifications. Green distribution is about how companies manage logistics to reduce their carbon footprint. Instead of marketing an imported product to a country, a company can collaborate with local producers using licensing process. This allows the product to be produced locally and reduce a company's shipping costs as well as their carbon footprint (Solaiman et al., 2015). Green Pricing The pricing of green products is very crucial whereby the value can be added to the product for changing its appearance, functionality and through customization. (Shrama & Goya, 2012). Green Process includes Processes that we offer within the environmentally friendly program must reflect our overall commitment to, and understanding of, the implementation of green concept throughout the product.

'P' for participants is powerful because, for green programs to work, the supplier and their staff are brought into direct contact with customer. People also make the environmental product available to customer. The participants must be involved through intensive and ongoing training, communication, involvement (team development), and must be knowledgeable about product.

Almost all services include some physical elements even if the bulk of what the consumer is paying for is intangible. The Physical evidence is a holistic validation of the impact of the green strategies and use environmental friendly instrument for delivery of green product. The research based on identifying the impact of 7p of green marketing mix on customer satisfaction for natural gas.

3. Methodology

Descriptive research has been conducted for this study. Data have been collected from primary sources by using the personal interview with using close ended questionnaire. Five-point Likert scale has used to construct questions where each statement stands for:1= Very dissatisfied,2= Somewhat dissatisfied,3= Neither satisfied or dissatisfied,4= Somewhat satisfied,5= Very satisfied. 100 respondents of Chittagong city were surveyed through convenience sampling method. Descriptive statistics, Pearson Correlation and Regression analysis were employed to analyze the collected data from the survey. In this study, the independent variables were: Product (X1), Price (X2), Place (X3), Promotion (X4), Process (X5), Physical Evidence (X6), People (X7). The dependent variable was Customer Satisfaction (Y).The Null Hypothesis is Ho: There is no positive impact of 7p of green marketing on customer satisfaction. The alternative hypothesis is H1: There is positive impact of 7p of green marketing on customer satisfaction.

4. Analysis and Discussion:

Regression analysis is a statistical technique used to measure the dependence of one variable, the dependent variable, on one or more other variables, the explanatory or independent variables in order to estimate the value of the former in terms of know values of the later (Gujarati,2003).
Multiple regression analysis is an analysis of association in which the effect of two or more independent variables on a single interval sealed dependent variable are investigated simultaneously. (Zikmund,et.al.2011)
After classifying the major influencing variables i.e. Customer Satisfaction, Product, Price, Place, Promotion, Process, Physical Evidence and people. These components have highly correlated elements which were used for regression analysis as an independent variables(7ps') and

dependent variables(customer satisfaction). The regression have been done using the following software SPSS and result have been shown by the table:1,1 (a) and 1(b) Regression analysis of impact of Product, Price, Place, Promotion, Process, People, Physical Evidence on Customer Satisfaction. The result of regression analysis reveals that, there is a significant relation with dependent variables and independent variables (i.e Product, Price, Place, Promotion, Process, Physical Evidence and People) in our used model. So the alternative hypothesis is accepted. Model summary indicates that, R=0.641i.e 64%.This indicates the linear relation between dependent and independent variables as whole. The coefficient of determination R-squared is 0.359 on converting the R squared value to percentages 36% indicates the goodness of fit of the regression model. Table:1 F test of the regression analysis of impact of Product, Price, Place, Promotion, Process, Physical Evidence ,people on Customer Satisfaction. Table: 1(a) and 1(b) exhibit the result of t and F tests are found to be significant. The Study measure customer satisfaction affected product, price, place, promotion and others. Regression coefficient were shown by Table: 1 (b), the shows value of beta scores which represents the predictor of the dependent variable".

The regression the coefficients for the predictor variables:

Product,β1=0.417,priceβ2=-0.148,placeβ3=-0.042,promotionβ4=0.02b,processβ5=0.039,physicalevidenceβ6 =0.038,peopleβ7=0.156

The Model present by Multiple Regression as Follows:CustomerSatisfaction=2.196+(0.417)(X_1)+(-0.148)(X_2)+(X_3)(-0.042),+(X_4)(0.026)+(X_5)(0.039)+(X_6)(0.038)+(X_7)(0.156)

Here Variable, X_1=Product, X2=Price, X3=Place, X4=Promotion, X5=Process X_6=Physical Evidence, X7=People

In the table 1 (b) coefficient of values beta have showed the change in a variable, when all other variables are held constant. When we analysis the coefficient values for variable "Price" we can say there is decrease 0.148 units in of customer satisfaction for natural gas for every units increase in Price keeping other variables of the model constant.

5.Conclusion:

The research identifies the green marketing mix for 7p approaches has positive effect on customer satisfaction. The price and place have negative effect on the customer satisfaction of natural gas. The green product is based on physical evidence, people and process. KDGCL serve the whole the Chittagong city customers and the company try to improve the physical evidence and process for ensuring customer satisfaction but unable to reduce price.

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Table :1 Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.641[a]	.410	.359	.40535	.410	7.918	8	91	.000

a. Predictors: (Constant), Promotion, Place, Price, Product, Process, Physical Evidence, People

b. Dependent Variable: Customer Satisfaction (Source: Survey)

Zikmund, W. G., Babin, B. J. and Griffin, M. 2011.*Business Research Methodology*.8th (ISE).Canada :South-Western cengage learning, 2011

Table 1(a) ANOVA[b]

Model		Sum of Squares	Df	Mean Square
1	Regression	10.408	8	1.301
	Residual	14.952	91	.164
	Total	25.360	99	

b. Dependent Variable: Customer Satisfaction (Source :Survey)

Table:1(b) Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.196	.399		5.510	.000
	Product	.417	.076	.492	5.503	.000
	Price	-.148	.055	-.231	-2.669	.009
	Place	-.042	.056	-.069	-.751	.454
	Promotion	.026	.061	.038	.429	.669
	Process	.039	.059	.062	.667	.506
	Physical Evidence	.038	.060	.061	.639	.525
	People	.156	.078	.259	2.005	.048
						.

a. Dependent Variable: Customer Satisfaction (Source :Survey)