

The Impact of Marketing Mix on Brand Equity in Pharmaceuticals: The Mediating Role of Perceived Quality

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Abstract

In the competitive environment of pharmaceutical companies, brand equity plays a pivotal part in impacting the trust of a customer, brand loyalty, and product positioning. This research analyses the effect on brand equity by aspects of marketing mix viz product, pricing, placing, and advertising, with a specific emphasis on the mediation of perceived quality. Using an survey research strategy and deductive research approach, data were assembled from physicians of different specializations from various public hospitals in Lahore, Pakistan by distributing survey questionnaires. The sampling technique was convenience sampling and 105 completed questionnaires were considered for final data analysis. The outcomes have illustrated that marketing mix aspects have a positive impact on brand equity and have a moderate positive influence on perceived quality. Nonetheless, perceived quality does not indicate a direct influence with significance on brand equity. However, it plays a mediating role between marketing mix and brand equity. The conclusion recommends that marketers of pharmaceutical companies should emphasize on placing, price and promotion aspects of the marketing mix to increase the value of a brand.

Keywords: Marketing Mix, Brand Equity, Perceived Quality

Introduction

Pharmaceutical industries rely on facts and figures for their products' sales and marketing. Identifying the difference between the latest medicines and their rivals was not complicated, and doctors and patients both got their benefits easily, i.e. effectiveness and or adverse reactions. Nonetheless, no more....because the industry's perspective is evolving, competition is increasing, the channels are drained, and novel medications are not generally showing advancements in therapy, pharmaceutical

industries explore modern ideas to make their products different from others and increase their products' shelf life. As a consequence, branding came into view as an engaging way to comply with. It's been approved as productive in other consumption items merchandise; therefore, it should also be applied in pharma companies (Elina Petrova, 2013)

The marketing mix is defined by Kotler and Armstrong (2012) as an assortment of tools of marketing that an industry utilizes to attain its aims in the directed market constantly. Sumarmi & Soeprianto (2010) elucidated that the marketing mix is a blend of variables/activities that are the fundamentals of the marketing system, viz. product, pricing, placing and advertising. At the same time, the marketing mix is illustrated as a strategy for merging activities of marketing to develop the maximum blend to achieve the most satisfactory outcomes (Marpaung, 2020b). The factors of the marketing mix are as follows: The product involves every single thing which can be presented by a manufacturer that captivates the mindfulness, desire, exploration, buying, utilization, or expending by the market to accomplish the requirements or demands, whether in the manifestation of services or goods. Pricing plays a crucial role since it can clarify the industry's financial gains and persistence. Price influences the modification of the marketing plan of action taken as well. The elasticity of the pricing of a product will also impact sales and demand (Alma & Buchari, 2005). Kotler and Armstrong (2012) expressed advertising as a variety of methods for companies to liaise the benefits of their products and persuade customers to purchase their products. Placing channels are sources of carrying the products from manufacturers to customers. A placing channel is a company's tool which is involved in the procedure of producing a product or service accessible to customers or business buyers.

Aaker (1991) expressed brand equity as the value customers connect with a brand, as mirrored in the aspects of awareness of a brand, loyalty of a brand other patent assets of a brand. According to Swait, Erdem, Louviere & Dubelaar (1993), the customers' implied evaluation of a market's brand with distinctive brands corresponding to a market with no brand distinction. Brands function as an indicator of the kind of quality of a product or service and the dependability and image of a brand. Customer-based brand equity arises when the consumer is acquainted with the brand and carries some approving, powerful, and distinctive brand associations in the remembrance. Kim & Hyun (2011) depicts that perceived value price is an eminent feature of a brand and hence, during persuading customers, captivate attention to conceiving of the brand, nonetheless, will end in disruption of comprehension of superior quality. Whilst it shows that the product's quality conforms with price. The effect of pricing on brand equity is dependent on the attributes of a market; therefore, in the market of high-tech, the firm's purchasers view low costs as inconsiderable as compared to others' standard of choosing an item, and think it preferable to pay expensive costs to further modern equipment.

Health marketing, sales assistants in the role of pharmaceutical reps, and description employees are the main contributors to marketing drugs to doctors. Medication description is a plan utilized by pharma industries to notify doctors regarding salesperson's items to convert doctors' prescription behaviors and to enhance the equity

market for a specific medicament. By sales calls, pharma-selling employees are instructed to inform doctors and other medical assistants. Drug description brings a large number of advantages, involving increased selling, strengthening patient clinical effectiveness, advertising clinical research, and increasing doctor's awareness (Al Thabbah et al., 2022). Therefore, this study aims to find the relationship of marketing mix strategies on brand equity in pharmaceutical industry with mediating role of perceived quality. However, there is a noteworthy gap in analyzing the impact of different elements of the marketing mix involving product, price, place, and promotion on brand equity particularly in pharmaceutical companies. Although the marketing mix has been verified as a prime mover of brand equity in other different sectors, its particular influence in the pharmaceutical industry was not searched in detail. Since the pharmaceutical industry continues to advance with an increase in competition and moving consumer beliefs, it is critical to recognize how every element of the marketing mix impacts brand equity and perceived quality.

Literature Review:

Marketing Mix and Perceived Quality:

Intellectual, psychological and attitudinal elements of consumers have a significantly constructive impact on the marketing mix of organizations. Omid Behboodi, Amir Ghafourian Shagerdi, Hadi Alimirzaee (2023) examined in their study, there is a significantly constructive impact of perceived quality on marketing mix and customer inclination has been established as well. Marketing mix acts as a mediator on the impact of behavioral aspects on customer willingness, excluding the psychological element was validated and corporate social responsibility (CSR) between the behavioral elements excluding the intellectual element was validated. The findings by Hein (2022) revealed that pricing and advertising campaigns by Skynet have a positive and significant relationship with perceived quality. Purchasers of Skynet are convinced that the cost they have spent is appropriate for the item and quality assistance provided by Skynet. Relating to placing, caused by regional inclusion of areas where Skynet sell their products, and the price they are required to take is not noteworthy for distribution. Siregar, Suroso and Krisnatuti (2024) illustrated in their study that just product significantly influences perceived quality. Other factors such as pricing, placing, and advertising are expressed to not influence quality insights. The salient marketing mix aspects that the management of a corporation should consider are product and place. Industries are also required to consider the implementation of pricing which also impacts perceived quality significantly. Evaluation of which factors of the marketing mix are required to be considered can be completed by observing the loading factor of each aspect. Outcomes of the research of Taboli, Pariz, and Vafada (2017) have expressed that placing channels of a product influences perceived quality, hence it is suggested that the marketers move towards advertising brand equity through appropriate planning, fruitful management, activities of marketing, and appropriate financing to extensive placing, enhance the agencies' number. According to Yoo et al. (2000), the aspects that impact consumer-oriented brand equity are perceived quality, brand loyalty, brand awareness, and association of a brand. Additionally, they have

found that marketing mix elements, involving pricing, quality of a product, placing, and activities of promotion, influence a brand's perceived quality. Esmaili, Rezaei, Abbasi and Eskandari, (2017) have illustrated that promotional sales and public and material evidence have the highest influence on perceived quality, customers' loyalty and perceived value of the products.

H1: Marketing mix is significantly related with perceived quality.

Marketing Mix and Brand Equity

Kim, and Hyun (2011) explored the positive link between marketing mix elements and performance of channel, value-driven pricing, customer service after the sale, and advertising (promotion), brand-image, and three elements of brand equity including awareness of a brand, loyalty to a brand and perceived quality. According to the study Shamindra and Datta (2011), brand equity in medicine is fundamental for medicine's marketing experts. Brand equity supports marketing experts to create distinction from other competitive medicines in the market. Medicine's brand equity contributes a crucial part to stand out in the competing market. It was depicted that the promotion of medicine has a great influence on brand equity. The findings of Meayar (2018) represent the marketing mix elements such as promotion and CRM (customer relationship management) contribute an essential part in enhancing brand equity, and brand awareness of customers contributes to the association between further aspects and develops brand loyalty of a brand. The outcomes of this study can support marketers of firms and improve their power to make decisions.

Various dimensions of marketing mix have different levels of influence on the development of brand equity. This research explained the significance of a tactical perspective to manage the brand, accompanied by brand equity development. The findings direct attention to the requirement of cautious choosing of each aspect of the marketing mix to abstain from the collapse of attained brand equity. Further, the study highlights the significance of proceeding towards a plan to manage a brand to keep away from the attainment of immediate objectives such as sales increment for a short time can retard the likelihood of sustained development and attainment of enduring relative excellence, doubtlessly evolving from brand equity (Hein, 2022). Zewdie (2021) depicts that the strategy of management on the promotion of the firm proportionally has a low influence on developing brand equity. Marketers can play a role in enhancing a brand's equity through powerful advertising campaigns.

H2: Marketing mix is positively related with brand equity.

Perceived Quality and Brand Equity

Perceived quality is referred to as the general observation of consumers about excellence and product quality/service in comparison with competitors. The product's feature differs from perceived quality since perceived quality is the purchaser's personalized product evaluation (Zeithaml, 1988). Consequently, Perceived quality cannot essentially be reasonably controlled since perceived quality alone is a summing-up setup (Aaker, 1991). According to Zeithaml; (1988), perceived quality can play a role as a main effective element in regulating customer selections. Perceived quality has

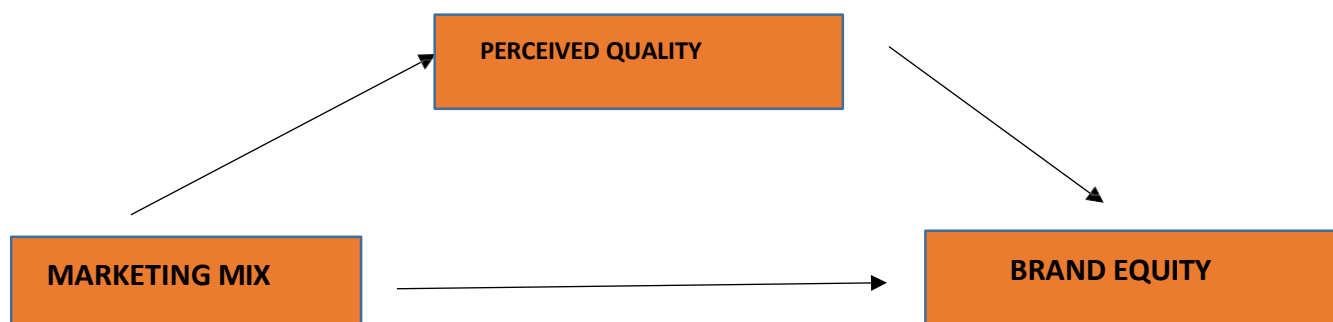
a positive relationship with brand equity (Yoo et al, 2000). Banbula (2024) illustrates that all variables that are investigated are positively correlated with each other, encircling awareness of a brand, association of a brand, perceived quality, loyalty of a brand, and extensive constructs of consumer-based brand equity. Particularly, perceived quality appeared as the element that expressed the highest positive correlation, hence showing the most powerful positive relationship with consumer-based brand equity. The research of Rungtrakulchai (2013) had the objective to examine the effect of pricing offers and perceived quality on brand equity. The findings showed that pricing offers and perceived quality are essential elements which develop the links that customers build with a brand to develop brand equity.

H3: Perceived quality is positively related with brand equity.

Marketing Mix, Perceived Quality and Brand Equity

Developing brand equity such as creating a powerful brand is a fruitful action plan for transforming an item from a competitive brand (Aaker; 1991). Brand equity evolves from increased perceived quality, loyalty of a brand and association of a brand and brand's alliances as well, that cannot be developed or disrupted in the short-term, nonetheless can be developed solely in the long-term by cautiously planned financing on marketing. Consequently, brand equity is long-lasting and enduring, and an item with powerful brand equity is a worthy resource for an organization. The outcomes of the research of Yoo et al. (2000) have detailed that recurrent pricing advertisements like pricing offers are linked to lowering brand equity, whilst excessive expenditures on promotion, elevated pricing, and better image of a store are linked to elevated brand equity. The dimensions of brand equity such as perceived quality, brand awareness, brand association, and brand loyalty have a mediating influence on interlink among every aspect of the marketing mix and brand equity. When marketing mix impacts positively brand equity elements, it is anticipated to contribute to brand equity's growth (Zewdie, 2021).

Conceptual Framework



Methodology:

According to (Churchill, 2005a), the design of a study is a counselling scheme utilized for gathering data and its investigation. In business search, the investigator works to develop a thesis and to validate it (Flynn et al, 1990). To validate the thesis investigators make some hypotheses and reject or accept them. The quantitative technique is advantageous since it is economical. It comprises assembling data from a small part of a population such as samples to draw out conclusions for the entire population. This study is cross-sectional as it comprises a sample examination of a population that is accomplished at a single point in time (Babbie, 2010). It is a survey-based study. Research approach is deductive as the study involves initiation of a hypothesis and then testifying them. According to Groves, Fowler, Jr & Couper (2011), the target population is referred to as the population from which outcomes of the study can be generalized, accessible during particular lapse of time and might be acquired, for which the survey assessor is ready to make results by utilizing sampling statistic. In this study, the target population comprises physicians of various specializations working in public sector hospitals in Lahore, Pakistan. From these public hospitals, we gathered a sample of 105 physicians having different specializations. Convenience sampling technique was applied as sampling frame was not available. This study takes the measurements of different variables by using Likert scale in the questionnaire. Data is gathered to measure the link between various variables. Data has been assembled by a survey-based questionnaire. The responses were assembled by the investigator herself to have instant replies, to stay away from shortcomings, and to have a worthy rate of return. The data is collected by filling out the survey from the target audience on hard form. A total of 150 questionnaires were distributed among physicians of various hospitals in Lahore out of which 105 was received. Brand equity was measured through a 4 items scale developed by Qiao, Yin & Xing, 2022. A 13 items scale developed by Al Badi, 2018 was used to measure marketing mix and a 7 items scale was used to measure perceived quality (Panchal, Khan & Ramesh, 2012).

Data Analysis:
Sample demographics:

Table 1: Sample Demographics

Demographic Variable	Categories	Frequency	Percentage (%)
Gender	Male	52	49.5
	Female	53	50.5
Age	20-25	39	37.1
	26-30	51	48.6
	31-35	14	13.3
	36-40	1	1.0
	41-45	1	1.0
Specialization	General Surgery	17	16.2
	Urology	3	2.9
	Orthopaedic	8	7.6
	Nephrology	1	1.0
	Gynae	5	4.8
	House officer	31	29.5
	General Physician	1	1.0
	Pulmonologist	2	1.9
	Medicine	14	13.3
	ENT	6	5.7
	Dentist	2	1.9
	Pediatrician	6	5.7
	Cardiology	1	1.0
	Neurosurgeon	4	3.8
	Psychiatry	4	3.8

Analysis of reliability

To assess the extent of reliability of this instrument, the Cronbach alpha value is measured. The reliability coefficient value ranges from 0 to 1. Alpha value which is placed within the range of 0.50 to 0.60 is allowable as well (Nunnally, 1978). According to Kimberlin and Winterstein, (2008), if there is a greater value of the coefficient, there will be more reliability. Cronbach alpha values for marketing mix, perceived quality and brand equity are 0.820, 0.830 and 0.846 respectively. So, these alpha values approve the instrument used in this questionnaire. Hence, the questionnaire is reliable for conducting the research.

Correlation:

Table2: Pearson Correlation Coefficient

Variables	MM	PQ	BE	Sig. (2-tailed)
MM	1			
PQ	0.558**	1		0.004
BE	0.363**	0.281**	1	0.000

The correlation result establishes that marketing mix, brand equity, and perceived quality have a positive correlation. This research indicates that marketing mix elements have an influence on brand equity and have weak positive correlation ($r=0.363$) whereas marketing mix is moderately correlated with perceived quality ($r=0.558$). Brand equity and perceived quality indicate weak positive correlation ($r=0.285$).

Regression Analysis

Marketing mix elements and the perceived quality of a product significantly influence brand equity as indicated by p-value ($p=0.000$) and $F= 8.354$. High value of F indicates that we can reject the null hypothesis. The value of Sig. F (0.00) which is less than 0.05 expresses that the model is statistically significant implying that perceived quality and marketing mix have a significant positive effect on brand equity.

Table 3: ANOVA

	Df	Sum of Squares	Mean Square	F	Sig. F

Regression	2	6.373	3.187	8.354	0.000
Residual	102	38.910	0.381		
Total	104	45.283			

Independent Variable: MM

Dependent Variable: PQ, BE

Hypothesis Testing

Table 4: Hypothesis Testing

	Hypotheses	T-Statistics	Beta	P-Value	Decision
H1	Marketing Mix \square Perceived Quality	6.818	0.558	0.000	Accepted
H2	Marketing Mix \square Brand Equity	2.977	0.281	0.004	Accepted
H3	Perceived Quality \square Brand Equity	0.798	0.078	0.427	Rejected
H4	Marketing Mix \square Perceived Quality \square Brand Equity	4.124	0.454	0.000	Accepted

All the hypothesis were significant. It is clear from β values that with an increase of one unit of marketing mix, perceived quality will enhanced by 0.558 units ($p=0.00$) on average, for every increase in one unit of marketing mix, brand equity will increase by 0.281 units ($p=0.004$) on average. For one unit increase in perceived quality, there will be a 0.078 times increase in brand equity ($p=0.427$) and due to less p-value, this hypothesis was rejected. Also a unit increase in marketing mix and perceived quality increase brand equity by 0.454 times ($p=0.00$). The above table depicts that there is a direct interlink between marketing mix and brand equity. But perceived quality acts as a mediator between the relationship between marketing mix and brand equity and hence H3 is rejected as perceived quality does not show a direct impact on brand equity.

Discussion:

This chapter is meant to furnish a demonstrative discussion of crucial study analysis dependent on the objective of the research and conceptual framework. It comprises the elucidation of calculated outcomes to conjointly reveal and sum up the statistical interlinks among the deficiency of leaning towards quality studies in the

pharmaceutical industries' market of Lahore, Pakistan, and physicians and market factors that affect it.

All the hypotheses have been accepted. The outcomes depicted that there is the existence of a weak positive correlation between marketing mix and brand equity, and there exists a moderate positive correlation between marketing mix and perceived quality. Additionally, it was found that there is a very weak correlation between perceived quality and brand equity in pharmaceutical companies. Viet and Ahn (2021) demonstrated how elements of marketing impact brand equity in the Vietnam industry of milk. The study has expressed that promotion positively influences brand association, awareness of a brand, perceived quality, and trust in a brand. These elements overall increase the loyalty of a brand, highlighting the significance of marketing mix aspects in evolving powerful brand equity. Kyaw (2022) depicted positive relationship of marketing mix elements such as product, price, place, and promotion and perceived quality. Buyers felt satisfied that they are acquiring satisfactory service quality, time of zapping with low channel, less packet losing, and this confidence originated from their favourable discernments of marketing executions of Skynet for its service, product, price, place, and advertising. Shin, Jinyoung and Hyoungun (2025) described that marketing mix influences brand equity on the subject of government-owned products of food. The outcomes have depicted that elements like placing and promotion influence customers' impression of the products. Enhancing brand awareness was related to improved remembrance of the characteristics of the product and increased perceived quality. Taboli, Pariz & Vafada (2017) has also demonstrated that distribution channels of a product impact perceived quality. Image of a brand (independent variable) and perceived quality play a role as a mediator in influencing brand equity (dependent variable). Mukhtar et al. (2024) argued that brand loyalty and perceived quality increases business value through consumer trust and hence increase brand equity.

Conclusion:

By completing the evaluation of the literature, it was constructed that nearly no study has been done on the impact of marketing mix on brand equity with the mediating effect of perceived quality among pharmaceutical companies for medicines in Lahore, Pakistan. Based on searched data, it was observed that the brand equity of medicine depends on marketing mix factors in the pharmaceutical marketing sector. Additionally, it was found out marketing mix aspects like product, pricing, placing, and advertising significantly and positively influence the perceived quality of pharmaceutical products. If the marketing mix affects the perceived quality of a medicinal product, then it will also enhance brand equity. These outcomes introduce new probabilities for pharmaceutical industries to apprehend the aspects that can lead to high brand equity in the market.

Implications

By illustrating a thorough evaluation in this thesis, many recommendations are presented, appropriately supported by actual proofs established in the way of this study.

This research have practical implications for marketers working in the pharmaceutical sector as well. The research outcomes may illustrate the significance of marketing mix and perceived quality in enhancing the brand equity of a product in pharmaceutical marketing. It also guides marketers on how to increase the value of their medicine in the market. In pharma companies, the marketing mix influences brand equity by affecting how physicians and patients recognize the quality, effectiveness, and credibility of a medicine. Conclusively, it impacts prescribing practices by aspects. i.e. perceived quality that is developed by target placing, plan of action for price, the channel of distribution, and advertising campaigns.

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