

IMPACT OF NON-FINANCIAL EXTRINSIC FACTORS ON THE PERFORMANCE OF RETAIL PHARMACIES IN KARACHI

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ABSTRACT

Retail pharmacy is the store where health products and medicines are sold over the counter and on doctor's prescription. Retail pharmacies are the first point of contact between patients and healthcare industry. Around 45000-50000 retail pharmacies are present in Pakistan. The quality of pharmacies can be seen in terms of the quality of personnel, premises and the process through which the drugs are being given to the patients. Performance of retail pharmacy depends on many intrinsic and extrinsic factors. Objective of this research study is to examine the impact of non-financial extrinsic factors on the performance of retail pharmacies in Karachi. Close ended questionnaire was established with 5 point Likert scale. Questionnaire was filled by 70 retail pharmacies from 5 zones of Karachi. Data was analyzed with the help of SPSS. Paper examines the effects of Location, size, physical environment, inventory management, number of doctors in the area and number of other pharmacies on the dependent variable (Number of customers). On the basis of the survey conducted, it was concluded that location and number of other pharmacies located in the same area are not the significant variables that affect the performance where as physical environment, size, inventory management and number of doctor in the area are positively correlated with the performance of store. On the basis of the results, Non-financial extrinsic factors played an important role in retail pharmacies performance. Store owners should consider these factors in order to improve their store's performance and while establishing new pharmacy. There are various other factors that can affect the performance of retail pharmacy, and that can be considered for future research.

Keywords: Retail Pharmacies, Extrinsic Factors, Performance, Inventory Management, Physical Environment.

JEL Classification: L81, G31

1. INTRODUCTION

Healthcare industry is different in many aspects from other industries, and a current environmental change highlights its distinctive nature. Life expectancy is increasing, consumers are becoming more health conscious and they are spending more on medication than ever before, which results in an increase pressure on pharmaceutical industry¹. Private pharmacies are considered as the first point of contact for patients seeking health care, because of its vicinity and being easily accessible as compared to other providers, medical doctors and traditional practitioners². Drug regulation is one of the most important components in healthcare system. In many developing countries, failure of government bodies, poor regulations and privatization have increased the access of drugs to public through private pharmacies.

The primary function of retail pharmacies is buying and selling of drugs; over the counter and earn the profits. For this purpose, they would like to improve their overall performance.

Although the graduates of Bachelors in Pharmacy are limited, the total number of retail and wholesale drug outlets in Pakistan are around 45,000-50,000 out of which 15,000 stores are located in the province of Sindh³. The quality of pharmacies can be seen in terms of the quality of personnel, premises and the process through which the drugs are

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¹ DeLorme, "The state of public research on over-the-counter drug advertising." *International journal of healthcare and pharmaceutical marketing*, (2010).

² Anwar, M. Green, J. Norris, P. "Health-seeking behaviour in Pakistan: a narrative review of the existing literature." (2012).

³ Rabbani, F. Cheema, FH. Talati, N. "Behind the counter: pharmacies and dispensing patterns of pharmacy attendants in Karachi." *The journal of the Pakistan medical association*. (2001)

being given to the patients. The physical layout and environment has significant impact on the performance of pharmacies.⁴. The present study builds upon these past studies and attempts to provide an integrated view for the retailer to improve their performance based on the extrinsic factors.

1.1 Problem Statement

Local pharmacies are the major part of healthcare system. It is important for them to maintain their performance and quality as competition is increasing. External factors like location, environment, age and size of store have major impact on the performance so it is important to study these factors to evaluate the performance.

This paper attempts to identify the extrinsic factors that impacts the performance of retail pharmacy.

2. REVIEW OF LITERATURE

Pharmacies are considered as a major source of healthcare around the world. Diversity in their distribution and operational setups make them easily accessible and economical source for healthcare delivery⁵. These medication shops includes standarized pharmacy under the supervision of qualified pharmacists as well as small roadside drug shops run by someone without proper qualification.

Although number of researchers have presented papers on the pharmacy practice in low and middle class income countries (LMIC), and some reviews also have been reported ⁶ but, no up to date data is available on performance of pharmacies and drug stores across Asia's LMIC.

2.1 Performance Indicator

Performance of the retail store can be measured by the help of store sales and there is a direct and positive relationship between the sales and the store traffic.⁷

Lower sales performance is attributed to lower store traffic and higher sales performance is also attributed to higher store traffic. During the US assault at IRAQ, sales of many retailers declined because of low store traffic⁸. According to the research conducted by Boyle 2005, it was identified that store named as Walgreen opened up its store in high traffic areas, which enhanced its sales performance.

This research paper focuses on the non financial variables, and their impact on the performance of the retail pharmacy. Performance is measured by the help of store traffic (Number of customers)

2.2 Factors Affecting the Performance:

2.2.1 Physical Environment

The factor that influence store traffic more than any other factor is its physical environment⁹. According to the research¹⁰ store layout affects consumer behavior and is important factor in determining store image. Well-designed layouts are very important because they have strong influence on in-store traffic patterns, shopping behavior, and performance. Space between the stores also have positive impact on customers. Often space is left intentionally so that customers can move easily inside the store and browse.¹¹

2.2.2 Location

⁴ Dennis, Emmett, David, Paul. "Pharmacy layout: What are consumers' perceptions?" *Journal of hospital marketing & public relations*, (2006): 67-77.

⁵ ADEPU, R. "General Practitioners' Perceptions About the Extended Role of Community Pharmacist." *Indian Journal of Pharmaceutical sciences*, (2006).

⁶ Smith, F. "Private local pharmacies in low- and middle-income countries: A review of interventions to enhance their role in public health". *Tropical Medicine and International Health*. (2009).

⁷ Teri, Agins. Amy, Merrick. Shelly, Branch. "The Assault on Iraq: Retailers see slowdown as shoppers stay home to watch news." *Wall Street Journal*.(2003) .

⁸ Walters, Mackenzie. "Structural equations analysis of the impact of price promotions on the store performance." *Journal of Marketing Research* (1988).

⁹ J. Babin, R. Darden. "Consumer self-regulation in a retail environment." *Journal of Retailing*, (1995).

¹⁰ Vrechopoulos, Adam P and O'Keefe. "Virtual store layout: an experimental comparison in the context of grocery retail", *Journal of Retailing* 80: (1988): 13-22.

¹¹ Ferdows, Lewis,M. and Machuca, J. 2003. "Zara. Supply Chain Forum." *An International Journal*, Vol # 4, (2003): 62-67.

In order to determine whether the location of a pharmacy affects its performance, each of the factors should be considered to determine whether relationships exist between each component and the performance of a store. These factors include roadside accessibility, pedestrian accessibility, number of competitors and number of doctors. Roadside accessibility is defined as how easy is it to reach the store¹². Particular stores often locate themselves based on a particular benefit that they can achieve. For instance, petrol stations are often located on the side of a highway or main road to capture the flow of traffic¹³. Retail and business areas in Chicago positioned themselves around highways¹⁴. Further, closeness to a national road was found to be statistically significant when related to customer loyalty¹⁵.

2.2.3 Number of Hospitals in the Area:

In medicine supply chain, doctors play an important role. They are responsible for treating patients for different diseases. Furthermore, the only members of the healthcare profession that are allowed to prescribe medicines are doctors. If customers are a key driver of efficiency¹⁶, being in an area surrounded by doctors is a way in which a pharmacy could increase its customers because patients will go to the store closest to their doctor.

2.2.4 Size

Store is defined by the total surface area covered by it. Size of the store is one of the variables that defines store environment. Past literature shows that, the size of store is often seen as cost driver for the space covered¹⁷. Increase in size attracts greater number of customers because of wider catchment area because, customers choose to travel greater distances to these stores¹⁸. However, most of these literatures are focused on supermarkets and hypermarkets, this research paper will determine whether a pharmacy's performance would also be affected by the same physical attributes. As pharmacy store functions in the same retail environment, it can be said that size appears to have an impact on performance of a pharmacy. In the retail pharmacies in New Delhi, India, it was identified that store size is a significant factor in driving store efficiency¹⁹.

2.2.5 Inventory Management

As the pharmaceutical industry has become more deregulated, the pharmacists have had to focus on remaining competitive. In this regard, it has been suggested that inventory management is the key to retail success. Controlling the inventory of an entity efficiently requires an understanding of the number of products, the size of the store and the operating hours of the entity²⁰. In a competitive industry, such as the retail pharmaceutical industry, if a pharmacy does not have the appropriate stock available, customers will simply go to another pharmacy. The owner of the store thus, needs to make decisions relating to how much safety stock he should maintain and how much stock to order, as well as the lead time relating to delivery of this stock²¹ versus the demand for the stock

2.2.6 Competition

In unregulated environments, competition results in the lowest possible price being paid by the consumer. This is because suppliers will drive down the price in an attempt to take market share away from their competitor. This is known as free-market competition. The United States of America makes use of such forces within its pharmaceutical

¹² Swoboda, B. Berg, B. "The importance of retail brand equity and store accessibility for store", *Journal of Retailing and Consumer Services*, (2013).

¹³ Sadahiro, Y. "A PDF-based analysis of the spatial structure of retailing." *GeoJournal*, (2000): 237 - 252

¹⁴ Guy, C.M. "Classifications of retail stores and shopping centres: some methodological issues.", *GeoJournal*, (1998)

¹⁵ Swoboda, Berg. "The importance of retail brand equity and store accessibility for store"

¹⁶ Patel, G.N. Pande, S. "Measuring the performance of pharmacy stores using discretionary and non-discretionary variables.", *Opsearch*, (2012).

¹⁷ Verhetsel, A. "Effects of neighbourhood characteristics on store performance." *Journal of Retailing and Consumer Services*, (2005).

¹⁸ Guy, C.M. "Classifications of retail stores and shopping centres: 255 - 264

¹⁹ Patel, G.N. Pande, S. "Measuring the performance of pharmacy stores using discretionary and non-discretionary variables"

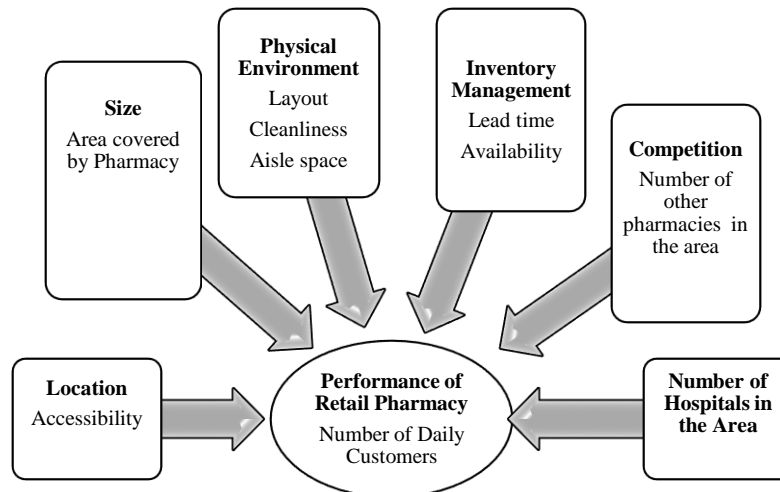
²⁰ Dubelaar, C. "Relationships between Inventory, Sales and Service in a Retail Chain Store Operation." *International Journal of Physical Distribution & Logistics Management*, (2001) 96 - 108.

²¹ Dubelaar. 96 - 108.

industry²². However, in most countries there is an extensive regulation around selling price maintenance. Thus, competition in these environments can be unfavorable to the survival of the store location. The question arises is to what is defined as competition for a pharmacy. The simple answer is a pharmacy that is in close proximity to the pharmacy. It is necessary to determine whether competition has a negative effect on store performance. In all cases, it was identified that competition within the region has a negative impact on performance.²³

2.3 Conceptual Framework

The independent variables in this research are Location, size of the store, physical environment, competition and Number of hospitals in the area. Performance is set as dependent variable and is measured in terms of number of customers visiting the retail pharmacy daily.



2.4 Hypotheses

Ho_A: Location of the retail pharmacy doesn't have a significant impact on its performance.

Ho_B: Physical environment of pharmacy doesn't have a significant impact on its performance.

Ho_C: The size of the pharmacy store doesn't have a significant impact on its performance.

Ho_D: Inventory management system doesn't affect the performance of pharmacy significantly.

Ho_E: Number of other Pharmacies in the area doesn't have a significant effect on the performance of pharmacy.

Ho_F: Number of clinics/hospitals in the area doesn't have a significant impact on the performance of pharmacy.

3. RESEARCH METHODOLOGY

3.1 Research Strategy

The study is quantitative in nature, as it involves the use of structured questions with predetermined response options surveying large number of respondents.

In addition, as only some studies exist on this topic, exploratory research is performed to understand the problem. Cross sectional research is conducted and data is collected from the sample of the population at the defined period of time. So, the data can be gathered from people with various backgrounds in short time span.

3.2 Population

²²Pretorius, D " The impact of the implementation of single exit pricing for pharmaceuticals in South Africa." . (2011).

²³Pauler, G. Trivedi, M " Assessing store performance models." *European Journal of Operational Research* (2009): 349 - 359.

The target population was retail pharmacies located in Karachi. There are total 15000 pharmacies located in Sindh²⁴, and the population of Karachi is one third as of Sindh, so the estimated number of retail pharmacies in Karachi is 5000.

3.3 Sampling Technique

Non probability convenience sampling was used primarily because of time constraint. Convenience sampling was used primarily; samples are selected on the basis of accessibility but sample should be the representative of the population. This method is chosen because of time constraint. To ensure all areas of Karachi are covered, probability sampling is done. Using stratified sampling technique population is divided into strata on the basis of location.

3.4 Sample Size

According to the sample size table suggested by Krejcie & Morgan (1970), with confidence level 90 % and margin of error 10 %, sample size for the population of 5000 should be 67, so sample size taken for this research was 70. Time and resource constraints were the main reason for the small sample size.

3.5 Survey Instrument

In order to obtain information pre tested and self-administered questionnaire was established to conduct survey. Structured/closed ended questionnaire with five-point Likert scale was administered to collect primary data. The questions were designed in a manner that provided answers to the objectives of the study.

3.6 Data Analysis

Data was analyzed through SPSS version 19. After data collection, a number of analyses were run on the data. Descriptive analysis of the data was performed in the form of percentages and frequencies. Bar and pie charts are used to graphically represent the result of the data. To identify the relationship and significance between data, inferential and descriptive data analysis tools were used. Regression was run to identify the relationship between independent and dependent variables.

4. RESEARCH FINDINGS AND ANALYSIS

Data was collected from 6 districts of Karachi. The questionnaire was administered to the 70 retail pharmacies.

District	Frequency	Percent%
Central	15	21.4
East	18	25.7
Korangi	9	12.9
Malir	6	8.6
South	14	20.0
West	8	11.4
Total	70	100.0

Customers or footfalls indicate the performance of store. Out of the 70 pharmacies surveyed, 74.29 % of the stores reported 50-100 customers daily. Numbers of customers in 14.29% of the stores were more than 100. Only 11.43% of the stores reported 0-50 customers daily.

Table 4.1 Location

²⁴ Rabbani, F. Cheema, FH. Talati, N. "Behind the counter: pharmacies and dispensing patterns of pharmacy attendants in Karachi." *The journal of the Pakistan medical association*. (2001)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.869	.577		3.239	.002
	Location	.025	.138	.022	.179	.859

a. Dependent Variable: Number of Customers

According to the information provided in table 4.1, Location of the retail pharmacy doesn't have the significant impact on the performance of the store ($p > 0.005$).

Table 4.2 Physical Environment

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.514	.375		1.369	.176
	Layout	.262	.053	.508	4.935	.000
	Space	.187	.061	.301	3.053	.003
	Environment	.052	.097	.049	.541	.591

a. Dependent Variable: Number of Customers

Above table shows that the physical environment impacts the number of customers visit the store. Store layout and space significantly impact the performance ($p < 0.005$).

Table 4.3 Size

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.082	.309		03.500	.001
	Size	.305	.101	.344	3.022	.004

a. Dependent Variable: Number of Customers

Table shows that size of the store has a positive relationship with the number of customers visit the store. Increase in size results in the increase in number of customers ($p < 0.005$)

Table 4.4 Inventory Management

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.773	.276		2.799	.007
	Inventory Maintenance	.681	.147	.490	4.630	.000

a. Dependent Variable: number Customers

Above table shows that operating hour is not the significant factor in order to improve performance ($p > 0.005$). Inventory maintenance, availability of medicines and use of inventory management information system proves to be significantly important factors, that affects the performance of retail store ($p < 0.005$)

Table 4.5 Competition

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.273	.282		8.056	.000
	Competition	-.094	.107	-.107	-.887	.378

Dependent Variable: Number of Customers

In above table, negative value of beta shows that competition (Number of other pharmacies) is negatively correlated with the number of customers visiting the store. However, it is not significant ($p > 0.005$)

Table 4.6 Number of Hospitals

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.181	.188		6.270	.000
	Number of Hospitals	.380	.081	.495	4.694	.000

a. Dependent Variable: Number of customers

Above table shows that the number of hospitals around the retail pharmacy affects the number of customers of the store and significantly impact the stores performance. ($p < 0.005$).

5. CONCLUSION AND RECOMMENDATIONS

The conclusion was drawn that location has no significant effect on the performance of pharmacy. Literature shows that stores often locate themselves on roadside to get customer attraction²⁵. Although no relationship is found between accessibility and performance of the store in this research paper. This is because pharmacy is not dependent on the passing customers, because customers visit store for particular reason thus pharmacy doesn't rely on passing customers. Same impact was found in past studies.

According to the findings physical environment has significant impact on performance of retail pharmacy. Past literatures also shows the same impact²⁶

Size of the store has a positive relationship with the number of customers visiting the store, which is consistent with the previous studies²⁷

It was also concluded that inventory maintenance positively impacts the pharmacy's performance. Past studies²⁸ conducted before also shows the same.

Number of competitors (other pharmacies in area) in the area and performance of retail pharmacy has negative and insignificant relationship. Although, significant impact was seen between number of hospitals in the area and performance of retail pharmacies.

Retail pharmacies owners should consider several extrinsic factors for better performance of the store. On the basis of the findings, following recommendations can be made.

²⁵ Swoboda.B, Berg.B. 2013.

²⁶ Ferdows, M. Lewis, and Machuca. 62-67.

²⁷ Guy,C.M. " Classifications of retail stores and shopping centres: some methodological issues." 255 - 264

²⁸ Dubelaar, C. 96 - 108.

- Physical Layout of the store should be such that the customers are able to see what they want to purchase and there should be enough space to move around the store easily because, convenient layout helps in increasing the number of customers.
- Proper inventory management system should be used to maintain inventory of the pharmacy. Availability of medicines is an important factor that directly impacts the stores performance.
- Retail pharmacy store should be established in the area which is surrounded by Hospitals, because it will help in increasing the number of customers.
- One should consider the extrinsic factors and their impact before establishing new pharmacy retail store because these factors are equally important as other financial factors and have direct impact on pharmacy's performance.

6. FUTURE RESEARCH

This research is limited to Karachi only. Future research can be conducted in other regions of Pakistan on large sample size. Furthermore, one can also conduct research to find the impact of intrinsic factors on the retail pharmacy's performance.

7. CONTRIBUTION TO KNOWLEDGE

Limited information is available on the retail pharmacies and their practices. This paper provides a knowledge in the field of retail Pharmaceutical industry. This research will help pharmacy owners and individuals who are thinking to enter in this business, and in improving their performance.

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