

**MEDIATING EFFECT OF INVESTMENTS ON MEDICAL
SALES REPRESENTATIVES BETWEEN PERSONAL
SELLING TACTICS THROUGH MEDICAL
DOCTORS AND ORGANIZATIONAL
SALES PERFORMANCE**

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**ASIA e UNIVERSITY
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T.SAYANDHAN

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ABSTRACT

Globally and in Sri Lanka, pharmaceutical companies are not allowed to promote the product directly to the end user, the patients, due to the regulatory guidelines issued by the regulatory authority. Hence, the pharmaceutical industry uses medical sales representatives as a critical method to promote the products to doctors; in return, the doctors prescribe the product to patients with many investments spent on promotions. However, the return on the investment made on the medical sales representatives to induce them to promote company medical products to doctors with the expectation of prescribing organization products to end-user (patients) needs to be evaluated in measuring marketing effectiveness. Based on the above premise, this study proposal aims to investigate if the organizational investments in medical sales representatives' personal selling through medical doctor promotions to promote corporate products (brands) to their end-users (patients) significantly help the organizational sales performance. This study uses a deductive research approach with a quantitative quasi-experimental design, this DBA study aims to administer a survey with a sample of 338 respondents selected based on the random sampling method. The population represents senior managers, middle managers, and medical sales representatives are randomly chosen from three hundred and sixty-eight registered pharmaceutical companies operating in Sri Lanka. Data was collected using a structured questionnaire with scales (1-5) to measure each item. Data were processed for analysis using Microsoft Excel 2019 and eventually uploaded to R-Studio (4.1.2 version) to analyze data to compute correlation, linear regression, and path analysis. Secondary data were collected from the industry depository about the organizational performance in annual sales turnover and market share for at least the last five years. The findings reveal that personal selling by medical sales representative positively influence by 68% and each 1 unit increase organizational sales by 1.43 units. Investment made on medical sales representatives positively influence by 57% of the organizational sales performance and each 1 unit of investment yield 2.8 times of organizational sales performance. There have been a few preidentified limitations associated with the study: the number of variables included for the investigation, sample size, and time availability are a few.

Keywords: Personal selling, medical sales representatives, organizational investments, organizational performance

APPROVAL

This is to certify that this thesis conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, for the fulfilment of the requirements for the degree of Doctor of Business Administration

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7 August 2023

DECLARATION

I hereby declare that the thesis submitted in fulfilment of the PhD degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

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Date: 7 August 2023

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LIST OF ABBREVIATION

NMRA	National Medicines Regulatory Authority
LKR	Sri Lankan Rupees (Currency)
GDP	Gross Domestic Product
R&D	Research and Development
GSEM	General Linear Structural Model
KM	Knowledge Management
HRM	Human Resource Management
ROI	Return on Investment
ANOVA	Analysis of Variance
SEM	Structural Equation Modelling

CHAPTER 1

INTRODUCTION

1.0 Background of the Study

In this chapter we explain the background of study carried out in the pharmaceutical industry in Sri Lanka, addressing the key problem statement how effective the personal selling contributes towards organizational sales performance, with the objectives if organizations should increase its investment on medical sales representatives or curtail same, which brings about a large scopes and importance of the entire industry

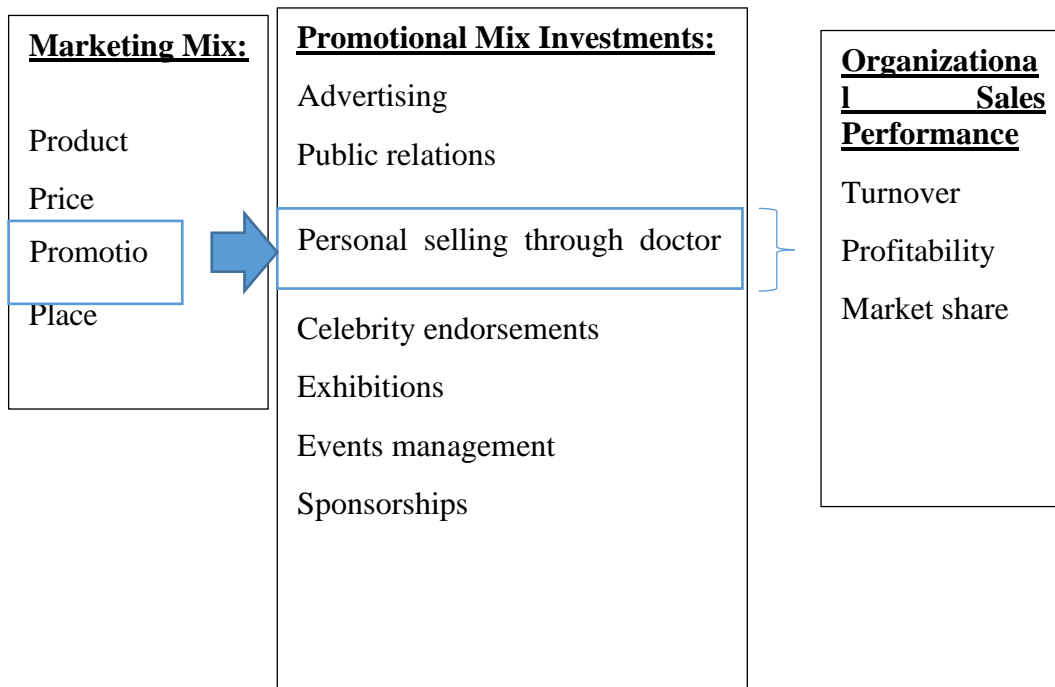
Organizations should permeate how companies think about themselves in line with achieving the overall organizational goals. One way to accomplish this is to centralize the notion of customer orientation while bringing out the coordination of all the related functions (Penn et al., 1966). One of the critical ideologies for organizations to implement the above notion is introducing and practicing marketing management as a driving force. Marketing management helps require all departments to treat customers' interest as paramount. The critical responsibility of marketing as a function is to analyze the market an organization performs its operations, understand the needs, wants, and changing buying behavior of the customer, and devise strategies (product, price, promotion, and distribution) to achieve marketing goals in line with the overall strategic objectives of the organization (Gunther, 2009). As outlined above, one of the key marketing strategies a marketing manager is expected to manage is marketing communication (promotion strategy).

According to Costello and Reczek (2020), a marketing communication strategy includes a set of activities that marketing managers design and implement to communicate the marketing-related information to existing and potential customers of

a company. Laurie and Mortimer (2019) highlight the importance of integrating all the marketing communication elements to communicate with the organization's existing and potential customers. They further note that the mentioned marketing communication elements should not be limited to advertising, sales promotions, public relations, personal selling, celebrity endorsements, exhibitions, event management, and sponsorships. However, integrating all the elements associated with marketing communication strategy is not applicable in all industries, especially in the medical marketing industry globally and locally.

Relative to other industries, the pharmaceutical industry has slightly deviated from marketing communication (Dheeraj, 2015). Many government authorities highly regulate the pharmaceutical industry globally and locally to ensure quality (safety and control of malpractices). As a result, unlike in other industries, pharmaceutical companies are mandated to promote their branded medical products to their patients only through qualified and registered medical doctors. The below figure depicts the above explanation in summary.

Figure 1.1: Marketing Communication in Pharmaceutical Industry



Source: Adaptation from Dheeraj, R. (2015)

The industry of pharmaceuticals in Sri Lanka is heavily regulated by the Sri Lankan medical regulator, National Medicines Regulatory Authority (NMRA), a government body that operates under the Ministry of Health, Nutrition & Indigenous Medicine. NMRA oversees all the licenses, approvals, and other decisions related to the pharmaceutical industry. There are essentially two sectors governed by NMRA: medicines and medical equipment. The focus of this empirical study will be on the treatment and medication-related marketing approaches.

The whole pharmaceutical industry accounts for LKR 88.28bn, out of which the private sector accounts for LKR 51.21bn (58%) while the government sector accounts for LKR 37.07bn (42%). Two marketing operations are explicitly operating in this industry: private and government. The overall industry growth rate is 15.87% (IQVIA Q2 2020). However, this industry currently confronts a few challenges. They are a drop in gross profit percentage and curtailed promotion expenditure due to molecules price

controlled by the government, impacts on imports and brand promotions due to government strategy to increase local production from 13% to 50% in 2025, and tough competition due to cheaper generics imports from India and Bangladesh, and time-consuming NMRA regulatory process delays in registering products.

Table 1.1: Industry Data

Total Industry Size	LKR 88.28 bn
Private Sector Contribution	LKR 51.21 bn
Government Sector Contribution	LKR 37.07 bn
Overall Industry Growth Rate	15.87 %

Source: IQVIA Q2 2020

1.1 Problem Statement

Pharmaceutical industry globally and in Sri Lanka, is regulated by regulatory bodies. The healthcare industry regulatory bodies, strictly regulates the communications related to advertising material and promotions carried out by companies to the medical profession especially promoting prescribed products by healthcare professionals. (Francer, 2014). Similarly, the regulatory guidelines published by the national medicines regulatory authority in Sri Lanka does not allow the pharmaceutical companies from promoting any prescribed products by healthcare professionals directly to the end user, who are the patients. (Lanka, 2015). Hence, the pharmaceutical industry adhering to global guidelines, influences the prescribing behavior of healthcare professionals using sales reps (also known as drug representatives or medical representatives), drug samples, and events. (Berman, 2018). Unlike other industries where communication to end user or customer is permitted thru advertising, sales promotion, etc. using all communication strategies, the pharmaceutical industry doesn't

enjoy this privilege due to above stated restrictions. The literature further discusses that pharmaceutical promotions have shown to increase physicians' prescriptions of targeted products by the pharmaceutical companies and increase prescription costs. Even in Sri Lanka, the pharmaceutical industry uses medical sales representatives as a critical method to promote the products to doctors; in return, the doctors prescribe the product to patients with many investments spent on promotions (Punchibandara, 2017).

In evaluating different types of pharmaceutical promotional methods to influence on the prescription behavior of the healthcare professionals related to general practice, physicians, Gynecologists, Pediatricians, and dentists, the findings reveal that the medical representatives' medical representatives impact the doctors' prescription behavior. (Krunal, 2020). The study further states that pharmaceutical organizations can develop different types of promotional tools for their product range which can help them to generate a higher return on investments. However, the return on investment made on the medical sales representatives to induce them to promote company medical products to doctors with the expectation of prescribing organization products to end-user (patient) needs to be evaluated in measuring marketing effectiveness (Penn et al., 1966). Based on the above premise, the fundamental research problem related to this study is whether the organizational expenditure as promotional investment in medical sales representatives' selling through medical doctor promotions to promote pharmaceutical products [(brands) to their end-users (patients) significantly helps the organizational sales performance.

It was observed that the pharmaceutical industry heavily invests in medical sales representatives to promote its product prescribed by the medical profession, contributing to each organization's revenue. During the covid pandemic, there were 53 days of lockdown (March 12th, 2020, to May 10th, 2020), later a curfew was imposed in

Sri Lanka, and no physical movement was allowed to curtail the covid infection. Still, the essential services for pharmaceutical distribution were allowed for pharmaceutical distribution. Nevertheless, during this period, there were no medical sales representative promotions restricted by the doctors, institutes, and the pharmaceutical industry itself. However, it was observed that there was a significant sales increase for pharmaceutical products (reference IQVIA 2020) during this period when the medical representative promotions were halted.

The pandemic continued but the curfew was lifted. Still, the lockdown scenario continued during different covid waves. This period was when most medical professionals did not encourage any pharmaceutical sales reps to visit them due to the disease spread. On the other hand, even the Sri Lanka Chamber of Pharmaceutical Industry restricted the physical movement of medical representatives. When this promotion by medical sales representatives were curtailed, the pharma industry continued to record year-on-year sales growth (ref IQUVIA 2021). Based on the above premise, in this research is designed to investigate to check if there is any relationship which prevails among medical sales representative promotions to medical doctors and pharmaceutical sales in Sri Lanka? Further, this research study will enable the researcher to explore if all the investments and expenditure allocated for medical sales representatives are worth maintaining in the long run with the expectation of higher sales yields as the amount spent on this overhead's expenditure in significantly higher to any pharmaceutical organization.

1.2 Objectives

This study aims to explore impact of the medical sales representative through personal selling how they contribute to increase organization sales. This study further aims at organizational expenditure incurred as promotional investments in personal selling

elements within the overall marketing communication process of the sales representatives employed in the pharmaceutical industry. Additionally, to understand how efficiently organizations operating in the pharmaceutical sector manage their investments in personal selling elements within the marketing communication process. Companies in the medical marketing industry recruit sales representatives to promote their branded medicines to medical doctors, expecting doctors to have their medication prescribed under their brands to patients in return for the patients to purchase same. Organizations perform the above sales process within a highly regulated environment to achieve their overall organizational sales and revenue goals. These organizational goals include sales turnover, market share, and profitability (Costello et al., 2020). The pharmaceutical industry is on an escalation in terms of its expenditure on the personal selling element when promoting branded medicine through doctors (Dheeraj, 2015). However, prevailing rhetoric argues that the leaders of the organizations that operate in the pharmaceutical industry should reevaluate the net worth of the returns they yield against the investments they make on their sales representatives, who promote their products to doctors, who eventually prescribe their medicines to existing and potential patients when the patients seek medical solutions (Glassdoor, 2020). Therefore, the research study findings will enhance the knowledge to proceed not only to complete the Doctor of Business Administration (DBA), but also expand the knowledge relevant to the subject area of this study, helping to implement the understanding for the growth and development of the pharmaceutical industry, this study would further enable academic interests for those who show keen interest to conduct their future studies, enhance the knowledge of the established theory, contribute for policy-making exercise, enabling, to become an expert of the area of study.

Based on above the research objective of the study would be

1. To identify the personal selling tactics through medical doctor promotions, influence organization sales performance.
2. To examine the investment on medical sales representative mediates between personal selling factors through medical doctors' promotions and organization sales performance

1.3 Research Questions

Globally the total pharmaceutical market size was estimated at the value of US dollars 1.2 trillion in the year of 2018 and was expected to increase to US dollars 1.5 trillion in 2023 (IQVIA, 2019). Similar trends are seen in the Sri Lankan market and a sizeable market estimated at LKR 88.2 billion (IQVIA, 2020). Pharmaceutical promotions were carried out by medical representatives who promote their products to doctors to prescribe the products they promote to patients (Teresa, 2019). A large amount of the sales and marketing budget is spent on pharmaceutical promotions and personal selling, which can be questioned the effectiveness of this investment. Pharmaceutical companies also influence the medical profession through other promotional tools, including sales promotion, journal advertising on activities, direct marketing, and personal selling (Alovi, 2019). Further, since 2016 as per the NMRA act 2016 of Sri Lanka, pharmaceutical products were subject to price control by a gazette notification by the government of Sri Lanka. This action has significantly reduced the industry's profit margins (Echelon, 2018). Drawing from the above discussion, the most challenging current problem related to the medical marketing industry is to measure if organizations efficiently yield their returns on the investment made on medical sales representatives' selling through medical doctor promotions to promote organizational

pharmaceutical products (brands) to their end-users (patients) significantly helps the organization sales.

Hence, this empirical investigation is carried out to answer the below research questions based on the above discussion.

1. Does personal selling tactics through medical doctor promotions influence organization sales performance.
2. Do investment on medical sales representative mediates between personal selling factors through medical doctors' promotions and organization sales performance.

1.4 Research Hypotheses

This study intends to pursue specific hypotheses formulated. The three hypotheses developed are mentioned as follows.

- i H1: There is a significant relationship between Personal Selling tactics through medical doctor promotions and organization sales performance
- ii H2: The investment on medical sales representative significantly mediates between personal selling tactics through medical doctor promotions and organization sales performance.
- iii H3: There is significant relationship between investment on medical sales representatives and organization sales performance

1.5 Operational Definitions

This study will use three critical constructs in pursuit of the knowledge related to the context in the discussion. These three key constructs are personal selling through medical doctor promotions, organizational investments in sales representatives, and

organizational sales performance. Hence, it is worth defining each of the above constructs for operational purposes.

Personal Selling in Doctor Promotion: Personal selling is one of the critical factors in the overall marketing communication mix. This element is widely used in either highly regulated industries or high-involved product selling industries. Personal selling is defined as communicating about organizational products and services and facilitating the customers to finalize their purchasing decisions Deeter-Schmelz, D. R. (2020). Marketing has changed its general advertising approach to more of a targeted system. This is very much the case in the pharmaceutical industry (Bowers et al., 1991). The responsibilities of the corporate leaders, who manage their organizations in the medical marketing in pharmaceutical industry, should focus on a balanced mix of promotional mix (advertising, sales promotions, personal selling, sponsorships, endorsements) to create an impactful and optimal effect on the market.

Organizational Investments in Sales Representatives: Sales representatives are the linkage between the companies and the customers. They help the organization facilitate and maintain the human relationship with its customers (Pruden, 1969). Therefore, organizations should invest in salespeople to retain and develop them to keep an organizational competitive advantage. Organization investments are of many types. These investment types include salespeople pay, bonuses, commissions, training and development expenses, paid vacations, traveling allowances, field tour-related food and hotel expenses, and vehicle allowances (Hawass, 2012).

Organizational Sales Performance: Organizational or company sales performance is defined as the capability of any organization to survive in the long term (Moldavanova & Goerdel, 2018). They further note that financial independence

depends on a few silos, such as the organization's total turnover and market share in its respective market. This organization's brand holds about its competitors, the overall profitability of the business operation, and finally, the overall value the organization could provide to its stakeholders.

This particular research intends to measure the mediating effects of organizational investment on medical sales representatives between personal selling through doctor promotions and organizational sales performance in the pharmaceutical industry in Sri Lanka. Based on the critical variables defined in the above section, this study will consider personal selling through medical doctor promotions as the independent variable, investments made in medical sales representatives as the mediating variable, and dependent variable will be the organizational sales performance.

1.6 Justifications and Significance of the Study

This DBA academic work helps to explore the degree of influence of the organizational investments on the personal selling element (Peterson, 2020) on sales performance of the organization (Lee et al., 2021). Further the same research will elaborate the degree the amount of influence the personal selling through doctors on the organizational sales performance in the industry of Sri Lankan pharmaceutical market, and to justify the management of the organizations operate in the pharmaceutical industry should continue to invest in personal selling to promote their branded medicines through doctors until the product is prescribed to the patient (end consumer). The outcome of the study will enable the policy makers and decision makers to arrive at suitable model for pharmaceutical promotional guidelines. This may make an impact to the ministry of health who acts as the regulatory for the pharmaceutical industry governing the state and private sector.

This study will benefit in many societal aspects. Therefore, the study design helps to identify the gaps of knowledge from the research to improve various industries. The different industries that will be benefited are the academic staff to build any unfound theory, for the experts in the field of marketing with special emphasis given to managers who managing pharmaceuticals brands in Sri Lanka and around the world. This study will further help the future prospective candidates who wish to carry out further study in the area of influence of pharmaceutical sales representatives influence in organizational sales performance. Additionally, the findings will be used to formulate and propose new investment management-related policymaking for organizations operating in the pharmaceutical industry in Sri Lanka (Wei & Hongxiang, 2018).

1.7 Theoretical Contributions

Personal selling is essential to contacting potential customers individually and convincing them to buy a company's products and services (Mulki et al., 2008). Pharmaceutical companies similarly use personal selling to induce doctors about the excellence of their product benefits and services. Due to personal selling, medical sales representatives explain to their doctors how well the products they promote can satisfy the end consumer's needs (patient). Medical representatives go to the extent of explain to medical doctor of how the product act on each disease areas, the efficacy it brings to patients and how it differs from other products or options available for doctors in the market, giving a value adding service to improve healthcare professionals. They offer their customers the opportunity to make further queries about their products (McFarland, 2019). This helps them to match up their needs and the products. The medical representative notifies doctors of new products/services and describes how best they can use these medical products. Personal selling uniformly assists pharmaceutical companies in boosting their sales and increasing the market sales by recognizing new