

**INVESTIGATION OF CHALLENGES OF THE  
ACCURATE FORECASTING OF DEMAND OF ADULT  
DIAPERS IN SRI LANKA. : CASE STUDY OF A LEADING  
PHARMACEUTICAL COMPANY**

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Master of Logistics & Supply Chain Management

Department of Transport & Logistics Management

University of Moratuwa

Sri Lanka

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## DECLARATION OF THE CANDIDATE & SUPERVISOR

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Date

The above candidate has carried out research for the Masters thesis under my supervision.

Name of the supervisor: Prof. Amal S. Kumarage

.....

Signature of the supervisor:

.....

Date:

## **DEDICATION**

I dedicate this research to my beloved parents who encouraged me providing emotional and spiritual effort in this endeavor....

## **ACKNOWLEDGEMENTS**

There are a number of people without whom this thesis might not have been written, and to whom I am greatly indebted.

First and foremost, I pay gratitude to my supervisor; Prof. Amal S. Kumarage for his excellent supervision, guidance and encouragement to successfully completion of this research.

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## **ABSTRACT**

In this competitive market environment proper product forecasting is a key element for the significant growth of the company. This case study focuses on factors effecting Adult Diaper sales in a reputed pharmaceutical company in Sri Lanka. To face high competition among competitors, organization need to come up with a strategy which can mitigate the above situation. The aim of this study was to explore existing demand factors effecting the diapers segment of the organization, in order to suggest feasible attributes that can be integrated into the enhancement of adult diapers forecast technique in the organization.

In a research the theoretical framework plays a greater role so as to conduct the research. In this study, it is straight forward to determine the factors affecting the accurate forecasting of demand of adult diapers. According to the study, dependent variable is demand of adult diapers whereas independent variables are factors affecting the accurate forecasting of demand of adult diapers.

To gather factors effecting adult diaper sales forecast, had to go through with a thorough literature survey. To further verify the factors found from the literature survey, pilot survey was conducted in open forum which participants for the survey representing different industries. With high rate of score for each factor, same pilot survey factors were taken into the primary survey. The primary survey was done within the organization (internally conducted survey) and gathering information with in the sample population is more accurate.

According to findings, seven factors identified as critical factors having an impact on the diapers forecast. Those factors are poor prediction reliability, unawareness of importance of forecasting, no one is accountable for demand forecast, poor communication among relevant parties when forecasting, planning done around the goals which do not become reality, sales figures did not reflecting the actual demand pattern, product planning issues. Factors were validated through the literature survey. Applicability to local context is validated from the pilot survey.

While using EViews 7, Six years sales data were evaluated. Based on observation all four segments of the adult diapers consist of ARIMA (0,1,1) data models. Further evaluation of the ARIMA model used and based on that for each unit forecasting model was developed. This will provide better solution to the stock out and over stock situation of the organization.

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## **LIST OF ABBREVIATIONS**

<b>Abbreviation</b>	<b>Description</b>
DP	Direct Purchase
OLT	Order Lead Time
AR	Auto Regressive
MA	Moving Average
ACF	Autocorrelation Function
ADF	Augmented Dickey-Fuller
PACF	Partial Autocorrelation Function
ARMA	Autoregressive- Moving Average
ARIMA	Autoregressive Integrated Moving Average model

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