

**ASSESSING THE USER SATISFACTION WITH
MOBILE INTERNET SERVICE PROVIDERS BASED
ON TECHNICAL AND DEMOGRAPHIC FACTORS**

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Dissertation submitted in partial fulfillment of the requirements for the
degree Master of Science in Business Statistics

Department of Mathematics

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Sri Lanka

October 2023

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Abstract

In the contemporary digital landscape, where the internet has become an intrinsic component of daily life, this study titled "Assessing User Satisfaction with Mobile Internet Service Providers Based on Technical and Demographic Factors" sheds light on the pivotal role of the internet in Sri Lanka. This research is driven by three core objectives. The first aims to quantify the technical performance quality of internet services, the second to gauge customer satisfaction and ascertain alignment with service provider performance, and the third to pinpoint customer demographic factors influencing selection of the most effective internet service providers. The study commences in the Narthanagala Grama Niladhari Division, specifically the 616C division in Horana, employing a methodically structured questionnaire to capture demographic data and glean insights into customer experiences. Technical data were observed using "Open Signal" and "Network Cell info" mobile applications. The research hinged on three primary objectives, each facilitated by various statistical theories and techniques. The first objective was achieved through Principal Component Analysis, effectively reducing the initial 9 dimensions of internet service quality to a singular dimension with the primary principal component explaining 84.40% of variance. This reduction was corroborated through the composite index of "Application-Based Technical Performance of Mobile Data Service". Subsequently, the second objective was approached using Factor Analysis and simple linear regression, revealing two influential latent factors: Customer-Perceived Technical Performance of Mobile Data Service and Customer Service Satisfaction, which collectively accounted for 60.66% of variability within a 6-dimensional framework. Lastly, the third objective employed 2-way Frequency Tables and Binary Logistic Regression to discern pivotal demographic variables that significantly impacted the selection of a mobile internet service provider, namely: Period of time using the mobile service to access internet, Client's knowledge of internet data packages available connection, The way client activate data packages, Average monthly fee you pay to access the Internet with their interaction terms. The consistent outcomes from Forward Wald and Forward LR step-wise methods pointed to a 94.4% likelihood of selecting Dialog and a 54.4% likelihood of opting for Mobitel as the mobile internet service provider, culminating in an overall prediction success rate of 78.8%.

Keywords: Principal Component Analysis, Factor Analysis, Simple Linear Regression, and Binary Logistic Regression, Forward Wald, Forward LR

Acknowledgements

The completion of my MSc in Business Statistics dissertation would not have been possible without the unwavering support and collaboration of those who offered their encouragement throughout the project, thereby contributing to its successful execution.

I wish to convey my utmost and sincere gratitude to my supervisor, Dr. D.M.P.V. Dissanayaka, Senior Lecturer (Grade II) within the Department of Statistics & Computer Science, Faculty of Science at the University of Kelaniya. Her patient guidance, consistent encouragement, and dedicated supervision have been instrumental throughout the research period, leading to the successful fruition of my research endeavor. Additionally, I am grateful to collaborator Dr. U.P. Liyanage, also a Senior Lecturer (Grade II) within the Department of Statistics & Computer Science, Faculty of Science, University of Kelaniya, for providing invaluable direction and pertinent knowledge that have contributed significantly to the success of my research.

Moreover, my sincere gratitude to Dr. Ravindi Jayasundara, Senior Lecturer, Department of Mathematics, Faculty of Engineering, University of Moratuwa and Dr. Bimali Jayasinghe, Senior Lecturer, Department of Mathematics, Faculty of Engineering, University of Moratuwa Coordinators of M. Sc. / Post Graduate Diploma in Business Statistics (2017/2018) batch for their guidance and support throughout this study.

Finally, I extend my gratitude to all individuals who have been directly or indirectly involved in my work. Your contributions have played an integral role in its realization, and I am appreciative of your support.

Table of Contents

Declaration, copyright statement and the statement of the supervisor.....	i
Abstract	ii
Acknowledgements	iii
Table of Contents	iv
List of Tables.....	vii
List of Figures	viii
List of Abbreviations.....	ix
CHAPTER 1.....	1
INTRODUCTION.....	1
1.1 Background	1
1.2 Review of Sources.....	3
1.2.1 Open Signal App	3
1.2.2 Network cell Info Lite App.....	5
1.3 Research Problem.....	6
1.4 Objectives of the Study	7
1.5 Significance of the Study	7
1.6 Outline of Dissertation	8
CHAPTER 2.....	9
LITERATURE REVIEW.....	9
2.1 Introduction	9
2.2 Related Studies.....	10
2.3 Research Gap.....	12
2.4 Summary of the Chapter 2	12

CHAPTER 3.....	14
MATERIALS AND METHODS	14
3.1 Methodology	14
3.2 Study Setting	16
3.3 Sample Selection	16
3.4 Variables Used for the Analysis.....	16
3.4.1 Variables from Questionnaire	16
3.4.2 Variables from Mobile apps.....	22
3.5 Statistical Theories and Techniques Used.....	22
3.5.1 Principal component analysis (PCA)	24
3.5.2 Factor analysis (FA).....	27
3.5.3 Simple Linear Regression	29
3.5.4 Analysis of 2-way Frequency Tables	32
3.5.5 Binary Logistic Regression Analysis	33
CHAPTER 4.....	37
Results and Discussion.....	37
4.1 Statistical Analysis to observe results	37
4.2 Testing Outliers	37
4.3 Statistical analysis and interpretation - objective 1	38
4.3.1 Variability of the dataset	38
4.3.2 Correlation of the dataset	39
4.3.3 Eigen Values and Eigen Vectors Analysis.....	42
4.4 Statistical analysis and interpretation - objective 2.....	44
I. Factor Analysis for dimension reduction of the user experience data variables.	
45	
4.4.1 Variability of the dataset	45
4.4.2 Correlation of the dataset	46
4.4.3 Basic Tests Performed.....	48

4.4.4 Eigen values and eigenvector analysis	49
4.4.5 Factor extraction methods with rotation types	50
4.4.6 Results under different Rotations.....	51
II. Simple Linear Regression Analysis for F1 and F2	53
1) Simple Linear Regression Analysis for F1 - Customer-Perceived Technical Performance of Mobile Data Service (Customer_TPMDS) vs "Application-Based Technical Performance of Mobile Data Service" (App_TPMDS).....	53
4.4.7 Correlation matrix for F1 vs App_TPMDS	53
4.4.8 Descriptive statistics of F1 and App_TPMDS	53
4.4.9 ANOVA Analysis	54
4.4.10 Analysis of the parameters of the model.....	55
4.4.11 Diagnostics tests for errors	56
2) Simple Linear Regression Analysis for F2 - Customer Service Satisfaction (Customer_SS) vs Application-Based Technical Performance of Mobile Data Service (App_TPMDS).....	59
4.4.12 Correlation matrix for F2 vs App_TPMDS	59
4.4.13 Descriptive statistics of F2 and App_TPMDS	60
4.4.14 ANOVA Analysis	60
4.4.15 Analysis of the parameters of the model.....	61
4.5 Statistical analysis and interpretation - objective 3.....	62
4.5.1 Significance of the variables	62
4.5.2 Model Building	67
4.5.3 Model Analysis	71
CHAPTER 5.....	75
CONCLUSIONS AND RECOMENDATIONS	75
5.1 Conclusions	75
5.2 Recommendations	77
References	78

Appendix 1 – English Questionnaire	80
Appendix 2 – Sinhala Questionnaire.....	91

List of Tables

Table 3.1: Modifications applied for variables	17
Table 3.2: Marks allocation for video playing quality experience.....	19
Table 3.3: Marks allocation for Gaming experience.....	21
Table 3.5: Two way Frequency Table.....	32
Table 4.1: Descriptive statistics of variables.....	38
Table 4.2: Correlation Matrix table for App data.....	40
Table 4.3: Eigen values of the correlation Matrix.....	42
Table 4.4: Eigen Vector for the PC1	44
Table 4.5: Descriptive Statistics of Data.....	45
Table 4.6: Correlation Matrix table.....	47
Table 4.7: KMO and Bartlett's Test Statistics	48
Table 4.8: Reliability Statistics	48
Table 4.9: Normality test table	49
Table 4.10: Eigen values of the correlation matrix	49
Table 4.11: Communalities of variables	50
Table 4.12: Factor loading with varimax rotation.....	50
Table 4.13: Results under different extraction methods and different rotations.....	51
Table 4.14: Component Score Coefficient Matrix	52
Table 4.15: correlation between F1 vs App_TPMDS.....	53
Table 4.16: Descriptive statistics of F1 and App_TPMDS.....	53
Table 4.17: ANOVA analysis for F1 and App_TPMDS	54
Table 4.18: Properties of the parameters of the model	55
Table 4.19: Model Summery.....	55
Table 4.20: Test of Normality	57
Table 4.21: Statistics of the Residuals in Fitted Model (One sample Statistics)	58
Table 4.22: Statistics of the Residuals in Fitted Model (One sample Tests)	58

Table 4.23: Correlation between F2 vs App_TPMDS	59
Table 4.24: Descriptive statistics of F2 and App_TPMDS	60
Table 4.25: ANOVA table for F2 and App_TPMDS	60
Table 4.26: Properties of the parameters of the model	61
Table 4.27: Model Summary of F2 and App_TPMDS	61
Table 4.28: Chi-Square tests results ratio.....	63
Table 4.29: Association between Period of time using the mobile service to access internet (PTUMS) and Mobile internet service provider	64
Table 4.30: Association between Clients knowledge of internet data packages available connection (CKIDP) and Mobile internet service provider's name	65
Table 4.31: Association between The way client activate data packages (TWCAD) and Mobile internet service provider's name	65
Table 4.32: Association between Average monthly fee you pay to access the Internet (AVGMF) and Mobile internet service provider	66
Table 4.33: Variables in the final equations in test model by using Forward Wald method.....	68
Table 4.34: Summarized outputs of 4 different step-wise methods.....	71
Table 4.35: Model summary of Forward Wald stepwise method	72
Table 4.36: Hosmer - Lemeshow Test	72
Table 4.37: Classification Table.....	73
Table 4.38: Variables in the final equations in test model by using Forward Wald method.....	74

List of Figures

Figure 1.1: Open signal App speed test and video test	4
Figure 1.2: Network cell info lite app data reading interface.....	5
Figure 4.1: Scree plot of the dataset	43
Figure 4.2: Fitted line plot for F1 vs App_TPMDS	56
Figure 4.3: Plot of standardized predicted values vs standardized Residuals.....	57
Figure 4.4: Histogram for Normality Test	58

List of Abbreviations

RSSI - Received Signal Strength Indicator
RSCP - Received Signal Code Power
RSRP - Reference Signal Received Power
RSRQ - Reference Signal Received Quality
SINR - Signal to Noise Plus Interference Ratio
LTE - Signal to Noise Plus Interference Ratio
CDMA - Code Division Multiple Access
WCDMA - Wideband Code Division Multiple Access
GSM - Global System for Mobile communication
PCA - Principal component analysis
FA - Factor Analysis
OCCU - Occupation
PTUMS - Period of time using the mobile service to access internet
CKIDP - Client's knowledge of internet data packages available connection
TWCAD - The way client activate data packages
AVGDU - Average amount of data used per month by client
AVGMF - Average monthly fee you pay to access the Internet
VVE - Voice and video experience
SWPF - Satisfaction with price fairness
App_TPMDS - Application Based Technical Performance of mobile data Service
Customer_TPMDS - Application Based Technical Performance of mobile data Service
Customer_SS - Customer Service Satisfaction
CRM - Customer Relationship Marketing
VQEXP - Video quality experience
GEXP - Gaming experience
VVQEXP - Voice & Video quality experience when using social media apps
CRISPD - Clients rate for internet speed at his/her residence place
CRSWPF - Clients rate for satisfaction with price fairness
CRCSQ - Clients rate for customer service quality