

# INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT

I  
J  
R  
C  
M



A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

*Indexed & Listed at:*

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Cabell's Directories of Publishing Opportunities, U.S.A.

Open J-Gate, India [link of the same is duly available at Inlibnet of University Grants Commission (U.G.C.)],

Index Copernicus Publishers Panel, Poland with IC Value of 5.09 & number of libraries all around the world.

Circulated all over the world & Google has verified that scholars of more than 1866 Cities in 152 countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

<http://ijrcm.org.in/>

# CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	EFFECTIVENESS OF PAY-FOR-PERFORMANCE AND FIXED-PAY PRACTICES: AN ASSESSMENT OF PAY SATISFACTION, COMMITMENT AND TURNOVER INTENTION PRINCY THOMAS & DR. G. NAGALINGAPPA	1
2.	ROLE OF CORPORATE GOVERNANCE ON PERFORMANCE OF PRIVATE COMMERCIAL BANKS IN BANGLADESH: AN ECONOMETRIC ANALYSIS DR. MD NAZRUL ISLAM, MOHAMMAD MASUD ALAM & MOHAMMAD ASHRAFUL FERDOUS CHOWDHURY	6
3.	IDENTIFYING OPPORTUNITIES, CHALLENGES AND INFRASTRUCTURE REQUIREMENTS FOR ESTABLISHING SECONDARY MARKETS IN ETHIOPIA KANNAN SIMHAKUTTY ASURI & LETENAH EJIGU	12
4.	A NOVEL BANKRUPTCY PREDICTION MODEL BASED ON SUPPORT VECTOR DATA DESCRIPTION METHOD ALIREZA DEHVARI, FEZEH ZAHEDI FARD & MAHDI SALEHI	17
5.	ANALYSIS OF FACTORS INFLUENCING EXPORT VOLUME: THE NIGERIAN EXPERIENCE KAREEM, R.O, OKI A.S, RAHEEM, K.A & BASHEER, N.O	24
6.	A MODEL FOR ORGANIZING, MEASURING, ANALYZING STUDENTS' KNOWLEDGE AND PERFORMANCE ROY MATHEW	32
7.	DETERMINANTS OF CUSTOMER LOYALTY AND SUBSCRIBER CHURN OF MOBILE PHONE SERVICES IN GHANA JACOB NUNOO & CHRISTIAN KYEREMEH	38
8.	FACTORS AFFECTING CUSTOMERS' ATTITUDE TOWARDS INFORMATION TECHNOLOGY ADOPTION IN COMMERCIAL BANKS OF ETHIOPIA: A CASE STUDY OF SELECTED BANKS IN MEKELLE CITY ZEMENU AYNADIS	42
9.	EFFECTIVE USE OF TRAINING FEEDBACK FOR REINFORCEMENT OF LEARNING AND EMPLOYEE DEVELOPMENT AJAY KR VERMA, SUDHIR WARIER & LRK KRISHNAN	53
10.	IMPACT OF DEMOGRAPHIC VARIABLES ON FACTORS OF JOB SATISFACTION OF EMPLOYEES IN PUBLIC SECTOR: AN EMPIRICAL STUDY DR. RIZWANA ANSARI, DR. T. N. MURTY, NILOUFER QURAISHY & S A SAMEERA	62
11.	SUBSCRIBERS' ATTITUDE TOWARDS DTH SERVICES M. J. SENTHIL KUMAR & DR. N. R. NAGARAJAN	69
12.	ISSUES AND CHALLENGES INDIAN BUSINESS: VISION 2020 WITH THE REFERENCE OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSMEs) IN INDIA DR. M. L. GUPTA, DR. SHWETABH MITTAL & PRIYANKA GUPTA	73
13.	ENHANCING JOB SATISFACTION OF SOFTWARE PROFESSIONALS: THE RELEVANCE OF EMOTIONAL QUOTIENT V. ANOOPKUMAR & DR. R. GANESAN	82
14.	A SURVEY ON CONSUMER ATTITUDE TO CHOOSE AND USE VARIOUS TELECOM SERVICES V. BALAKUMAR & DR. C. SWARNALATHA	88
15.	COUNTERPRODUCTIVE WORK BEHAVIOUR (CWB) AND LOCUS OF CONTROL (LOC) AMONG MANAGERS DR. RISHIPAL & PAWAN KUMAR CHAND	94
16.	CORPORATE GOVERNANCE FAILURES IN INDIA - A REVIEW KAISSETTY. BALAJI & DR. Y. VENU GOPALA RAO	98
17.	SIGNIFICANCE OF INCLUSIVE GROWTH IN INDIAN ECONOMIC DEVELOPMENT – A STUDY DR. T. C. CHANDRASHEKAR	103
18.	A STUDY ON EMPLOYEE JOB PERFORMANCE (A COMPARATIVE STUDY OF SELECT PUBLIC AND PRIVATE ORGANIZATIONS) S.FAKRUDDIN ALI AHMED & DR. G. MALYADRI	110
19.	ORGANISATIONAL AND ENVIRONMENTAL DETERMINANTS OF PERFORMANCE APPRAISAL SYSTEM: A REVIEW AND FRAMEWORK FROM CONTEXTUAL PERSPECTIVE SAPNA TANEJA, DR. RAVIKESH SRIVASTAVA & DR. N. RAVICHANDRAN	117
20.	E-LEARNING INITIATIVES TO AUGMENT BUSINESS PERFORMANCE: AN EMPIRICAL STUDY OF SELECT AUTO COMPONENT FIRMS DR. AISHA M. SHERIFF & GEETHA R	127
21.	INTERPRETIVE STRUCTURAL MODELING BASED APPROACH FOR ADOPTING CPFR IN INDIAN INDUSTRIES RAJESH A. KUBDE & DR. SATISH V. BANSOD	136
22.	TECHNOLOGY TRENDS AND IMPACT OF ROBOTICS IN THE CORPORATE WORLD AT DIFFERENT LEVELS OF MANAGEMENT P. POONGUZHALI & DR. A. CHANDRA MOHAN	141
23.	PERFORMANCE APPRAISAL ACT AS A MAJOR MOTIVATIONAL SOURCE NAILA IQBAL	147
24.	FOREIGN DIRECT INVESTMENT FLOWS INTO INDIA AND THEIR CAUSAL RELATIONSHIP WITH ECONOMIC GROWTH SINCE LIBERALISATION S. GRAHALSKSHMI & DR. M. JAYALAKSHMI	150
25.	INCLUSIVE GROWTH AND REGIONAL DISPARITIES IN ANDHRA PRADESH V. VANEENDRA NATHA SASTRY	159
26.	STRATEGIES TO COPE UP WORK - PLACE STRESSORS: AN EMPIRICAL STUDY IN EDUCATIONAL INSTITUTIONS B. LAVANYA	162
27.	DETERMINANTS OF JOB SATISFACTION AMONG EMPLOYEES IN INFORMATION TECHNOLOGY INDUSTRY IN DELHI BRAJESH KUMAR & DR. AWADHESH KUMAR	166
28.	MODERN CHALLENGES TO WOMEN ENTREPRENEURSHIP DEVELOPMENT: A STUDY OF DISTRICT RAJOURI IN JAMMU AND KASHMIR STATE AASIM MIR	169
29.	INTERNATIONAL HRM CHALLENGES FOR MNC's B. G. VENKATESH PRASAD & N. CHETAN KUMAR	173
30.	INSIDER TRADING: GOVERNANCE, ETHICAL AND REGULATORY PERSPECTIVE NIDHI SAHORE	177
	REQUEST FOR FEEDBACK	182

## CHIEF PATRON

**PROF. K. K. AGGARWAL**

Chancellor, Lingaya's University, Delhi  
Founder Vice-Chancellor, Guru Gobind Singh Indraprastha University, Delhi  
Ex. Pro Vice-Chancellor, Guru Jambheshwar University, Hisar

## FOUNDER PATRON

**LATE SH. RAM BHAJAN AGGARWAL**

Former State Minister for Home & Tourism, Government of Haryana  
Former Vice-President, Dadri Education Society, Charkhi Dadri  
Former President, Chinar Syntex Ltd. (Textile Mills), Bhiwani

## CO-ORDINATOR

**AMITA**

Faculty, Government M. S., Mohali

## ADVISORS

**DR. PRIYA RANJAN TRIVEDI**

Chancellor, The Global Open University, Nagaland

**PROF. M. S. SENAM RAJU**

Director A. C. D., School of Management Studies, I.G.N.O.U., New Delhi

**PROF. M. N. SHARMA**

Chairman, M.B.A., Haryana College of Technology & Management, Kaithal

**PROF. S. L. MAHANDRU**

Principal (Retd.), Maharaja Agrasen College, Jagadhri

## EDITOR

**PROF. R. K. SHARMA**

Professor, Bharti Vidyapeeth University Institute of Management & Research, New Delhi

## CO-EDITOR

**DR. BHAVET**

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

## EDITORIAL ADVISORY BOARD

**DR. RAJESH MODI**

Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia

**PROF. SANJIV MITTAL**

University School of Management Studies, Guru Gobind Singh I. P. University, Delhi

**PROF. ANIL K. SAINI**

Chairperson (CRC), Guru Gobind Singh I. P. University, Delhi

**DR. SAMBHAVNA**

Faculty, I.I.T.M., Delhi

**DR. MOHENDER KUMAR GUPTA**

Associate Professor, P. J. L. N. Government College, Faridabad

**DR. SHIVAKUMAR DEENE**

Asst. Professor, Dept. of Commerce, School of Business Studies, Central University of Karnataka, Gulbarga

***ASSOCIATE EDITORS***

**PROF. NAWAB ALI KHAN**

Department of Commerce, Aligarh Muslim University, Aligarh, U.P.

**PROF. ABHAY BANSAL**

Head, Department of Information Technology, Amity School of Engineering & Technology, Amity University, Noida

**PROF. A. SURYANARAYANA**

Department of Business Management, Osmania University, Hyderabad

**DR. SAMBHAV GARG**

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

**PROF. V. SELVAM**

SSL, VIT University, Vellore

**DR. PARDEEP AHLAWAT**

Associate Professor, Institute of Management Studies & Research, Maharshi Dayanand University, Rohtak

**DR. S. TABASSUM SULTANA**

Associate Professor, Department of Business Management, Matrusri Institute of P.G. Studies, Hyderabad

**SURJEET SINGH**

Asst. Professor, Department of Computer Science, G. M. N. (P.G.) College, Ambala Cantt.

***TECHNICAL ADVISOR***

**AMITA**

Faculty, Government M. S., Mohali

***FINANCIAL ADVISORS***

**DICKIN GOYAL**

Advocate & Tax Adviser, Panchkula

**NEENA**

Investment Consultant, Chambaghat, Solan, Himachal Pradesh

***LEGAL ADVISORS***

**JITENDER S. CHAHAL**

Advocate, Punjab & Haryana High Court, Chandigarh U.T.

**CHANDER BHUSHAN SHARMA**

Advocate & Consultant, District Courts, Yamunanagar at Jagadhri

***SUPERINTENDENT***

**SURENDER KUMAR POONIA**

## CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Management Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic and Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email address: [infoijrcm@gmail.com](mailto:infoijrcm@gmail.com).

## GUIDELINES FOR SUBMISSION OF MANUSCRIPT

### 1. **COVERING LETTER FOR SUBMISSION:**

DATED: \_\_\_\_\_

**THE EDITOR**  
IJRCM

**Subject:** SUBMISSION OF MANUSCRIPT IN THE AREA OF \_\_\_\_\_.

(e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)

**DEAR SIR/MADAM**

Please find my submission of manuscript entitled ' \_\_\_\_\_ ' for possible publication in your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

#### **NAME OF CORRESPONDING AUTHOR:**

Designation:

Affiliation with full address, contact numbers & Pin Code:

Residential address with Pin Code:

Mobile Number (s):

Landline Number (s):

E-mail Address:

Alternate E-mail Address:

#### **NOTES:**

- a) The whole manuscript is required to be in **ONE MS WORD FILE** only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
- b) The sender is required to mention the following in the **SUBJECT COLUMN** of the mail:  
**New Manuscript for Review in the area of** (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)
- c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
- d) The total size of the file containing the manuscript is required to be below **500 KB**.
- e) Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
- f) The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2. **MANUSCRIPT TITLE:** The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3. **AUTHOR NAME (S) & AFFILIATIONS:** The author (s) **full name, designation, affiliation (s), address, mobile/landline numbers**, and **email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4. **ABSTRACT:** Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5. **KEYWORDS:** Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.
6. **MANUSCRIPT:** Manuscript must be in **BRITISH ENGLISH** prepared on a standard A4 size **PORTRAIT SETTING PAPER**. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.
7. **HEADINGS:** All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.
8. **SUB-HEADINGS:** All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.
9. **MAIN TEXT:** The main text should follow the following sequence:

**INTRODUCTION**

**REVIEW OF LITERATURE**

**NEED/IMPORTANCE OF THE STUDY**

**STATEMENT OF THE PROBLEM**

**OBJECTIVES**

**HYPOTHESES**

**RESEARCH METHODOLOGY**

**RESULTS & DISCUSSION**

**FINDINGS**

**RECOMMENDATIONS/SUGGESTIONS**

**CONCLUSIONS**

**SCOPE FOR FURTHER RESEARCH**

**ACKNOWLEDGMENTS**

**REFERENCES**

**APPENDIX/ANNEXURE**

It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed **5000 WORDS**.

10. **FIGURES & TABLES:** These should be simple, crystal clear, centered, separately numbered & self explained, and **titles must be above the table/figure**. **Sources of data should be mentioned below the table/figure**. It should be ensured that the tables/figures are referred to from the main text.
11. **EQUATIONS:** These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.
12. **REFERENCES:** The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:
  - All works cited in the text (including sources for tables and figures) should be listed alphabetically.
  - Use (ed.) for one editor, and (ed.s) for multiple editors.
  - When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
  - Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
  - The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
  - For titles in a language other than English, provide an English translation in parentheses.
  - The location of endnotes within the text should be indicated by superscript numbers.

**PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:**

**BOOKS**

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

**CONTRIBUTIONS TO BOOKS**

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

**JOURNAL AND OTHER ARTICLES**

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

**CONFERENCE PAPERS**

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

**UNPUBLISHED DISSERTATIONS AND THESES**

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

**ONLINE RESOURCES**

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

**WEBSITES**

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 <http://epw.in/user/viewabstract.jsp>



# DETERMINANTS OF CUSTOMER LOYALTY AND SUBSCRIBER CHURN OF MOBILE PHONE SERVICES IN GHANA

**JACOB NUNOO**

**LECTURER**

**DEPARTMENT OF ECONOMICS**

**UNIVERSITY OF CAPE COAST**

**CAPE COAST**

**CHRISTIAN KYEREMEH**

**PRINCIPAL RESEARCH ASST.**

**DEPARTMENT OF ECONOMICS**

**UNIVERSITY OF CAPE COAST**

**CAPE COAST**

**GHANA**

## ABSTRACT

*This paper investigates determinants of customer loyalty and subscriber churn among Ghanaian tertiary students. The study addresses two research questions: What factors are responsible for customer loyalty in mobile telephony? What factors influence mobile users to change mobile telephone provider? The study employed binary logit model and used a sample survey data. The results indicate that students' mobile switching behaviour is affected by factors relating to customer service, service quality and mobile service price. Also, customer loyalty of students is dependent on call quality and brand image. The results have implications that mobile service providers should consider their service quality, prices, customer service and brand image to retain subscribers.*

## JEL CLASSIFICATION

L86, L96, O33.

## KEYWORDS

Mobile telephone service, customer loyalty, subscriber churn.

## 1. INTRODUCTION

Mobile telephony facilitates personal communication and business transactions. The use of mobile phones for personal and business purposes has been phenomenal in the last few decades. According to International Telecommunication Union (2011), mobile phone subscribers reached 5.4 billion worldwide in 2010. It is also estimated that about 90 percent of the world population has access to mobile telecom networks. In the developed countries, mobile markets have reached saturation levels with average subscriptions of 116 per 100 inhabitants. Between 2005 and 2010 mobile subscription in developing countries increased from 53 percent to 73 percent (ITU, 2011).

Mobile subscriptions in most African countries have increased remarkably and Ghana is no exception. The country's teledensity is one of the highest in the sub-region. According to the National Communication Authority (NCA), Ghana's mobile phone penetration reached 74 percent in 2010. There are five mobile service providers providing mobile telephone services to variety of subscribers. Intense competition in the market among the five operators for subscribers has resulted in a rapid growth of users. The service providers are MTN, Vodafone, tiGo, Expresso and Airtel.

According to NCA, mobile subscription crossed the 17 million mark by the end of 2010. The mobile market is gradually getting saturated and operators are adopting policies to retain their existing subscribers. They are also implementing marketing strategies to lure and attract subscribers from other networks. An interesting question that needs to be answered is: what will compel some clients of one provider to switch to other providers? Or why will clients of one provider refuse to switch to other providers? Given that mobile telephony plays a critical role in promoting business and personal communication, the way forward to approach the improvement in service delivery is to gain a deeper understanding about why some customers change mobile telephony networks and others do not. There is therefore the need to undertake empirical investigation on the customer loyalty and switching behaviour in mobile telecommunication.

A lot of empirical studies have been done on mobile telecommunication in Ghana (Overå, 2005; Chabossou, Stork, Stork & Zahonog, 2008; Sey, 2008). However, none of these studies considered customer loyalty and subscriber churn in Ghanaian mobile telecom market. This study therefore seeks to investigate the determinants of customer loyalty and subscriber churn in the Ghanaian mobile telephony market, focusing on tertiary students mobile phone users. The study addresses two research questions: What factors are responsible for customer loyalty in mobile telephony? What factors influence mobile phone users to change mobile telephone provider? These questions are worth investigating because with the number of mobile telephone providers increasing in Ghana, some customers mostly the youth have been found to be switching from one service provider to another. At the same time others remain loyal to their service providers, citing many reasons for doing so.

The paper is organised as follows. The second section follows with the literature review. The third section looks at overview of the Ghanaian mobile telephony market. Section 4 deals with the methods of the study. This section outlines the survey method and describes the model as well as the estimation technique. Section 7 presents the estimation results and discussion. Section 6 provides the conclusions and policy implications.

## 2. LITERATURE REVIEW

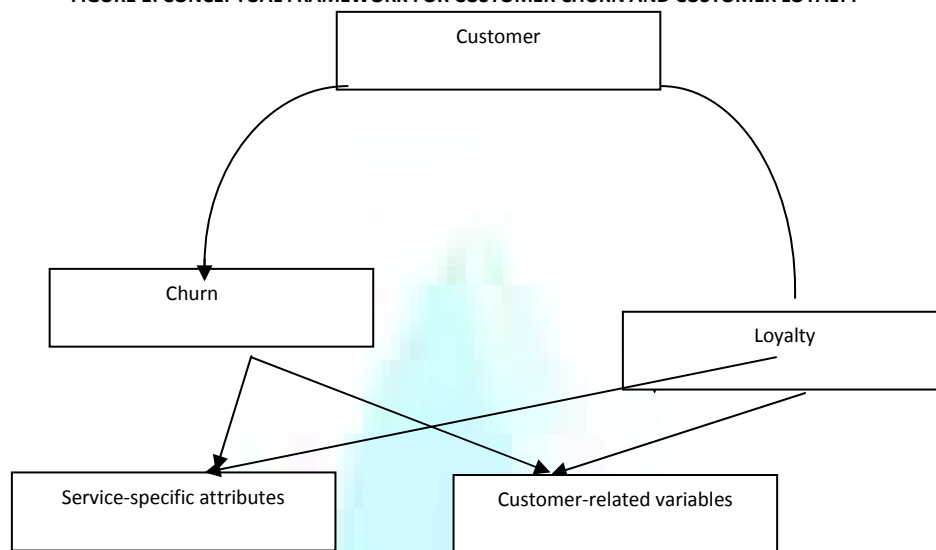
Chander, Laha, Krishna (2006) define customer churn as the tendency of customers to stop doing business with a firm or vendor within a period of time. Customer churn simply means customer defection. In mobile telephony customers defect by changing service providers. Kim and Yoon (2004) argued that customers tend to switch mobile service providers when they are dissatisfied with the services offered them.

Keaveney (1995) discovered that core service failures determine customer switching behaviour in services industries. Ahn, Han and Lee (2006) in their study found that call-quality related factors influence customer churn.

Lee, Lee and Feick (2001) developed three measures of customer loyalty in mobile telephone service from a number of measures provided by Narayandas (1996). The measures are i) willingness to recommend preferred provider to others; ii) repurchase intent and iii) resistance to switching to a competitor's service that is superior to the preferred provider's service. The first measure, willingness to recommend preferred provider to others, shows a strong form of customer loyalty. In this case the customer is not only interested in continuing doing business with the provider but also is willing get more customers for the provider.

The literature shows that customer loyalty and subscriber churn are influenced by customer characteristics and operator-specific attributes. The conceptual framework for customer loyalty and subscriber loyalty is shown in Figure 1. The mobile customer decides to switch to a new service provider or remain with the current service provider. The switching decision is influenced by the customer own characteristics and operator-related variables.

FIGURE 1: CONCEPTUAL FRAMEWORK FOR CUSTOMER CHURN AND CUSTOMER LOYALTY



Source: Researchers' own conceptualization

### 3. OVERVIEW OF GHANAIAAN MOBILE TELEPHONY MARKET

Mobile telephone service in Ghana started in the early 1990s by private telecom network. The state-owned telecom network joined the mobile telephony market some years later. Mobile telephone service was a result of reform undertaken in the telecommunication sub-sector. The sector reform started with the launch of the Accelerated Development Plan (ADP) in 1994. This policy was meant to liberalise and revamp sector through the participation of the private sector as a way of meeting the needs of Ghanaians (Atubra and Frempong, 1999). The private telecom networks focused first on mobile telephone services. Some later added fixed telephone services.

The first company to start mobile telephone service in Ghana was Millicom Ghana limited (mobitel), a subsidiary of Millicom International Cellular S.A of UK/Luxembourg. The company started operation in 1992. A year later, Celtel entered the mobile telephony market. Scancom Ghana Limited entered the market in 1996 and two other mobile operators, Onetouch and Zain, entered the market in 2000 and 2008 respectively. The mobile telephony market in Ghana has been characterized by frequent takeovers and acquisitions. These developments have resulted in rebranding of most of the companies in the market. Scancom, Celtel, Onetouch and Zain have been renamed as MTN Ghana, Expresso, Vodafone and Airtel respectively. Though the ownership structure of Millicom has not changed since it entered the market, its brand name was changed from Buzz to tiGo in March 2006 to conform to global branding strategy (Sey, 2008).

Ghana's mobile telephony market is one of the fastest growing and most competitive markets in the country. Mobile telephony remains the dominant mode of access and accounts for 98.2 percent of total telephone lines. It is important to note that greater majority of mobile subscribers are prepaid. Prepaid subscribers account for over 90 percent of total mobile subscribers. By the end of 2010 MTN Ghana was the market leader with a share of 50%. This was followed by TiGo with a market share of 22.93%. Vodafone was third with a market share of 15.4%. Airtel took the fourth place with the market share of 10%. Expresso trailed with a market share of 1.7%. The market share is likely to change due to acquisition of licence by one of African mobile giants, Globacom International. The company is yet to commence operation. It has promised to roll-out innovative products and services at very affordable rates when it begins operation. Also, the Ministry of Communication together with the NCA Ghana is on the process to implement mobile number portability in the mobile telephony market by July this year. This policy when implemented would give consumers flexibility of choice but as to whether the policy would have a dramatic impact on the mobile telephone service industry is yet to be seen.

### 4. METHODOLOGY

#### ECONOMETRIC MODEL

The mobile customer decision to switch service provider or not is dichotomous and can be analysed using binary logit model based on discrete choice theory. Discrete choice theory is the study of behavior in situations where the individual selects from a finite set of choices. It assumes that an individual is likely to choose an alternative over others when the level of its utility to him is greater than the utility of other alternatives (Kim & Yoon, 2004).

In this study, the set of alternatives is 'to switch' and 'to remain'. The factors that influence the decision of mobile subscriber on whether to switch to other mobile operator are divided into operator attributes and individual-specific factors. The level of utility that the  $n$ th obtains from either churning or remaining with the current provider can be expressed as an indirect utility function in terms of  $Z_{jn}$  (Provider  $j$ 's service attributes) and  $S_n$  (individual-specific factors).

$$U_{jn} = U(Z_{jn}, S_n) \quad j = (\text{switch, remain}) \quad (1)$$

The indirect utility in (1) can be decomposed into an observed ( $V_{jn}$ ) and an unobserved ( $\epsilon_{jn}$ ) components.

$$U_{jn} = V_{jn} + \epsilon_{jn} \quad (2)$$

A binomial logit model is used to relate the probability of a mobile subscriber switching a provider or remaining loyal to a set of explanatory variables which include service attributes and individual-specific variables. The model is expressed as

$$P_i \equiv \Pr[y = 1 | x] = F(x_i' \beta) \quad (1)$$

Where  $P_i$  is the probability that the  $i$ th mobile subscriber will switch service provider,  $x_i'$  is the vector of explanatory variables,  $\beta$  is the vector of parameters to be estimated, and  $F$  indicates the logistic cumulative distribution function.

#### EMPIRICAL MODELS

The empirical models considered for the analysis of customer loyalty and subscriber churn are presented below

$$CL_i = \alpha + \beta_1 Inc_i + \beta_2 Subdu_i + \beta_3 Qua_i + \beta_4 NetCov + \beta_5 Pr_i + \beta_6 BIM_i + \epsilon_i \quad (2)$$

$$SC_i = \alpha + \beta_1 INC_i + \beta_2 Subdu_i + \beta_3 ICS + \beta_4 HPS_i + \beta_5 HC_i + \beta_6 SD_i + \beta_7 LWCS_i + \epsilon_i \quad (3)$$



Where Inc= Income; Subdu= subscription duration; Cqua = call quality; Netcov = Network coverage; Pr = prices of services; BIM = brand image; ICS= Impolite customer services; HPS= High prices of services HC=Hidden charges; SD = service disruption; LWCS = long waiting time for customer services; and  $\epsilon$ = error term. The dependent variables are customer loyalty and subscriber churn. Customer loyalty variable was set to 1 if the subscriber is willing to recommend current service provider to others and 0 if otherwise. For subscriber churn, a value of 1 was set for those willing to switch current service provider and 0 for those not willing to switch service provider.

The explanatory variables include service attributes and customer-related variables. The customer-related variables considered in the two models are income and subscription duration. Subscription duration was measured as the years of subscription with current network while income was measured as the average monthly income received by subscribers. For age, we considered the actual completed age of subscribers. The service attributes considered in the customer loyalty model are: call quality, network coverage, pricing and brand image. Instead of using the service attributes directly, the level of satisfaction of the attributes was considered. A five-point likert scale was adopted to evaluate the level of satisfaction of the alternative service attributes.

For the subscriber churn model, the explanatory variables included high prices of services, impolite customer services, hidden charges, service disruption and long waiting time for customer services. The likeliness of these variables affecting subscriber churn was evaluated using a five-scale likert scale.

#### DATA SOURCE

Data for the study was obtained through survey of tertiary students in Ghana. The population for the study is students of the University of Cape Coast. The study adopted stratified sampling technique to select 813(5%) out of 16260 students of the university. The sampling was done according to courses or programmes of study. The data for the faculties/ schools were obtained from the students' records management unit for the 2010/2011 academic year. The distribution of the students selected for the study is shown in Table 1.

**TABLE 1: DISTRIBUTION OF STUDENTS SAMPLED FOR THE STUDY**

Faculty/School	No. of Students	Selected Students
Agriculture	675	34
Arts	1457	73
Business	1842	92
Education	5746	287
Social sciences	2576	129
Biological Sciences	1656	83
Physical Sciences	2101	105
Medical Sciences	192	10
Total	16245	813

The data for the study was collected using questionnaire. The questionnaire was pretested with 25 students. This was done to validate the questionnaire. The questionnaire was fine-tuned after the pre-test before the main data was collected. Eight hundred and thirteen questionnaires were administered to the selected students but 603(74%) copies of the questionnaire were completed and returned. The remaining 210 (26%) questionnaires could not be retrieved from the field because of various reasons.

#### ESTIMATION TECHNIQUE

The dependent variables are qualitative. Therefore, the ordinary least square technique becomes inappropriate for estimation. The appropriate technique for estimating the logit model is the maximum likelihood estimation. The technique was used to estimate the parameters of our regression models. The Wald test was used to examine the overall fitness of the regressions models. The results of the Wald test indicate that the regression models were of good fit. To be specific, the Wald test statistic for the customer loyalty model was 72.73 with P-value < 0.01. For the subscriber churn model, the Wald test statistic was 23.41 with the P-value of < 0.01. Thus, the regression models were very significant. In order to cater for the problem of heteroscedasticity which is inherent in cross sectional data, the robust coefficients are reported for all the explanatory variables.

## 5. RESULTS

**TABLE 2: DESCRIPTIVE STATISTICS OF SUBSCRIBERS**

	No. of observations	Mean	Minimum	Maximum
Age in years	603	23.06	16	51
Monthly income in Ghana cedis	603	150.30	10	1500
Subscription duration in years	603	5.35	1	13

Table 2 presents the descriptive statistics of subscribers. The ages of student mobile phone subscribers ranged from 16 years to 51 years with the mean age being 23years. The minimum income received by subscribers in a month was 10 Ghana cedis with the highest being 1500 Ghana cedis. The mean income was about 150 Ghana cedis. The average years of subscription for the mobile users were about 5 years.

Table 3 shows that a larger majority of subscribers, 78.5 percent, were willing to recommend their current networks to others while 42.1 percent of subscribers were willing to switch their current service providers.

**TABLE 3: DESCRIPTIVE STATISTICS OF CUSTOMER LOYALTY AND SUBSCRIBER CHURN**

	Yes	No
Loyalty (subscriber willing to recommend current network to someone)	474 (78.5)	129 (21.4)
Churn (subscriber willing to switch current service provider)	254 (42.1)	349 (57.9)
Total	603 (100.0)	603 (100.0)

#### ESTIMATED RESULTS AND DISCUSSION

In Table 4, we present the estimated results for variables used to explain customer loyalty. The results reveal that call quality and brand image significantly determine customer loyalty. The estimated parameters of call quality and brand image are positive and significant at 1 percent. The positive coefficient of call quality indicates that a subscriber is more likely to stay with the current service provider when call quality improves. In general, consumers would want to stick to service provider offering quality services to them.

TABLE 4: ESTIMATED RESULTS FOR CUSTOMER LOYALTY

Variable	Robust Coeff.	Odds ratio	P-value
INC	0.0012	1.0013	0.109
Subdu	-0.0419	0.9588	0.370
Cqua	1.6936	5.8457	0.000***
Netcov	0.2578	1.0910	0.756
Pr	0.3957	1.4732	0.136
BIM	0.8146	2.2561	0.000***
Constant	-1.1280		0.004***
No. of Obs =603 Wald Chi2(6) =72.73 Prob>Chi2 =0.0000 Pseudo R2 = 0.1274			

Note: \*\*\*indicates statistical significance at 1% level.

The positive coefficient of brand image indicates that improvement in brand image is necessary to retain customers. This stresses the need for service providers to build strong image if they are to retain subscribers. This finding confirms the works of Kim and Yoon (2004) and Lai et al (2009). The results show that customer loyalty is not influenced by network coverage and prices of providers. The estimated coefficients of these variables were not significant.

As can be seen from Table 5, customer-related variables (i.e. income and subscription duration) are not significant in explaining customer loyalty. The insignificant coefficient of subscription duration implies that years of subscription do not create lock-in effects on students' mobile phone users. This finding is consistent with the work of Kim and Yoon (2004) which reported insignificant results for subscription duration in their study.

TABLE 5: ESTIMATED RESULTS FOR SUBSCRIBER CHURN

Variable	Robust Coeff.	Odds ratio	P-value
INC	0.0006	1.0008	0.291
Subdu	-0.0311	0.9626	0.337
ICS	-0.4613	0.6528	0.019**
HPS	0.6702	2.0563	0.022**
HC	-0.4542	0.6386	0.085*
SD	0.4089	1.2759	0.002***
LWCS	0.2767	1.4940	0.083*
Constant	-0.7558		0.005***
No. of Obs =603 Wald Chi2(6) =23.41 Prob>Chi2 =0.0014 Pseudo R2 = 0.0328			

Note: \*\*\*, \*\* and \* indicate statistical significance at 1%, 5% and 10% levels respectively

As shown in Table 5, impolite customer services, high prices of services, hidden charges, service disruption and long waiting time for customer services significantly determine subscriber churn. This implies that when consumers are satisfied with the tariff level they tend to stay with their service providers. The findings are consistent with the work of Sathish et al (2011). Our results have implication that mobile service providers can discourage subscriber churn by offering lower prices and avoid hidden charges. In the same way, reducing service disruptions and improving customer service could result in lower churning. Just like the customer loyalty model, customer-related variables were not statistically significant in explaining subscriber churn of mobile telephone services.

## 6. CONCLUSIONS AND POLICY IMPLICATIONS

This paper sought to investigate the determinants of customer loyalty and subscriber churn of Ghanaian tertiary students' mobile phone users. The main conclusions of the study are considered below. It was realised that call quality and brand image affect customer loyalty in mobile service industry. A strong correlation was found between high prices of service and subscriber churn. Service disruption was found to be an important determinant of subscriber churn. Customer loyalty and churn are not related to customer-related variables. Thus, the decision to retain subscribers is at the discretion of service providers. The policy implications derived from the results of the study are as follows. There is the need for mobile service providers to build strong corporate image to retain subscribers. Also, improvement in call quality is necessary to retain subscribers. The study shows that high services prices determine subscriber churn so mobile service providers should offer low prices to retain subscribers. The study reveals that service disruption leads to subscriber churn so mobile phone providers should improve service quality to discourage churn.

## 7. REFERENCES

- Ahn, J-H., Han, S-P., & Lee, Y-S. (2006). Customer churn analysis: Churn determinants and mediation effects of partial defection in the Korean mobile telecommunications service industry. *Telecommunication Policy*, 30, 552-568.
- Atubra, W. H. & Frempong, G.K. (1999). Assessment of the telecom sector of Ghana. Working paper series, No. 1 CTI/University of Ghana, Accra.
- Chabossou, A., Stork, C., Stork, M., & Zahonog, P. (2008). Mobile telephony access and usage in Africa. *The Southern African Journal of Information and Communication*, 9, 17-49.
- Chander, M., Laha, A., & Krishna, P. (2006). Modelling churn behaviour of bank customers using predictive data mining techniques. National conference on soft computing techniques for engineering applications (SCT-2006).
- ITU (2011). World telecommunication/ICT indicators database 2010. Retrieved from <http://www.itu.int/ict/statistics>
- Keaveney, S. M. (1995). Customer switching behaviour in service industries: An exploratory study. *Journal of Marketing*, 59(2), 71-82.
- Kim, H-S., & Yoon, C-H. (2004). Determinants of subscriber churn and customer loyalty in the Korean mobile telephony market. *Telecommunication Policy*, 28, 751-765.
- Lai, F., Griffin, M., & Babin, B. (2009). How quality, value, image, and satisfaction create loyalty at a Chinese telecom. *Journal of Business Res.*, 62, 980-986.
- Lee, H. S. (2010). Factors Influencing Customer Loyalty of Mobile Phone Service: Empirical Evidence from Koreans. *Journal of Internet Banking and Commerce*, 15(2).
- Lee, J., Lee, J., & Feick, L. (2001). The impact of switching costs on the customer satisfaction-loyalty link: Mobile phone service in France. *Journal of Service Marketing*, 15(1), 35-48.
- Overå, R. (2005). Networks, distance and trust: Telecommunications development and changing trading practices in Ghana. *World Development*, 34 (7), 1301-1315.
- Sathish, M., Kumar, K.S., Naveen, K. J., & Jeevanantham, V. (2011). A study on consumer switching behaviour in cellular service provider: A study with reference to Chennai. *Far East Journal of Psychology and Business*, 2(2), 71-81.
- Sey, A. (2008). Mobile communication and development: A case study of mobile phone appropriation in Ghana. Unpublished doctoral dissertation, University of Southern California, Southern California.

## **REQUEST FOR FEEDBACK**

**Dear Readers**

At the very outset, International Journal of Research in Commerce, IT and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mail i.e. **infoijrcm@gmail.com** for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail [infoijrcm@gmail.com](mailto:infoijrcm@gmail.com).

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

**Academically yours**

Sd/-

**Co-ordinator**

## ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

### *Our Other Journals*

