

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & 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 2401 Cities in 155 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.	RELATIONSHIP BETWEEN HEALTH STATUS AND EXPENDITURE ON HEALTH <i>MURAT DARCIN</i>	1
2.	THE ANALYSIS OF THE SERVICE QUALITY IN HOTEL INDUSTRY <i>DR. ELEINA QIRICI, DR. ORIOLA THEODHORI & DR. ESMERALDA SHKIRA</i>	6
3.	A STUDY ON SOCIO – ECONOMIC STATUS OF INTEGRATED FARMERS IN NORTH WESTERN ZONE OF TAMILNADU STATE <i>SASIKALA. V & RUPASI TIWARI</i>	10
4.	ORGANIZATION CITIZENSHIP BEHAVIOUR: IT'S RELATION WITH MANAGEMENT STYLE AND ITS ANTECEDENTS <i>AFAQ RASOOL, DR. MUHAMMAD RAMZAN & GHULAM MUSTAFA SHAMI</i>	15
5.	EXISTING GAP BETWEEN THE FINANCIAL LITERACY AND SAVING/INVESTMENT BEHAVIOUR AMONG INDIAN WOMEN: AN EMPIRICAL STUDY WITH SPECIAL REFERENCES TO COIMBATORE CITY <i>DR. R. MATHIVANAN & K. MOHANARANJANI</i>	20
6.	AN ANALYSIS OF AWARENESS AMONG SECONDARY SCHOOL TEACHERS TOWARDS CONTINUOUS AND COMPREHENSIVE EVALUATION IN CENTRAL INDIA <i>PRASHANT THOTE, L.MATHEW & D.P.S RATHOURE</i>	26
7.	CURRENCY FUTURES POTENTIAL IN INDIAN CAPITAL MARKETS <i>DR. DEEPAK TANDON, DR. NEELAM TANDON & HAVISH MADHVAPATY</i>	29
8.	DETERMINANTS OF INSTITUTIONAL CREDIT TO AGRICULTURE IN UNION TERRITORY OF PUDUCHERRY: AN ECONOMIC ANALYSIS <i>K. VIJAYASARATHY, A. POUCHEPPADRAJOU & M. SANKAR</i>	38
9.	AGED RURAL PEOPLE'S HEALTH PROBLEMS: A CASE STUDY OF KANYAKUMARI DISTRICT <i>J. CYRIL KANMONY</i>	43
10.	HEALTH STATUS OF THE SKILLED COALMINE WORKERS: A STUDY IN JAINTIA HILLS DISTRICT OF MEGHALAYA <i>DR. B.P.SAHU & DR. P. NONGTDU</i>	50
11.	A STUDY ON VODAFONE TAXATION – INDIA'S VIEW <i>DR. G. VELMURUGAN</i>	55
12.	APPLICABILITY OF FISHER HYPOTHESIS ON INDIAN CAPITAL MARKET <i>DR. SAMIRAN JANA</i>	58
13.	GLOBALIZATION AND CHANGING LIFE STYLE OF INDIAN MIDDLE CLASS <i>AMANDEEP KAUR & RANJEET KAUR</i>	62
14.	PROBLEMS AND PROSPECTS OF POWERLOOM UNITS WITH SPECIAL REFERENCE TO SOMANUR CLUSTER IN COIMBATORE CITY <i>DR. D. ANUSYA & R. PREMA</i>	69
15.	WORK LIFE BALANCE OF WOMEN FACULTY WORKING IN EDUCATIONAL INSTITUTIONS: ISSUES AND PROBLEMS <i>DR. B. VIJAYALAKSHMI & T. NAVANEETHA</i>	73
16.	GEMS AND JEWELLERY: THE DARK HORSE OF INDIAN EXPORTS <i>PURNASHREE DAS & SAURABHI BORTHAKUR</i>	76
17.	AN IMPACT OF FINANCIAL DERIVATIVES ON INDIAN STOCK MARKET <i>C.KAVITHA</i>	80
18.	NEW HORIZON IN MANAGEMENT EDUCATION: AN INVESTIGATION INTO THE ROARING NEED OF PHILANTHROPY MANAGEMENT COURSES IN INDIAN MANAGEMENT INSTITUTES <i>DR. TRIPTI SAHU</i>	87
19.	THE ROLE OF HOME-BASED ENTERPRISES (HBES) IN DEVELOPMENT OF ENTREPRENEURSHIP IN SONITPUR DISTRICT OF ASSAM <i>MANOJ KUMAR HAZARIKA & DAISY RANI KALITA</i>	93
20.	EMPLOYEE GRIEVANCE REDRESSAL PROCEDURE IN INDIAN ORGANIZATIONS <i>DR. NILESH THAKRE</i>	98
21.	WASHINGTON MUTUAL, INC.: FORTUNE 500 TO NOWHERE <i>RAJNI KANT RAJHANS</i>	101
22.	FDI IN ORGANIZED RETAIL SECTOR: A COMPARATIVE STUDY BETWEEN INDIA AND CHINA <i>DR. NAVITHA THIMMAIAH & ASHWINI.K.J</i>	103
23.	FOREIGN DIRECT INVESTMENT INFLOWS INTO USA <i>DR. G. JAYACHANDRAN & V.LEKHA</i>	107
24.	ARIMA MODEL BUILDING AND FORECASTING OF GDP IN BANGLADESH: THE TIME SERIES ANALYSIS APPROACH <i>MONSURA ZAMAN</i>	113
25.	INFLUENCE OF CORPORATE SOCIAL RESPONSIBILITY AND CORPORATE CULTURE TO THE STRATEGIC ALIGNMENT MATURITY, BUSINESS PERFORMANCE AND CORPORATE SUSTAINABILITY AT THE CONSUMER SERVICE UNIT OF EAST JAVA REGIONAL V OF PT TELEKOMUNIKASI INDONESIA <i>MUHAMMAD SYARIF, BUDIMAN CHRISTIANANTA & ANIS ELIYANA</i>	118
26.	HAS PARTICIPATION IN URBAN AND PERI-URBAN AGRICULTURE CONTRIBUTED TO POVERTY REDUCTION AND FOOD SECURITY? THE CASE OF BAHIR DAR CITY, ETHIOPIA <i>SURAFEL MELAK & GETACHEW YIRGA</i>	123
27.	INSURANCE MARKET DEVELOPMENT AND ECONOMIC GROWTH IN ETHIOPIA <i>TERAMAJE WALLE MEKONNEN</i>	129
28.	IMPACT OF MACROECONOMIC VARIABLES ON STOCK MARKET RETURNS <i>AMARA & SHAHID ALI</i>	136
29.	IMPACT OF CHANGE AGENT'S ASSOCIATION IN CHANGE PROCESS <i>RITU SHARMA</i>	140
30.	INDIA'S TRADE WITH BRAZIL: POWER AND LATENT FOR FUTURE ENHANCEMENTS IN TRADE <i>NASSIR UL HAQ WANI, KANCHAN TANEJA & SUMAIR NABI</i>	143
	REQUEST FOR FEEDBACK	148

CHIEF PATRON

PROF. K. K. AGGARWAL

Chancellor, Lingaya's University, Delhi
Founder Vice-Chancellor, GuruGobindSinghIndraprasthaUniversity, Delhi
Ex. Pro Vice-Chancellor, GuruJambheshwarUniversity, 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

DR. BHAVET

Faculty, Shree Ram Institute of Business & Management, Urjani

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., HaryanaCollege of Technology & Management, Kaithal

PROF. S. L. MAHANDRU

Principal (Retd.), MaharajaAgrasenCollege, Jagadhri

EDITOR

PROF. R. K. SHARMA

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

CO-EDITOR

DR. SAMBHAV GARG

Faculty, Shree Ram Institute of Business & Management, Urjani

EDITORIAL ADVISORY BOARD

DR. RAJESH MODI

Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia

PROF. SIKANDER KUMAR

Chairman, Department of Economics, HimachalPradeshUniversity, Shimla, Himachal Pradesh

PROF. SANJIV MITTAL

UniversitySchool of Management Studies, GuruGobindSinghI. P. University, Delhi

PROF. RAJENDER GUPTA

Convener, Board of Studies in Economics, University of Jammu, Jammu

PROF. NAWAB ALI KHAN

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

PROF. S. P. TIWARI

Head, Department of Economics & Rural Development, Dr. Ram Manohar Lohia Avadh University, Faizabad

DR. ANIL CHANDHOK

Professor, Faculty of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

DR. ASHOK KUMAR CHAUHAN

Reader, Department of Economics, Kurukshetra University, Kurukshetra

DR. SAMBHAVNA

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

DR. MOHENDER KUMAR GUPTA

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

DR. VIVEK CHAWLA

Associate Professor, Kurukshetra University, Kurukshetra

DR. SHIVAKUMAR DEENE

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

ASSOCIATE EDITORS

PROF. ABHAY BANSAL

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

PARVEEN KHURANA

Associate Professor, Mukand Lal National College, Yamuna Nagar

SHASHI KHURANA

Associate Professor, S.M.S. Khalsa Lubana Girls College, Barara, Ambala

SUNIL KUMAR KARWASRA

Principal, Aakash College of Education, Chanderkalan, Tohana, Fatehabad

DR. VIKAS CHOUDHARY

Asst. Professor, N.I.T. (University), Kurukshetra

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, Education, 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.

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>

RELATIONSHIP BETWEEN HEALTH STATUS AND EXPENDITURE ON HEALTH

MURAT DARCIN
DIRECTOR
MINISTRY OF INTERIOR AFFAIRS
ANKARA

ABSTRACT

In this article, it has been examined the relationship between expenditure on health and health status by using canonical correlation analysis. The study uses life expectancy at birth (years), under 5 mortality rate (per 1,000), adult mortality rate (per 1,000) and total fatality rate (per 1,000) as health status indicators. Five indicators of the expenditure on health were used: total expenditure on health as % of gross domestic product, per capita total expenditure on health at average exchange rate (US\$), per capita total expenditure on health at international dollar rate, per capita government expenditure on health at average exchange rate (US\$), per capita government expenditure on health at international dollar rate. The results of the analyses provided evidence that expenditure on health is important determinants of health status.

KEYWORDS

Health status; expenditure on health.

1. INTRODUCTION

To see the desired impact of made health expenditures on country's healthcare status, the comparison of the health expenditures with country's health status, is very important.

According to the World Health Organization, health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." In other worlds, the state of being healthy is not only about having not diseases or discomfort but at the same time, it is about mental well-being. Because of health is about one person's physical and mental status, it can be defined as what to do for health services to keep individuals and society in a good state of physical, mental, and social aspect to help them to continue with their lives. As well as elimination of factors that cause diseases, eradication of diseases or illness preventive measures, considered within the scope of health services.

Health expenditures within the scope of health services ensure future cost-savings while maintaining the ability to work and reducing future health problems. Health status of the community is related to the country's socio-economic condition and rational use of resources. For example; OECD countries that make up 19% of the population of the world, take the 85% of the total health expenditures.

The average life expectancy or in other words how long time people live shows how good quality of life provided by the country to their citizens or for that matter, it is a very significant indicator in evaluating the capacity of that country. Another indicator which is very closely related to this indicator is infant-mortality and under-five child mortality rate.

In this study, the relationship between healthy life indicator and expenditure on health in some countries was examined by canonical correlation analysis method using NCSS (Number Cruncher Statistical System) packaged-software.

2. MATERIAL AND METHODS**2.1. Material**

Material of this study is 100 countries. Data were collected from 100 countries by using World Health Organization statistics. Variables divided into two sets. The first set is health status data set (X variables set) and the second set is expenditure on health set (Y variables set).

The health status includes these variables:

- c1: Total fatality rate.
- c2: Life expectancy at birth (years) (both sexes).
- c3: Under 5 mortality rate (both sexes).
- c4: Life expectancy at birth males.
- c5: Life expectancy at birth females.
- c6: Under 5 mortality rate males.
- c7: Under 5 mortality rate females.
- c8: Adult mortality rate males.
- c9: Adult mortality rate females.

The expenditure on health includes these variables:

- c10: Total expenditure on health as % of gross domestic product %.
- c11: Per capita total expenditure on health at average exchange rate (US\$).
- c12: Per capita total expenditure on health at international dollar rate.
- c13: Per capita government expenditure on health at average exchange rate (US\$).
- c14: Per capita government expenditure on health at international dollar rate.

2.2. Statistical method

The relationship between traffic-related mortality and economic development was examined by Canonical Correlation Analysis (CCA) method using NCSS (Number Cruncher Statistical System) packaged-software.

Canonical correlation is an exploratory statistical technique that examines the relationship between two sets of variables where each set contains more than one variable. It can be considered as a method of aggregating multiple associations into a few significant associations (Johnson and Wichern, 2002; Martin *et al.*, 2005).

CCA is a generalization of the ordinary Pearson correlation coefficient to multi-dimensional variables (Ridderstolpe *et al.*, 2005) and measures the association between two sets of multi-dimensional variables by assessing the correlation between the linear combinations of one set of variables with the linear combinations of a second set of variables (Johnson and Wichern, 2002; Martin *et al.*, 2005; Ridderstolpe *et al.*, 2005).

CCA can be viewed as an extension of multiple regression to situations involving more than one single response variable (Anderson, 1984; Borga, 1998; Ridderstolpe *et al.*, 2005). CCA finds the coordinate system that is optimal for correlation analysis. Canonical correlations are invariant to scaling of the variables (Ridderstolpe *et al.*, 2005).

The optimization criterion is to maximize the association between two groups of variables rather than to maximize the amount of multivariate variation (Martin *et al.*, 2005). CCA is not an indicator of causality (Khattree and Naik, 2000), but a common spatial structure of canonical variables pairs is evidence of the spatial association between these groups of variables (Johnson *et al.*, 2002; Wu *et al.*, 2002; Martin *et al.*, 2005)

CCA gives the maximum correlations between two sets of variables, and at the same time it gives the optimal explanation of variability within the subgroup of variables. Canonical correlation is the most appropriate and powerful multivariate technique if there are multiple dependent and independent variables, It has

been used in many fields and represents a useful tool for multivariate analysis. Canonical correlation represents the only technique available for examining the relationship with multiple dependent variables. Canonical correlation derives the variates to maximize their correlation. This is another unique feature of canonical correlation (Hair *et al.*, 1998).

CCA is used to investigate the relationship between a linear combination of the set of X variables with a linear combination of a set of Y variables. Consider two groups of variables (X and Y) such that one has p variables (X1, X2, ..., Xp), and the other has q variables (Y1, Y2, ..., Yq). Linear combinations of the original variables can be defined as canonical variates (Wm and Vm) as follows:

$$W_m = a_{m1}X_1 + a_{m2}X_2 + \dots + a_{mp}X_p \tag{1}$$

$$V_m = b_{m1}Y_1 + b_{m2}Y_2 + \dots + b_{mq}Y_q \tag{2}$$

The two resulting linear combinations, one of x-variables and one of y-variables are called the first canonical variables or the first pair of canonical variables (Ridderstolpe *et al.*, 2005).

The correlation between Wm and Vm can be called canonical correlation (Cm). Squared canonical correlation (canonical roots or eigenvalues) represents the amount of variance in one canonical variate accounted for by the other canonical variate (Hair *et al.*, 1998).

The linear combination of the components of X and the components of Y would be W=a'X and V=b'Y, respectively. Variances and (co)variances of canonical variates as follows:

$$\text{Var}(W) = a' \text{Cov}(X) a = a' \Sigma_{11} a \tag{3}$$

$$\text{Var}(V) = b' \text{Cov}(Y) b = b' \Sigma_{22} b \tag{4}$$

$$\text{Cov}(W, V) = a' \text{Cov}(X, Y) b = a' \Sigma_{12} b \tag{5}$$

Then the correlation coefficient between W and V canonical variates is

$$r(V, W) = \frac{a' \Sigma_{12} b}{\sqrt{(a' \Sigma_{11} a)(b' \Sigma_{22} b)}} \tag{6}$$

The null hypotheses is that

$$H_0 : r_1 = r_2 = \dots = r_m = 0 \tag{7}$$

and alternative hypotheses is that

$$H_1: \text{not all } r\text{'s are equal.} \tag{8}$$

For testing the above hypothesis, the most widely used test statistic Wilks' lambda is defined as follows:

$$\Lambda = \prod_{i=1}^m (1 - r_i^2) \tag{9}$$

i+1

It is used Wilks' lambda statistic to develop an approximate chi-square test with pq degrees of freedom:

$$\chi^2 = -[n - 0.5(p + q + 1)] \ln \Lambda \tag{10}$$

In formula (10) n is the number of cases, ln states the natural logarithm function, p is the number of variables in one set and q is the number of variables in the other set.

The statistical significance of χ^2 test is compared with $\alpha = 0.05, 0.01, 0.001$ critical value of chi-square statistic with pq degrees of freedom.

Matrix scores on canonical variates of Vi and Wi are calculated by using values in original data. The sum of canonical scores for each variate is equal to zero. Correlation coefficients between canonical scores (Vi and Wi) and observed values (Xi, Yi) are called as canonical weights or canonical structure and calculated as follows:

$$CV_i X_i = \text{corr}(V_i, X_i) \tag{11}$$

$$CV_i Y_i = \text{corr}(V_i, Y_i) \tag{12}$$

Canonical weights are used to determine which variables effect markedly to which one of the canonical variates. The canonical weights allow the user to understand how each variable in each set uniquely contributes to the respective weighted sum of canonical variate.

Explained variance is the sum of the squared canonical weights divided by the number of variables in the set and defines how much variance each canonical variate explains.

$$\text{Explained Variance (X)} = \frac{\sum_{i=1}^k c_i^2 v_i x_i}{p} \tag{13}$$

$$\text{Explained Variance (Y)} = \frac{\sum_{i=1}^k c_i^2 w_i y_i}{q} \tag{14}$$

The high number of explained variance can clarify whether or not eigenvalues of solution matrix are acceptable level to state correlation between observed two sets by canonical correlation of the sets.

3. RESULTS

Descriptive statistics (the mean values and standard deviation) of each variable considered in both sets are presented in Table 1.

TABLE 1: DESCRIPTIVE STATISTICS SECTION

Type	Variable	Mean	Standard Deviation
Y	C1	2,324	1,096101
Y	C2	71,7	8,182884
Y	C3	28,76	35,05958
Y	C4	68,96	7,85078
Y	C5	74,41	8,519846
Y	C6	30,68	36,62336
Y	C7	26,7	33,61532
Y	C8	210,45	123,7263
Y	C9	131,15	111,0964
X	C10	6,765	2,437227
X	C11	934,56	1342,915
X	C12	1061,53	1162,864
X	C13	669,69	993,1007
X	C14	736,41	856,3143

The Pearson's correlations between variables of health status and variables of expenditure on health are shown in Table 2.

TABLE 2: CORRELATION SECTION

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1	1,00	-0,73	0,79	-0,66	-0,78	0,78	0,79	0,53	0,72	-0,30	-0,35	-0,42	-0,34	-0,41
C2	-0,73	1,00	-0,90	0,99	0,99	-0,90	-0,89	-0,93	-0,93	0,42	0,57	0,62	0,57	0,62
C3	0,79	-0,90	1,00	-0,86	-0,91	1,00	1,00	0,72	0,82	-0,40	-0,43	-0,49	-0,42	-0,49
C4	-0,66	0,99	-0,86	1,00	0,95	-0,87	-0,85	-0,96	-0,91	0,41	0,58	0,62	0,58	0,62
C5	-0,78	0,99	-0,91	0,95	1,00	-0,91	-0,91	-0,87	-0,95	0,42	0,54	0,59	0,54	0,60
C6	0,78	-0,90	1,00	-0,87	-0,91	1,00	0,99	0,73	0,82	-0,40	-0,43	-0,49	-0,43	-0,49
C7	0,79	-0,89	1,00	-0,85	-0,91	0,99	1,00	0,71	0,81	-0,39	-0,42	-0,48	-0,42	-0,48
C8	0,53	-0,93	0,72	-0,96	-0,87	0,73	0,71	1,00	0,90	-0,29	-0,49	-0,51	-0,49	-0,52
C9	0,72	-0,93	0,82	-0,91	-0,95	0,82	0,81	0,90	1,00	-0,26	-0,40	-0,44	-0,40	-0,45
C10	-0,30	0,42	-0,40	0,41	0,42	-0,40	-0,39	-0,29	-0,26	1,00	0,66	0,71	0,61	0,65
C11	-0,35	0,57	-0,43	0,58	0,54	-0,43	-0,42	-0,49	-0,40	0,66	1,00	0,98	0,97	0,96
C12	-0,42	0,62	-0,49	0,62	0,59	-0,49	-0,48	-0,51	-0,44	0,71	0,98	1,00	0,94	0,96
C13	-0,34	0,57	-0,42	0,58	0,54	-0,43	-0,42	-0,49	-0,40	0,61	0,97	0,94	1,00	0,98
C14	-0,41	0,62	-0,49	0,62	0,60	-0,49	-0,48	-0,52	-0,45	0,65	0,96	0,96	0,98	1,00

These correlations show that fatality and mortality rates are negatively correlated to variables of the expenditure on health, life expectancy at birth is positively correlated to the expenditure on health.

Through canonical correlation analysis, a composite (also called as canonical function) of the health status accounts that correlate with a composite of the expenditure on health accounts is derived. The canonical correlation analysis procedure provides as many pairs as there are accounts in the smaller set, which is five in this study.

The test statistics for the canonical correlation analysis are presented in Table 3. The canonical correlations between the first (0,836) were found to be significant (p<0,01) from the likelihood ratio test. The remaining canonical correlation is not statistically significant (p>0,05).

By construeing the first canonical variate it is possible to find relationship between the health status and the expenditure on health as rate of 69,93 %.

TABLE 3: CANONICAL CORRELATIONS SECTION

Variate Number	Canonical Correlation	R-Squared	F-Value	Num DF	Den DF	Prob Level	Wilks' Lambda
1	0,836241	0,699299	3,48	45	388	0	0,21898
2	0,433391	0,187828	0,9	32	322	0,619277	0,728232
3	0,279369	0,078047	0,47	21	253	0,979194	0,896648
4	0,154806	0,023965	0,21	12	178	0,997989	0,972553
5	0,05973	0,003568	0,06	5	90	0,997105	0,996432
F-value tests whether this canonical correlation and those following are zero.							

For the first canonical variate suggests that about 31,3% of the variation in Y variables is explained by the X variables and about 57,3% of the variation in X variables is explained by the Y variables (Table 4). These values indicate that health status and expenditure on health interdependencies were strong.

TABLE 4: VARIATION EXPLAINED SECTION

Canonical Variate Number	Variation in these Variables	Explained by these Variates	Individual Percent Explained	Cumulative Percent Explained	Canonical Correlation Squared
1	Y	Y	44,7	44,7	0,6993
1	Y	X	31,3	31,3	0,6993
1	X	Y	57,3	57,3	0,6993
1	X	X	81,9	81,9	0,6993

Standardized canonical coefficients for the first X,Y variate are given in Table 5. Standardized canonical coefficients shows variation (kind of standard deviation) in canonical variate in parallel with 1 standart deviation increase in orijinal variables. In other words these coefficients represent relative contributions of orijinal variables to the related variate.

Equations of Y1 and X1 canonical variate are as follows:

$$Y1 = -0,137c1 + 4,107c2 + 17,237c3 - 0,749c4 + 0,228c5 - 8,979c6 - 7,269c7 + 0,698c8 + 1,456c9$$

$$X1 = 0,0007c10 - 0,845c11 + 1,006c12 - 0,084c13 + 0,903c14$$

TABLE 5: STANDARDIZED CANONICAL COEFFICIENTS SECTION

Y1	Standardized Y Canonical Coefficients Section								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
	-0,13709	4,107394	17,23734	-0,74893	0,227503	-8,97919	-7,26907	0,697967	1,455561
X1	Standardized X Canonical CoefficientsSection								
	C10	C11	C12	C13	C14				
	0,00074	-0,84543	1,006209	-0,08429	0,903134				

Since the canonical coefficients can be unstable due to small sample size or presence of multicollinearity in the data, the loadings were also considered to provide substantive meaning of each variable for the canonical variate (Akbas and Takma, 2005).

To evaluate the important accounts of the significant canonical function, canonical loadings were used in this study. Canonical loadings greater than ±0.30 were considered important (Hair et al., 1998).

The variable-variate correlations (canonical loadings and canonical cross loadings) of the first canonical variate are presented in Table 6 and Table 7.

TABLE 6: VARIABLE - VARIATE CORRELATIONS (CANONICAL LOADINGS)

		Y variable set								
Y1	c1	c2	c3	c4	c5	c6	c7	c8	c9	
	-0,56002	0,780714	-0,6369	0,764696	0,75918	-0,64529	-0,62885	-0,6314	-0,57002	
		X variable set								
X1	c10	c11	c12	c13	c14					
	0,697345	0,926215	0,970824	0,922554	0,978197					

TABLE 7: VARIABLE - VARIATE CORRELATIONS (CANONICAL CROSS LOADINGS)

		Y variable set								
X1	c1	c2	c3	c4	c5	c6	c7	c8	c9	
	-0,46831	0,652865	-0,5326	0,63947	0,634857	-0,53962	-0,52587	-0,528	-0,47667	
		X variable set								
Y1	c10	c11	c12	c13	c14					
	0,583148	0,774539	0,811843	0,771478	0,818008					

Canonical cross loadings of variables with variate are almost the same as canonical loadings.

4. DISCUSSION

The results of the analyses provided evidence that there is significant positive relationship between expenditure on health and health status. This conforms to findings of other studies that health expenditure is an important factor of health status (Anyanwu and Erhijakpor, 2007; Akinkugbe and Afeikhena, 2006; Berger and Messer, 2002; Baldacci et al., 2002; Bokhari et al., 2006, Issa and Ouattara, 2005, Baldacci et al., 2004).

Or (2001) investigated the factor of differences in mortality rates across 21 OECD countries between 1970 and 1995 and found a weak statistically significant relationship between per capita expenditure on health and health outcomes.

Anyanwu and Erhijakpor (2007) examined the relationship between health expenditures and two health outcomes: under-five mortality and infant mortality using data from 47 African countries between 1999 and 2004. They found that 10% increase per capita total health expenditure results in 21% decrease in under-five mortality and 22% decrease in infant mortality (Anyanwu and Erhijakpor, 2007). The results show that health expenditures have a statistically significant effect on under-five mortality and infant mortality rate.

Akinkugbe and Afeikhena (2006) also suggest that health care expenditure as a ratio of GDP positively and significantly effects life expectancy, under-five mortality and infant mortality is in SSA, Middle East and North Africa.

Some studies proved that health expenditures have very strong effect on life expectancy at birth (Lichtenberg, 2002; Tüylüoğlu ve Tekin, 2009).

Wang (2002) studied the agents of health outcomes in low-income countries and found that at the national level public health expenditure significantly decreases child mortality.

Novignon et al. (2012) used panel data covering 44 countries in sub-Saharan Africa in a regression models study. They found that health expenditures have a statistically significant effect on health status by increasing life expectancy at birth, reducing death and infant mortality rates.

Day and Tousignant (2005) examined the relationship between health outcomes and health expenditure in Canada for the periods 1926-1999, 1950-1997 and 1960-1997. They concluded that relationships between the health status real per capita health expenditures were statistically significant and not very strong.

Tüylüoğlu and Tekin (2009) concluded that health expenditure reduces infant mortality rates. Gupta, Tiangson and Verhoeven (1999) also found the same results by using data from 50 developing and transition countries observed in 1994.

Nixon and Ulmann (2006) examined relationship between health care inputs and health outcomes using data for 15 EU countries over the period 1980-1995. They also concluded that health expenditure has a significant effect on infant mortality.

Issa and Ouattara (2005) also proved a strong negative relation between health expenditure and infant mortality rates in their study by using a panel data on 160 countries.

The effect of health expenditure on life expectancy and infant mortality is more than income (Tüylüoğlu and Tekin, 2009).

On the contrary, some studies have suggested that the link between expenditure on health and health status is either small or statistically insignificant (Musgrove, 1996; Filmer D, Pritchett, 1997; Kim and Moody, 1992; Thornton, 2002; Filmer et al., 1998). Burnside and Dollar (1998) has also found no significant relationship between health expenditure and infant mortality in low-income countries.

Also in a cross-sectional data covering 117 countries for the year 1993, Zakir and Wunnava (1999) found that government expenditure on health as a percentage of GNP has not main effect on infant mortality rates. Similarly, a World Bank report (2004), by using a panel of data for the Indian states during 1980-99, found no effect of health expenditure on mortality rates.

Riman and Akpan (2004) analyzed annual statistical reports of Central Bank of Nigeria in the period from 1980 to 2004 and they did not find a significant long run relationship between expenditure on health and life expectancy.

5. CONCLUSIONS

Indicator of health status in a country is not only from the expenditures on health but also education, poverty, adequate nutrition and improvements in other important factors that are closely related to health status indicators should be also considered. But it is still important to know that there is a positive relation between health indicators and health expenditures. For basic improvement in health indicator, sources must be separated as the same amount as increasing investment in health-care.

REFERENCES

1. Akbas, Y., Takma, C., 2005, Canonical correlation analysis for studying the relationship between egg production traits and body weight, egg weight and age at sexual maturity in layers. Czech J. Anim. Sci. (4), 163-168.
2. Akinkugbe, O., Afeikhena, J. (2006), In: Applied Macroeconomics and Economic Development, Edited by Adenikinju A, Olaniyon O, Ibadan: Ibadan University Press; 2006. Public Health Care Spending as a Determinant of Health Status: A Panel Data Analysis for SSA and MENA.
3. Anderson, T.W. (1984) An introduction to multivariate statistical analysis, 2nd ed. Wiley, New York.
4. Anyanwu, C.J., Erhijakpor, E.O.A. (2007), "Health Expenditures and Health Outcomes in Africa," African Development Bank Economic Research Working Paper No 91.
5. Baldacci, E., Clements, B., Gupta, S., and Cui, Q. (2004), "Social Spending, Human Capital, and Growth in Developing Countries: Implications for Achieving the MDGs," IMF Working Paper, no. wp/04/217, Washington DC.
6. Baldacci, E., Guin-Siu, M.T. and de Mello, L. (2002), "More on the Effectiveness of Public Spending on Health Care and Education: A Covariance Structure Model," Journal of International Development, 15: 709-725.
7. Berger, M.C, Messer, J. (2002), "Public Financing of Health Expenditures, Insurance and Health Outcomes," Applied Economics, 34: 2105-2113.
8. Bokhari, F.A.S., Gai, Y. and Gottret, P. (2006), "Government Health Expenditures And Health Outcomes," Health Economics, 16: 257-273.
9. Borga, M. (1998) Learning multidimensional signal processing. Linköping University, Sweden, SE-581 83. Linköping, Sweden.

10. Burnside, C., Dollar, D. (1998), "Aid, the Incentive Regime and Poverty Reduction," Washington DC: The World Bank.
11. Day, K., Tousignant, J. (2005), "Health Spending, Health Outcomes, and Per Capita Income in Canada: A Dynamic Analysis," Working Paper 2005-07 (Department of Finance, Canada), June 2005.
12. Filmer, D., Jeffrey, H., and Pritchett, L., (1998), "Health Policy in Poor Countries: Weak Links in the Chain," World Bank Policy Research Working Paper No. 1874.
13. Filmer, D., Pritchett, L. (1997), "Child Mortality and Public Spending on Health: How Much Does Money Matter," World Bank Policy Research Working Paper No 1864. Washington DC: World Bank.
14. Gupta, S., Tiongson, E., and Verhoeven, M. (1999), "Does Higher Government Spending Buy Better Results in Education and Health Care?" IMF Working Papers.
15. Hair, J.F., Anderson, R.E., Tatham, R.L., Black, W.C., 1998, "Multivariate Data Analysis, 5th ed." Prentice-Hall, Upper Saddle River, New Jersey.
16. Issa, H., Ouattara, B. (2005), "The Effect of Private and Public Health Expenditure on Infant Mortality Rates: Does the Level of Development Matters?" Department of Economics, University of Wales, UK.
17. Johnson, R.A., Wichern, D.W. (2002) Applied multivariate analysis. Prentice Hall, Upper Saddle River, NJ.
18. Johnson, R.M., Downer, R.G., Bradow, J.M., Bauer, P.J., Sadler, E.J. (2002) Variability in cotton fiber yield quality, and soil properties in a southeastern coastal plain. *Agronomy Journal* 94(6): 1305–1316.
19. Khattree, R., Naik, D.N. (2000) Multivariate data reduction and discrimination with SAS Software. SAS Institute, Cary, NC.
20. Kim, K., Moody, P.M. (1992), "More Resources, Better Health? A Cross-national Perspective," *Soc Sci Med.* 34:837–842.
21. Lichtenberg, Frank R. (2002), "Sources of U.S. Longevity Increase, 1960-1997," NBER Research Working Paper, No. 8755.
22. Martin, N.F., Bolero, G., Bullock, D.G. (2005) Associations between field characteristics and soybean plant performance using canonical correlation analysis. *Plant and Soil* 273(1/2): 39–55.
23. Musgrove, P. (1996), "Public and Private Roles in Health," Technical Report 339. Washington DC: World Bank.
24. Nixon, J., Ulmann, P. (2006), "The Relationship between Health Care Expenditure and Health Outcomes," *European Journal of Health Economics*, 7: 7-18.
25. Novignon, J., Olakojo, S.A., Nonvignon, J. (2012), "The Effects of Public and Private Health Care Expenditure on Health Status in sub-Saharan Africa: New Evidence from Panel Data Analysis," *Health Econ Rev.* 2(1): 22.
26. Or, Z. (2001), "Exploring the Effects of Health Care on Mortality Across OECD Countries," OECD Labour Market and Social Policy Occasional Papers 46, OECD Directorate for Employment, Labour and Social Affairs.
27. Ridderstolpe, L., Gill, H., Borga, M., Rutberg, H., Ahlfeldt, H. (2005) Canonical correlation analysis of risk factors and clinical outcomes in cardiac surgery. *Journal of Medical Systems* 29(4): 357–377.
28. Riman, H.B., Akpan, E.S. (2010), "Causality between Poverty, Health Expenditure and Health Status: Evidence from Nigeria using VECM," *European Journal of Economics, Finance and Administrative Sciences*, Issue 27, pp.120.
29. Thornton, J. (2002), "Estimating a Health Production Function for the US: Some New Evidence," *Applied Economics*, 34(1), 59-62.
30. Tüylüoğlu, Ş., Tekin, M. (2009), "The Effects of Income and Health Expenditures on Life Expectancy at Birth and Infant Mortality," *Çukurova Üniversitesi İİBF Dergisi*, 13(1): 1-31.
31. Wang, L. (2002), "Health Outcomes in Poor Countries and Policy Options: Empirical Findings from Demographic and Health Surveys," World Bank Policy Research Working Paper No. 2831.
32. World Bank, 2004, "Attaining the Millennium Development Unit, South Asia Region," World Bank: Washington D.C.
33. Wu, J., Norwell, W.A., Hopkins D.G., Welch, R.M. (2002) Spatial variability of grain cadmium and soil characteristics in a durum wheat field. *Soil Science Society of America Journal* 66: 268–275.
34. Zakir, M., Wunnava, P.V. (1999), "Factors Affecting Infant Mortality Rates: Evidence from Cross-sectional Data," *Applied Economics Letters*, 6: 271-273.

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Commerce, Economics 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 info@ijrcm.org.in 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.

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

