

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 2022 Cities in 153 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.	THE EXTENT OF THE IMPORTANCE OF PERSONALITY INDICATORS OF INDEPENDENT ENTREPRENEUR THROUGH USING GROUP ANALYTICAL HIERARCHY PROCESS <i>MOJGAN RIAZI, DR. YOUNOS VAKIL ALROAIA & DR. ALI AKBAR AMIN BIDOKHTI</i>	1
2.	ASSOCIATION OF TRAINING PRACTICES WITH JOB SATISFACTION IN PUBLIC SECTOR ORGANIZATIONS <i>RIZWAN BASHIR & FARZANA BASHIR</i>	8
3.	STUDYING THE RELATIONSHIP BETWEEN SOCIAL CAPITAL AND TALENT MANAGEMENT IN IRAN STATE MANAGEMENT TRAINING CENTER (SMTC) <i>SAYED ALI AKBAR AHMADI, MOHAMMAD ALI SARLAK, MUSA MAHDAVI, MOHAMMAD REZA DARAEI & SAMIRA GHANIABADI</i>	14
4.	CONTEMPLATIVE SCRUTINY OF THE ADEQUACY OF HERZBERG'S MOTIVATION-HYGIENE THEORY: A VERDICT OF JOB SATISFACTION IN THE MID LEVEL MANAGER IN TELECOMMUNICATION INDUSTRY <i>ABU ZAFAR AHMED MUKUL, SHAH JOHIR RAYHAN & MD. SHAKIB HOSSAIN</i>	21
5.	PLANNING AND MANAGING A SCHEDULED SERVICE <i>DR. IGNATIUS A. NWOKORO</i>	29
6.	REAL INCOME, INFLATION, AND INDUSTRIAL PRODUCTIVITY IN NIGERIA (1970-2005) <i>Dr. OWOLABI A. USMAN & ADEGBITE TAJUDEEN ADEJARE</i>	34
7.	DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES IN NIGERIA: A PARADIGM SHIFT <i>ADEYEMI, A. ADEKUNLE</i>	40
8.	THE EVALUATION OF KNOWLEDGE MANAGEMENT'S EFFECTIVENESS ON E-LEARNING: A CASE STUDY ON PAYAME NOOR UNIVERSITY OF IRAN <i>BAHAREH SHAHRIARI & KIARASH JAHANPOUR</i>	45
9.	THE RELATIONSHIP BETWEEN ORGANIZATIONAL CULTURE AND JOB SATISFACTION AMONG PROFESSIONAL STAFF IN VIETNAMESE CONSTRUCTION COMPANIES <i>NGUYEN PHI TAN</i>	49
10.	ANALYSIS OF LIQUIDITY OF SELECTED PRIVATE SECTOR INDIAN BANKS <i>SULTAN SINGH, SAHILA CHOUDHRY & MOHINA</i>	54
11.	PRODUCTIVITY MEASUREMENT OF PUBLIC SECTORS BANKS IN INDIA <i>DR. BHAVET, PRIYA JINDAL & DR. SAMBHAV GARG</i>	57
12.	IMBIBE ETHICAL EDUCATION <i>DR. T. SREE LATHA & SAVANAM CHANDRA SEKHAR</i>	63
13.	MODELING INDIAN MONSOON (RAINFALL) VOLATILITY AS AN INDEX BASED RISK TRANSFER PRODUCT <i>D P. SHIVKUMAR, M PRABHU & DR. G. KOTRESHWAR</i>	66
14.	THE DEVELOPMENT OF SMALL SCALE INDUSTRIES IN MEGHALAYA <i>MUSHTAQ MOHMAD SOFI & DR. HARSH VARDHAN JHAMB</i>	72
15.	REGRESSION MODELS <i>M.VENKATARAMANAIAH & M.SUDARSANA RAO</i>	83
16.	EFFECTIVENESS OF EMPLOYEE RETENTION TECHNIQUES ADOPTED BY BPO COMPANIES WITH REFERENCE TO CHENNAI <i>DR. RANJITHAM.D</i>	86
17.	ROLE OF FOREIGN DIRECT INVESTMENT IN EDUCATION INSTITUTIONS IN INDIA <i>SHABANA, SONIKA CHOUDHARY & DR. M. L. GUPTA</i>	91
18.	AN EXAMINATION OF LONG-RUN AND SHORT-RUN RELATIONSHIP BETWEEN CRUDE OIL PRICE, GOLD PRICE, EXCHANGE RATE AND INDIAN STOCK MARKET <i>R.KANAKARAJAMMAL, S.PAULRAJ & M.V.ARULALAN</i>	94
19.	MYSTERY SHOPPING- THE MIRACLE TOOL IN BUSINESS RESEARCH <i>SHAKEEL-UL-REHMAN & A.VELSAMY</i>	101
20.	THE EMPIRICAL INVESTIGATION BETWEEN EMOTIONAL COMPETENCE AND WORK PERFORMANCE OF INDIAN SALES PEOPLE <i>DR. RITIKA SHARMA</i>	104
21.	MARKETING OF BRANDED PRODUCT IN RURAL AREA: A CONCEPTUAL BASED STUDY ON RURAL MARKET <i>PANKAJ ARORA & AJITHA PRASHANT</i>	111
22.	A STUDY ON EMPLOYEES JOB SATISFACTION WITH SPECIAL REFERENCE TO COACH FACTORY <i>P.MANONMANI & V.UMA</i>	120
23.	E-CRM APPLICATION IN INSURANCE SECTOR AND RETENTION OF CUSTOMERS <i>DASH BISWAMOHAN. & MISHRA RADHAKRISHNA</i>	123
24.	THE USAGE OF SIX SIGMA TOOLS IN BRINGING DOWN THE DEFECTS IN THE HR PROCESSES <i>SREEJA K & MINTU THANKACHAN</i>	128
25.	WOMEN EMERGING GLOBALLY AS THE POTENTIAL MARKET: REASONS, IMPLICATIONS AND ISSUES <i>DR. JAYA PALIWAL</i>	136
26.	URBAN RESIDENTIAL WATER SUPPLY IN GADAG TOWN IN KARNATAKA STATE <i>DR. H H BHARADI</i>	140
27.	TECHNICAL ANALYSIS: A TOOL TO MEASURE MARKET VOLATILITY <i>G.B.SABARI RAJAN</i>	144
28.	CO-BRANDED CREDIT CARD - A TAILOR-MADE PRODUCT NICHE FOR CONSUMERS <i>DR. A. JESU KULANDAIRAJ</i>	150
29.	A COMPARATIVE STUDY ON CUSTOMER SATISFACTION WITH SERVICE QUALITY IN PUBLIC AND PRIVATE SECTOR BANKS <i>DR. SAMBHAV GARG, PRIYA JINDAL & DR. BHAVET</i>	153
30.	EMOTIONAL INTELLIGENCE (EI): AN IMPERATIVE SKILL FOR MANAGERS IN THE GLOBAL WORKPLACE <i>SMARTY MUKUNDAN</i>	157
	REQUEST FOR FEEDBACK	160

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.

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>

URBAN RESIDENTIAL WATER SUPPLY IN GADAG TOWN IN KARNATAKA STATE**DR. H H BHARADI****ASST. PROFESSOR****DEPARTMENT OF STUDIES IN ECONOMICS****RANI CHANNAMMA UNIVERSITY****BELAGAVI****ABSTRACT**

Most of the urban area availability of drinking water is becoming more scarce and more uncertain, this uncertain access to drinking water leads to urban conflicts. Mountain urbanization and rising population in urban area in recent years, coupled with inefficient management, has led to the widening gap between the demand and supply of water. Large numbers of households in cities around the developing world do not have access to safe and reliable supply of drinking water. In over 65 years of political independence and economic development, India has not been able to ensure the most basic of human needs particularly safe drinking water for all its citizens. Rural areas contain the largest number of people without access to safe water but in common with many developing countries, the fastest growing un-served populations live in urban and semi-urban areas. The water supply in most Indian cities is only available for a few hours per day, pressure is irregular, and the water is of questionable quality. Intermittent water supply, insufficient pressure and unpredictable service impose both financial and health costs on Indian households. Therefore the present work is an attempt to study the urban residential water supply and its management in Gadag city in Karnataka.

KEYWORDS

urban residential water, Gadag, water treatment plants.

INTRODUCTION

Drinking water is a basic requirement for life and a determinant of standard of living, supply and demand side factors of both surface and groundwater determine the level of drinking water available to people. Water is abundant globally but scarce locally, the main water consumers are agricultural industry and households. There is a greater demand for water in developing countries, where population, industry and growth will be greatest. Out of 100 percent, 97.5 percent is salt water contained mainly in the oceans and only 2.5 percent is the fresh water. As of now, 75 percent of drinking water is used for non-drinking purposes.

It is proposed to supply potable water and non-drinking water separately to ease the pressure on drinking water supply. Besides, water for non-drinking needs could be met by recycling domestic waste water. In developed and developing countries excess irrigation and industrial development results in excess consumption of water. To fulfill various requirements the man is blindly exploiting the natural resources of water without thinking of future. The principle collectors of water in Indian household are women usually between the ages of 15 to 35 years. This could be for the purpose of drinking, cooking, washing, bathing and for cattle. The importance of women in domestic water resource management emphasized the active involvement of women in decision making process, it could be predicated with complete certainty that the world in the year 2025 will be largely different from what it is today. In one way fresh water will be just the same in the future as in the past and this is a precisely the problem. Climate change may well cause changes in the hydrological regime, which could result in increasing stress on water resources. In earlier times water was used by human beings for drinking, bathing, cooking etc., but with advancement of civilization the utility of water enormously increased. There is an uneven distribution of water resource, the sources of water available to the human beings is less than a per cent present in lakes, streams, ground and in other sources. Water used for domestic purposes should be collected, cleaned and recycled for non-drinking, domestic and industrial purposes. Nearly holy places and temple, towns, the water that is used for bathing and washing in tanks and ponds should be channelized towards agricultural fields in adjacent areas. In Israel water is used 4 to 6 times before it is let off to nature while it is only once in India. The quality of water is as important as provision of adequate water supply. In India drinking water gets contaminated for a host of reasons such as rapid growth of population, industrialization, urbanization and excessive use of chemicals. The need for action in this direction is growing day by day as countries and communities across the globe are increasingly experiencing water stress in various contexts. Gadag city has been facing a severe water shortage with people unable to get drinking water even once in 15 days and during March to July once in 20 days. Different areas demanding the supply of proper drinking water from the bhadra reservoir and the Gadag residents are having a harrowing time as water is supplied once in 15 to 20 days. In view of this the study on residential water supply and its management in Gadag city of Karnataka state is undertaken with the following specific objectives

OBJECTIVES

1. To study the basic information of households in Gadag.
2. To study the different sources of water supply for domestic activities in Gadag..
3. To know the use of the water for different household activities
4. To study the knowledge level of residential water management in Gadag
5. To suggest suitable suggestions and recommendations for water management.

METHODOLOGY

The present work entitled "urban residential water supply in Gadag town in Karnataka state" was carried out during May 2012. The survey method was used to collect various information using structured interview schedule. The 100 random samples have been taken, 25 households from each 4 sub area in Gadag, The data collected for the study were processed and analyzed by using suitable statistical technique.

BACKGROUND OF THE GADAG DISTRICT

Gadag district is newly created on 1-11-1997, bifurcating Gadag, Mundargi, Nargund, Ron, Shirhatti taluks from the old Dharwad district. Gadag district is located in northern parts of Karnataka and situated in between north latitudes of 15° 15' and 15°45' and east longitudes of 75°20' and 75°47'. It is bounded by Koppal district on east, by Baglkot district on north, by Haveri district on south and by Dharwad district on west. For administrative convenience, the district is divided into 5 taluks with total of 337 villages. It contains 3 town municipalities, 5 town Panchayaths and 11 hob lies. The district is a part of Krishna basin, divided in to two sub basins namely Malaprabha, and Tungabhadra. These have an area of 2768 km² and 1889.2 km² respectively. The district falls in the semi arid tracts of Karnataka. The annual rainfall is generally less than 750mm. It lies to the east of the Western Ghats in the rain shadow region. Hence receives low rainfall and generally drought prone and it is a part of Krishna major basin the district drained by two main rivers namely Malaprabha and Tungabhadra.. The Malaprabha and Tungabhadra sub basins have the area of 2768 sq km and 1889.2 sq km respectively. Malaprabha river sub basin is sloping towards north- east direction. And Tungabhadra river sub basin slopes towards southeast to east –north-east direction. Master slope is 1.25m/km where as Malaprabha River has 0.5m/km slope. Both rivers show a seasonal regime varying from lean sluggish flow during summer to torrential muddy flow during the monsoon. The north-east monsoon contributes nearly 24.8 per cent and prevails from October to early December. And about 54.7 per cent precipitation takes place during south –west

monsoon period from June to September. And remaining 20.5 per cent takes place during rest of the year. In the district from December to February month is winter season, During April to May temperature reaches up to 42°C and December and January temperature will go down up to 16°C. The standard deviation of rainfall in the district varies from 1.3 to 263.5mm from west to east. The average standard deviation for the district is about 146 mm. South West monsoon is dominant followed by northeast monsoon.

RESULTS AND DISCUSSION

BASIC INFORMATION OF THE HOUSEHOLDS

Most of the household (70 per cent) service belongs to up to 25 years age group in Gadag city followed by more than 35 years (20 percent) and only 10 percent of them were in the range of 26-35 years. Regarding education level of the housewives, majority of them had education up to SSLC (50 per cent), PUC (40 per cent) and 10 per cent of the household had completed their graduation. However, no illiterate households were found in Gadag city. Majority of the women were housewives (55 percent) followed by working in private sector (20 percent), government servant (20 percent) and agriculture laborers 05 per cent in Gadag.

TABLE 1: BACKGROUND INFORMATION OF THE RESPONDENTS

Sl No	Particulars	Gadag city (n=100)
1	Age of the Respondents	
	Up to 25	70 [70.00]
	26-35	10 [10.00]
	More than 35	20 [20.00]
2	Education of the Housewives	
	Illiterate	----
	Up to SSLC	50 [50.00]
	PUC	40 [40.00]
	Graduate	10 [10.00]
3	Occupation of the Housewives	
	Government servant	20 [20.00]
	Private	20 [20.00]
	Agricultural Labour	05 [0.05]
	House wives	55 [55.00]
4	Family size	
	2-4 members	40 [40.00]
	5-6 members	60 [60.00]
	More than 6 members	---
5	Type of family	
	Nuclear	90 [90.00]
	Joint	10 [10.00]
6	Monthly income of the family	Rs 27000

Source: Primary data

Note: Figures in the parentheses indicates actual percentage

Majority of the families had 5 to 6 members (60 percent) and 2 to 4 members (40 percent) in Gadag city. Further, most of the household (90 percent) belonged to nuclear family followed by joint family (10 per cent). It is also found that monthly income of the family was Rs 27000/- per month from all the sources, the details are given in table 1.

SOURCES OF URBAN WATER SUPPLY IN GADAG

Drinking water is the basic needs of the people to be addressed on top priority. Access to water in required quality and quantity is the most essential part of the government, otherwise, water shortage for drinking and sanitation is an endemic. The study data reveals that 50 percent of the households had the municipal water supply, 20 per cent each from bore well and mineral water purifying plants respectively in Gadag and followed by well (10 per cent). Recently, around 20 per cent of the households using mineral water for drinking purposes from water purifying plants due to the awareness of the purity of drinking water and had the knowledge of the importance of water, it is due to traditional beliefs that few households get water from the well for their pooja and drinking purposes. So, it is found that municipal government still provides sufficient water to the residents. The details are given in table 2.

TABLE 2: DETAILS OF URBAN RESIDENTIAL WATER SUPPLY IN GADAG

Sl. No	Sources of Water	Gadag city (n=100)
1	Municipal Water	50 [50.00]
2	Bore Well Water	20 [20.00]
3	Well	10 [10.00]
4	Mineral Water (purification water plants)	20 [20.00]

Source: Primary data

Note: Figures in the parentheses indicates percentage

Former Leader of Opposition in the Legislative Council H.K. Patil handing over a can of 20 liters of clean drinking water to the residents of Gadag. Hence around 20 per cent of the residents bringing water from water purifying unit in Gadag, this helps to ease the pressure of drinking water in Gadag.

USE OF THE WATER FOR DIFFERENT HOUSEHOLD ACTIVITIES

Municipal government in Gadag city has been made an attempt to provide adequate and safe drinking water to all the households but supply and demand side factors determine the level of water availability. The supply side factors like rainfall, surface flows, Groundwater availability and recharge, surface run-off etc., quality of available water, kinds of institutions and establishments, operation and maintenance of water supply schemes in Gadag is not so satisfactory. With the available water different households have been using for different activities.

Municipality water is the most important water, which is supplied from the Tungabhadra River through korlahalli and mundaragi. Study data reveals that 45 per cent of the households used this water for drinking and 25 per cent for cooking purposes. Because, river water cooks early and makes the food tasty and also they take head bath and the hair will not fall and grows. Whereas 10 percent of the municipality water using for washing cloths and dish washing each purposes. Therefore, households in Gadag city using river water cent percent for all activities. The details are given in table 3.

TABLE 3: USE OF THE WATER FOR DIFFERENT HOUSEHOLD ACTIVITIES IN GADAG

Sl.No	Sources of water	Activities					
		Drinking	Cooking	Washing cloth	Dish washing	Salty	Other activities
1	Municipality water [n=100]	45[45.00]	25[25.00]	10[10.00]	10[10.00]	5[05.00]	5[05.00]
2	Bore well water [n=100]	20[20.00]	10[10.00]	20[20.00]	20[20.00]	20[20.00]	10[10.00]
3	Well water [n=100]	25[25.00]	20[20.00]	40[40.00]	05[05.00]	05[05.00]	05[05.00]
4	Mineral water [n=100]	100 [100.00]	--	--	--	--	--
5	Tank water [n=100]	--	--	40[40.00]	20[20.00]	20[20.00]	20[20.00]
6	Lake [n=100]	--	--	10[10.00]	--	--	20[20.00]

Source: Primary data

Note: Figures in the parentheses indicates percentage

Regarding the use of bore water, almost all the activities were carried out by using the bore well water in Gadag. The 20 per cent of the water for dish washing, washing, and drinking each and other domestic activities (05 percent each). Only 10 per cent of the water is used for drinking purpose. Because, irregular supply of municipality water and for all the domestic activities it is due to not possible to bring the water from well and other sources like tanks, lakes regularly. Majority of the households used the well water for cloth washing (40 percent), drinking (25 percent) and cooking (20 percent) while little percentage of the households had used the well water for other domestic activities. The 100 per cent mineral water used by households in Gadag for drinking purpose alone, The K.H. Patil Foundation, the Hulakoti Cooperative Education Society, and the Rural Medical Society have joined hands in this initiative of helping mineral water for residents of the city and also the surrounding places. The 11 small water treatment plants had been set up by the three organizations by mobilizing funds. These plants had the latest technology which was adapted by companies supplying packaged drinking water, these units involves reverse osmosis technology. Each unit has a capacity of producing around 32,000 liters of potable bacteria-free water per day. People are being charged 20 paisa for a liter of clean water, while, it is Rs2 for 10 liters and Rs. 2 for a can of 20 liters. The 40 per cent of the tank water used for washing cloth, for dish- washing (20 percent) and for others domestic activities (20 percent) each. Finally, lake water was used for only washing cloth and other activities.

STORAGE OF WATER BY HOUSEHOLDS IN GADAG

Storing of water is a system by which different households using varieties of instruments to store the water for different purposes. Since there is a water crisis in Gadag city, different households using different types of means of water storage instruments. The study data reveals that majority of the households in Gadag city had upper tank (35 per cent) followed by syntax, underground tank and drums 15 per cent each to store the water from different sources. The 10 per cent of the households had big vessels facilities. Some of the households opined that uppar tank; underground tank and syntax were constructed and fixed at the time of building the house.

TABLE 4: METHODS OF WATER STORAGE BY HOUSEHOLDS IN GADAG CITY

Methods of water storage	Gadag City N=100		
	Yes	No	Total
Upper tank	35	65	100
Syntax	15	85	100
Underground tank	15	85	100
Drums	15	85	100
Big vessels	10	90	100
Cement tank	06	94	100
Tank (stone)	00	100	100
Earthen wares	02	98	100
Plastic tubs	02	98	100
Bucket	02	98	100

Source: Primary data

It is also found that some of the households had still the habit of storing the water in cement tank, plastic tubs, drums and buckets, since they consume more water. Further, just 2 per cent of the households had to use earthenware to store the drinking water particularly in the summer only because during which water remains cold and tasty. The detail is given in table 4.

OPINION OF THE HOUSEHOLDS ABOUT RESIDENTIAL WATER MANAGEMENT

The 65 per cent households of the Gadag city opined that they used water judiciously followed by 30 per cent of them reported that they used water limitedly and only 5 percent households managed unlimitedly. Households get water from municipality once in 15 to 20 days, so it is very difficult for carrying out the water for domestic activities with limited municipality water.

TABLE 5: HOUSEHOLD OPINIONS ABOUT RESIDENTIAL WATER MANAGEMENT

Opinion about water management	Urban (n=100)	
	Number	Per cent
Judiciously	65	65
Limited	30	30
Unlimited	05	05
Total	100	100

Source: Primary data

Therefore, it is concluded that most of the residents reported that they used water judiciously and had the knowledge of water management. Similarly, cent percent of the households in Gadag city opined to know about the water management.

SUGGESTIONS AND RECOMMENDATIONS FOR RESIDENTIAL WATER MANAGEMENT

There is an urgent need for planned action to manage water resources effectively. The problems in Gadag city has still most of the households are living without safe drinking water supply.

- Municipal government in Gadag city is supplying inadequate water to its residents. Hence it is suggested to provide sufficient water to the residents by constructing big tanks to preserve water during rainy season from Tungabhadra and Malaprabha rivers. Further, Rainwater harvesting structures would enhance the availability of drinking water vicinity of Gadag town.
- Former Leader of Opposition in the Legislative Council H.K. Patil handing over a can of 20 liters of clean drinking water to the residents of Gadag . Around 20 per cent of the residents bringing water from water purifying unit in Gadag, existing units are 11 in numbers. Hence, it is suggested to increase still more water purifying units in Gadag, this helps to ease the pressure of drinking water.
- Some of the households living in EWS, LIG in HUDCO colony in Gadag city do not have upper tank facility to store water. Therefore, it is suggested to use the best quality of syntax tank in addition to the underground tank.

- The 65 per cent residents of Gadag city had the knowledge of judicious use of water. Hence, it is suggested to use water judiciously, economically and carefully for different activities.
- Bleaching powder and alum may be distributed to the schools teachers/ANMs/Habitation head/PHE worker etc., for using in their respective water sources for disinfection.
- There must be a rethink of the way that water is used and reused and greater use Of natural systems for treatment
- Urban water supply in Gadag is likely to become more difficult in the future due to several changing pressures like urbanization, climate change and infrastructure deterioration. The challenge is to develop appropriate technical and institutional responses to change the way in which urban water systems are managed.
- Demand management and water reuse opportunities are real and increasing. A Combination of end-use efficiency, system efficiency, storage innovations and reuse strategies would reduce water demand.
- Water can be used multiple times, by cascading it from higher to lower-quality needs and by reclamation treatment for return to the supply side of the infrastructure. In most of the developing countries, effective water demand management and reuse of the supplied water may be a sustainable ways to reduce water stress.

REFERENCES

1. Adhkari S (1998): "Safe water and rural communities", Kurukshetra, July 14-19.
2. Anonmous (1999): Bore well water in Davanageri polluted researchers, Times of India, Daily, December 13th p-5.
3. Arlosoroff, S. (1999): "Water Demand Management." International Symposium on Efficient Water Use in Urban Areas, IECT-WHO, Kobe, Japan.
4. Bangalore Water Supply and Sewerage Board (BWSSB) (2001-02): Annual Performance Report, Bangalore.
5. Government of India (2002): The National Water Policy, Ministry of Water Resources, New Delhi.
6. Government of Karnataka (2000): Rural Water Supply and Sanitation in Karnataka – Strategy Paper 2000-2005, Rural Development and Panchayat Raj Department, Bangalore.
7. Government of Karnataka (2002): Report of the High Power Committee (HPC) for Redressal of Regional Imbalances, Bangalore.
8. Government of Karnataka (2002-03): Annual Report, Rural Development and Panchayat Raj Department, Bangalore.
9. Government of Karnataka (2004): State of Environment Report and Action Plan , Department of Ecology, Environment and Forest, Bangalore.
10. Gupta N L (Ed) (1994): "Urban Water Supply", Rawat Publications Jaipur, India.
11. Mehata M., Asha V. and Veena S. (1992): "Hygienic Practices Adopted for Storage and Use of Drinking Water", Journal of Research, 22: 115-118.
12. Nirmal and Sen Gupta (1996): "A Strategy Option for Safe Drinking Water", Kurukshetra, Vol 45 (11): 51-55.
13. Rathore and Ratna Reddy (Ed) (1996): "Urban Water Management", Rawat Publications

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.

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

