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INTEGRAL REVIEW

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CONTENTS

Editorial

It is quiet understood at the helm of the state of the economy that, a liberal intellectual is expected to speak and write the truth about fear or favor. Besides, other important attributes which are becoming a questioning sense of world around of the governmental Economic Survey 2016-17, Under which one might have serious doubts about the liberalism of the economists and the economic bureaucrats, who are responsible for the production of the state of the economy version and further shows has not even shown wide spectrum with significant tasks to the right directions with right approaches.

Frankly, the presented Economic Survey does not even allow an independent liberal economist to assess the state of the economy from the macro economic data. And in the Preface of the Economic Survey 2016-17, the government's chief economic advisor, Arvind Subramanian, statement was elaborated, 'such data one will have to wait till "later in the year for a robust macroeconomic stability". The 2016-17 decelerations in economic growth, carries merely "temporary" growth. However the real GDP and economic activity has been affected adversely by "demonetization" which is merely a temporary dip, a "0.25 percentage point to 0.5 percentage point reductions in real GDP relative to the base line estimate of about 7%. Whereas referring Goethe's maxims in this regard:"One must from time to time repeat what one believes in, proclaim what one agrees with and what one condemns."But given that mainstream economics the world over has regressed by its reversion to say's Law that supply creates its own demand and serves almost entirely an ideological function, and that we have been critique of such macroeconomics and keep playing over and above.

To Comprehend with the same gamut eco-factor, which has a greater impact on human capital; needs a robust increase investment in the resource constrained fiscal environment of the Indian economy, and reap the benefits in terms of a faster economic growth and a better income distribution. But so far as Cutting off funding to Social science research is concerned, has become a short sighted step by the recent declaration of the Government policy and as against public outcry has taken a pseudo leap over the public universities in general and social sciences education in particular. As a result it has viewed that various social science centers of research and teaching, set up by the UGC under Eleventh Five Year Plan((2007-2012), are struggling with survival. And simultaneously the stance of UGC has also been threatened the futures of many teachers, researchers and students in various emerging disciplines.

Hence, to have the experience of the above apathy of social Research, there is a need to relook the study by the government and create an ambivalence development of the country vis-à-vis economy to restore the ambit task of change. The present issue of our Journal IJMR Vol 9 and No I & II though it's a bit delaying due to some technical provisions, carry the intricacies of various Research in emerging Era of the day.

The First paper is devoted to "The University's Role in the Dissemination of Research and

Scholarship - A Case of Kuwait University. It carries the researcher finds it useful to focus on the university role in development and production of "scientific" and "university" culture through its publications and its cooperation with the means of communication, whether local or global. Since the council of scientific publication as well as Kuwait University public relations and media has an important role of which its features need clarifications. The second paper exemplify, the explanatory power of two major theories of finance, namely Daniel and Titman's (1997) characteristics-based model and Fama and French's (1993) three-factor model shows how will it be beneficial and consistent with the characteristic based pricing. The paper third highlights of 'An Examination of Supply Chain Performance Factors based on the Quality of Relationships 'which result to indicate that the quality of relationship factors does not influence cost while all the three factors have a significant influence on dependability and flexibility.

The Article fourth, focuses on 'Analyzing importance of Project Life Cycles Management in Construction Industry 'which aims is to provide a comprehensive introduction to Project life cycle management which may be viewed as a process through which a project is successfully implemented from beginning to end. In the continuation, the Fifth Article exemplify towards 'juvenile delinquency: a causal framework of factors contributing to it' the article is devoted to understanding causes of juvenile delinquency and helps to find the measures required for the positive development of the child in conflict with law. At the end the Article sixth is made of 'An application of ARIMA and VAR models on Indian call money market' and explains," the dynamics of call money market with other macroeconomic variables such as key interest rates and central bank activities how does pave the way to analyze by using ARIMA and VAR techniques. The major finding of the study shows that call money interest rates are more affected by other interest rates rather than by the level of activity of the central bank.

The soundness of the comments and ideas has contributed immensely to the quality of above all articles ... Last but not at least, we have benefitted greatly from the editorial assistance and time bound support of the managerial team specially Prof Jamal Arif Pro vice Chancellor and chairman (Research & Development) and Dr Syed Nadeem Akhtar (Director Research & Planning) who has help us in bringing out this issue despite a bit late.

Editor in Chief

Dr Aftab Alam

THE UNIVERSITY'S ROLE IN THE DISSEMINATION OF RESEARCH AND SCHOLARSHIP - A CASE OF KUWAIT UNIVERSITY

Yassin Tasha Al Yassin

Abstract

This study deals with the means of the university publication and culture, starting from a particular case: Kuwait University. The researcher finds it useful to focus on the university role in development and production of "scientific" and "university" culture through its publications and its cooperation with the means of communication, whether local or global. Perhaps the council of scientific publication as well as Kuwait University public relations and media has an important role of which its features need clarifications.

The researcher, therefore, divided the study into three features: First feature: Establishing information for Kuwait University (scientific journals and the commission for authoring, Arabization and publishing). The second feature is : (the Scientific Publishing Council), and third feature is : the university Afaaq newspaper, management of public relations at the university ,and the results of the study ranging from the mechanism analysis s of production of scientific and academic culture and the contents of this culture through specific samples.

Through analysis of both media scene at Kuwait University and the selected cultural contents, it becomes clear that Kuwait University plays a basic role in the production and promotion of scientific and academic culture, as the university is at the same time a key site for the production of outstanding scientific and cultural contents ,in addition , the university is an echo and a mirror of the conflicting currents and forces the community witnesses within the process of development and reconstruction at all levels?

Dr. Yassin Tasha Al Yassin, Head of Media Department, Faculty of Arts, Kuwait University

Introduction:

Kuwait University, like other universities in the Gulf Cooperation Council (GCC), plays a key role in the cultural development, but it is somehow obscure. In fact, many people complain of the social sciences and humanities status, especially in the (GCC) states. We are badly in need to change this situation. Some pessimistic writings recently arose to state that social sciences and humanities undergo a multifaceted crisis, including:

1. There is a methodology and theorizing crises. It is said that modern life does not need social sciences and humanities, as it needs applied sciences.
2. The crisis of reality interpretation, where reality now needs sciences concerned with studying the natural phenomena that are characterized by relative stability, unlike the social sciences and humanities, which are characterized by the phenomena that are perpetually changing and extremely complex. They take place in isolation from the hypotheses which guide the scientific aspects.

In fact, Kuwait University has changed some of these concepts through the researches conduct by the Faculty of Arts and the Faculty of Social Sciences which are based on pluralism methodology; and through what was published in scientific journals of Kuwait and universities of the (GCC) states. An observer of the social and humanitarian writings in both faculties finds the following:

1- Writings and researches focused on the study of social phenomena by resorting to the interpretation of these phenomena through the well-known and well established theories of other societies. Al-Obeidi says, for example, in his study (Al-Obeidi, 1989) that studies which are not supported by theories have become few and have no credibility.(1)

2- Studies employed the pluralistic methodology. Social and human studies are usually based on a small number of theories, but they represent important dimensions which depend on the collection of data in the framework of themes raised. The use of these modern methods made studies more scientific and far from showing bias. (2)

1. See Prof. Dr. Amal Yusuf AlAthbi Al Sabah: Issue Editorial, Journal of the Gulf and Arabian Peninsula Studies, January-February-March 2000, issue Ninety-sixth, 28th year, and pp 9-12.
2. Denzin, Epstein, 'Quantitative and Qualitative Methods', in R. Ginnel (ed.) Social Work Research and Evaluation, Itasca 11: Peacock Publishers, 1989, p. 239

With the increasing disputes, moderate writings, which call for equality, have recently begun to appear. These writings showed that both the quantitative approach of the natural sciences and the qualitative approach on which humanities rely on are both required. Many people believe that both approaches complement each other; especially many of the phenomena that the Arab society needs are social and human. Man in reality coexists with the "values" of new and old. These values need to be framed; therefore, some social researchers demanded an application of these cornerstones by research and writings as follows: (3)

1. Cultural studies linking ideologies and formations of social movements should be given more attention. It is important to recognize the impacts of the popular beliefs, values and opinions as symbolic frameworks on the human societies.
2. Behavior should be carefully studied as certain institutions of the form the society information, such as media organizations and educational a religious institutions and movement organizations. Without knowing these behaviors, technological developments and application of natural scientific studies can not be understood.
3. The focus should go to the means of communication because they do not only play an important role in the nature of social and human effects, but they can also frame studies and broadly publish them to occupy the global field required.

This study rose from these concerns. The media and the quality of information that make up the local and regional media may play an important role in disseminating information and connecting what produced by the Cooperative Council with the Arab and Western world.

Basic considerations in the use of media at the University:

Recognizing the basic skills of using media has become necessary for the faculties of humanities, such as the Faculty of Arts. These skills vary according to the specializations offered by these faculties and their intellectual and literary production. Researchers and college administrators should focus on how to treat this information and on how to connect it with various media means. Literary and human knowledge at the college may be divided as follows:

3. Yusuf Ali Ghuloom, Catherine Meyer, Sherry Le Claire, "political participation in Kuwait", Journal of Social Sciences, Vol.25, Issue No, 4, p.

1 - The production of technical skills which is the highest level in the society commitment to linguistic methods and how to talk and discuss, and how to use general life theories. The Faculty of Arts produces many linguistic, grammar and philology books, whether they are in Arabic, English or other languages offered by the faculty.

2 - Raising level of skills, which are intended to upgrade the skills of state officials. It is possible to identify information, books and researches which are interested in intellectual and cognitive development, related, in particular, to advanced technology and how to use it.

3 - Production of free culture. The Faculty of Arts is concerned with the community culture as it produces knowledge that may play a major role in the community culture. It also produces books and researches in areas like poetry, stories, criticism schools and its methods at the Arab level and other languages, in addition to the latest intellectual and cognitive productions in this field.

4 - Books and specialized Knowledge applications which mean cognitive production of the faculty of Media Department, Public Relations, TV and radio, journal ,literary, and philosophical writing forms.

It is obvious that the first and foremost role of all colleges-whether they're literary or, scientific is to embellish talents and to form mind and indulge in the intellectual approaches in various areas of creativity and innovation. This, of course, is in the heart of culture and social development of men and women of tomorrow.

Understanding the role of the university is based on two important roles which are complementary on the basis of an integrated view, namely:

- Teaching

- Scientific Research

Though the role of teaching is prominent, all universities have a role in the development of scientific research through their publications which need further recognition and dissemination.

In order to achieve accuracy and rely on reality , the researcher selected Kuwait University as a study case, in addition to the cultural development through the media; having in mind that this university is a brick in the Gulf universities.

Importance and objectives of the study:

To develop a society means to create a balance between its culture and modern technologies; therefore, it becomes important to comprehend the civilization development features, and scientific and cultural progress elements. This process requires efforts and organization on scientific basis. (4)

So the researcher believes that it is useful to focus, in this study, on the role of universities in development and culture, through the university publications and cooperation with the means of communication, whether local or global. Perhaps the Council of Scientific Publication of Kuwait University, along with the university magazine and the administration of public relations and media play an important role that needs to be clarified.

The issue at hand consists of two parts. On one hand ,it aims to introduce and analyze the media scene at Kuwait University , on the other hand it aims to explain the features of the scientific and academic culture produced , broadcast and distributed by these media , such as (magazines, books , publications and specialized radio and television programs) within the university and outside. This makes us ask the following questions:

1) How are the features of the media scene completed through the evolution of Kuwait University? Starting from the ten magazines to the establishment of this dangerous organization, which is the Board of Scientific Publications, through the establishment of authoring, Arabization and publishing committee?

2) What is the role of scientific publishing council as the principal organization in terms of activation, evaluation, following-up and distribution of the scientific and academic culture through the council publications?

3) This leads us to wonder about the internal dynamics of the council?

   - What about the researches sources, arbitration, dissemination, distribution etc..?
   - What about holding seminars?
   - What about sales and subscriptions?
   - What about advertising and media affairs?
   - What about participation in discussion symposiums?

4) How do media pillars integrate with Afaq newspaper, the administration of Public Relations at Kuwait University, and radio and television programs which it broadcasts, in addition to the Publication Council efficacy?

4. Ahmed Bustan , Views and Educational Trends in the field of literacy in Kuwait, Journal of Social Sciences, Issue 3, Volume 12, Fall 1984, p. 66.

5) What are the limits of the media with regard to the scientific and academic culture?

6) What is the relationship between Kuwait University publication contents and cultural development?

7) To what extent is circulated university cultural issues appropriate? Do these issues need to be highlighted so as to start the process of cultural and academic development?

Study Methodology and Instruments:

The study adopted two approaches: one of which is documentary and descriptive, and the other is analytical which reviews the process of scientific and academic culture and cultural instruments used within the university. The academic year 2012/2013 was chosen as the starting point and a pillar for all data, achievements and statistics. Tables and graphs which embodied evolution and emergency changes in the specified period were also prepared.

As for the analysis of the cultural contents sample , the focus was on the ten journals published by the Scientific Council for publication, in addition to samples of publications of the Committee of authoring , publishing and Arabization as they are closely related to the scientific and academic culture of the wider public dimension. The study was divided into three main features:

1- Founding Media and the emergence of scientific journals and the Committee for authoring, Arabization and publishing.

2 - The Academic Publication Council and its mechanisms in the production of scientific and academic culture.

3 - Other media means (university Afaaq newspaper and programs of managing Public Relations at Kuwait University).

4 - Activation of media role towards the scientific and academic culture.

5 - Content analysis based on the selected samples.

First Feature: Founding University Media

The establishment of Kuwait University in 1966 coincided with a comprehensive prosperity, following the blessing of oil abundance, and the democratic climate in which its origin dated back to ancient roots .The first Kuwaiti Journal to appear was the Kuwait magazine for Sheikh Abdul Aziz in (1928 until 1930). Then AL- Bietha Magazine appeared in (1946 until 1952). Both of them were printed out of Kuwait. Printing press appeared before the press. Then the state of Kuwaiti imported the Printing press and issued press legislations to slightly control press. In December 1958, "The Arab Magazine" was published and became a cultural edifice, and a hallmark of the State of Kuwait culture. It only stopped for 10 months during the Iraqi invasion, and later resumed publication without interruption. The issue number now is (504). Last year it celebrated four decades of its inception. (5)

The decisive turning point in the history of the State of Kuwait was in 1961; which was the year of independence, constitution and the emergence of the daily press (starting with "Al -Rai Al Am" or The Public Opinion) with its multiple titles and trends, as well as the emergence of the (black and white)television .

In this positive climate Kuwait University efforts focus on adding bricks to the cultural and scientific edifice of media. in three decades and more from (1966 to 2000), ten university magazines appeared, along with two organizations, namely: the committee of authoring, Arabization and publishing, that will come under the publication of the Scientific Council umbrella, which was founded in 1986.The Committee and the ten magazines were keen to spread the cultural and scientific output of Kuwait University preserving two principles: non-stop on one hand and quality level on the second hand.

Let's quickly review the contribution of these bright lighthouses in the space of scientific and cultural research, in addition to the university, "Afaq" which is mainly university students newspaper; and the daily interaction of the Department of Public Relations with the local and international media by sending and receiving information, whether it is through the written press, or radio, television, cinema or even preparing films on the university achievements. Perhaps the scientific and cultural lead achieved by Kuwait University is its rapid transition to a scientifically, administratively and student computerized University.

The transition facilitated its engagement in the internet web since the very beginning.We should not also forget the media teaching staff contributions, in addition to the scientific publication in the press as well as on the radio and television.

A - scientific magazines:

1 - Kuwait Journal of Science and Engineering: -

It was founded in 1973, and it is concerned with publishing scientific research in the fields of civil, electrical , computer, mechanical and chemical engineering , besides mathematical and computer sciences, statistics, physics, chemistry , biology and microbiology and geology.

5. A Meeting of siblings: four decades of Arab magazine and the Kuwaiti cultural project (10-12 April 1999

The magazine is published in a volume of two parts, the first one in June and the other in December.

So far, 27 volumes have been published in fifty-four issues. The magazine is published in English with abstracts in Arabic.

2 - Journal of Social Sciences:

it was founded in 1973 and issued first by the Faculty of Commerce and Economics and Political Science. Then Kuwait University started to issue it in 1979. This magazine is concerned with publishing researches in politics, economics, sociology, psychology, and social anthropology, political and demographic geography. The magazine has a site on the Internet and it is registered in the directory of periodicals ULRICH'S.It is published three times a year; so far, it has issued volume no. 27, issue No. 3.

3 - Journal of the Gulf and Arabian Peninsula Studies: -

it was founded in 1975 and it is concerned with the research and scientific studies related to in the Gulf and the Arabian Peninsula in various political, social, economic, legal and cultural fields. The journal takes into account striking a balance between historical studies and those related to the prospects of the future. This journal is issued four times a year, and it is twenty-five years old and published 99 issues.

4 - Journal of Law:

It was founded in 1977 under the name of Journal of Law and Sharia. It carried this current name since 1982 after the establishment of the Faculty of Sharia and Islamic Studies. This magazine is concerned with the studies and research related to legal thought, legislation and judicial decisions. It is published four times a year and is now twenty-four years old. It published 78 issues.

5 - Periodicals of Arts:

It was founded in 1980 and was carrying periodical name of the Faculty of Arts. When this college was divided into two , and the Faculty of Social Sciences was created, it was given this comprehensive name beginning from last year. It included a range of theses, and it is concerned with publishing topics related to literature, languages and social sciences.

Each year 8 theses are published spread over months of the year.Now, periodical number 20 was issued for the year 2000-thesis 148 -1999-2000.

6 - The Arab Journal for Humanities: -

It was founded in 1981; it is concerned with the following areas in Arabic and English: Arab and comparative Arts, philosophy, history, geography, media, theoretical and applied linguistics, arts, music, heritage, theater and Archeology. It is issued four times a year. In the summer of 2000, number seventy one issue appeared. The Magazine is indexed in the International Journal directory, and it is listed on the website.

7 - Journal of Sharia and Islamic Studies: -

it was founded in 1983, and deals with references of Shari, the fundamentals of Islam and Contemporary Islamic Studies. It is published four times a year. So far 43 issues have been published, and it is now 15years old.

8 - The Educational Journal: -

it was founded in 1983. It is interested in publishing research and educational studies, whether theoretical, practical or professional. It aims to support educational thought, study of educational problems and propose solutions. It is published four times a year. The last issue was number 55 (Volume 14th).

9 - The Journal of Medical Basics and Applications

it was founded in 1988. It is published in English four times a year and deals with basic and applied medical research, in addition to the study of medical conditions, particularly with regard to medical issues in Kuwait and similar areas. The magazine is printed in Switzerland and is addressed to specialists in medicine. Volume 8 was published; issue No. 4 (April 2000)

10 - Arab Journal of Administrative Sciences: -

It was founded in 1991 after the Iraqi invasion. It is concerned with the research related to administrative science. It is issued every four months starting from January 1999. The first issue was published in November 1993. So far, the seventh volume has been published, the second issue.

B - The Committee of Authoring, Arabization and Publishing: -

In addition to these academic journals, the Committee of Authoring, Arabization and Publishing was founded in 1971. As evident by its title, it is meant to encourage scientific and cultural publication of researchers, from both faculty members of Kuwait University or abroad. The most important objectives of the committee is to issue educational books to cover the shortage in scientific resources and references and enrich the library with specialized books on the one hand, and on the other hand, to encourage Arabization either in terms of terminology Arabization or translation of scientific books.

This committee did well as it did not stop working since its inception to today (except during the Iraqi invasion). The committee issued nearly 259 books by mostly Kuwaiti scholars, as for example:

-Prof. Dr. Ali Al-Shamlan, Microfiches Analysis of the Muddled Formation in Kuwait (1974)

- Dr. Mohammed Al Muqate: "Protection and Guarantee of Individual Privacy against Computer" (1992)

-Prof. Dr. Hayat Nasser Al Hajji: "Power and society in the Mamluk Sultanate: the Reign of the Maritime Mamluk sultans " (1997)

- Dr. Fahd Nasser Abdel-Rahman: "Social Upbringing of the Children of Martyrs and Prisoners", (1998)

- Prof. Dr. Fahd Al Thaqeb : "Women and Divorce" (1999), etc ....

Second Feature: The Council of Scientific Publications:

As a result of the increasing number of university journals, and the intensive publication of the committee of authoring ,Arabization and publishing, came the establishment of the Council of Scientific Publications at Kuwait University based on a decision of the Minister of Education's, the Supreme President of the University on 16.12.1986.

This decision came as a coronation for the hard and deep work which lasted almost fifteen years. The most important objectives of this decision are:

* Forming a legal umbrella of the magazines and the Committee of authoring and Arabization and publication in respect of financial and administrative controls.

* Achieving a degree of development and coordination within the "Committee for Coordination and Follow-up."

*Questing to gather all magazines and the Committee for authoring and Arabization and publishing in one location. This happened in 1993.

The Council Responsibilities:

- Putting policies and rules for publication in magazines and publications of the committee of authoring, Arabization and publishing
- Nominating members of magazines and the Committee of authoring editors for the university chancellor.
- Discussing the annual reports of the magazines and the authorship committee.
- Developing financial and administrative systems and proposing the budget.

The university president appoints chief and director of the council of scientific publishing, and the chief editors of scientific journals and President and members of the authoring, Arabization and publishing committee, in addition to the editing commissions of scientific journals for a period of two years, renewable for a similar period.

The University Deputy president for Research and Head of Academic Publication Council chaired the meetings of the Academic Publication Council, and issues all decisions taken by the Council, and follows-up their implementation through the council executive management. Part of his duties is to adopt budgets for magazines and the authoring Committee, as the scientific publishing council has a special annual budget as an income from the university (6). The council executive management is attended by the council's director.

Third Feature: Results of the Study

The University Media Landscape:

Through this review we can highlight some of the conclusions which clearly show the role of the Scientific Publishing Council in developing culture locally, in the Gulf, the Arab world and internationally.

- The total numbers of the ten magazines issued are more than 600 since the first issue.

* The total number of researches subject to the dual system of arbitration which were published in journals exceeded 4000.

*The number of copies of each journal and each book ranges from 1,000 to 8,000 copies.

* The Arabic language percentage in the ten magazines is 66.9% vs. 33 .1% for the English language (in 2012/2013)

* Two magazines are published in the English language are the Kuwait Journal of Science and Engineering, and the Medical Foundations and Applications Magazine.

* The of the arbitrators who have been asked to help were evenly distributed between Kuwaitis and the Arab countries (34/34%) . As for the Gulf States, they formed 12% while the foreign countries constituted 19.5 %.

* The preparation of indexes to ten magazines from the start up today provided a means of first-class research.

* The number of books issued by the Committee of authoring, Arabization and publishing is amounted to 259 books from 1970 to 2013, including nearly 100 books issued by the staff of the Faculty of Arts, and 100 books from the Faculty of Law, and the rest were distributed on other colleges. The Arabic ratio was 70% while the rest were in English.

* participation in book fairs locally, in the Gulf and in the Arab world had a better effect on the proliferation of publications of the Scientific Council for publication.

Perhaps the most important conclusion is that the Scientific Council for publication, due to the wise policy of the university, has become a nucleus for a university publishing house, like the prestigious global universities. The council entered what is known as the cultural industries in the era of globalization.

(6) The current president is Prof. Dr. Hassan Sindh.

(7) The Scientific Publishing Council publishes an annual comprehensive report on his work and achievements. And we have relied in the following pages on some results and tables contained in the final report (1999-2000). We should extend our thanks to the distinguished Chairman of the Board

The Council focused in the current policies on:

- Preparing a data base for the Gulf and Arab universities by disclosing their locations on the Web, so as to enable scientific journals to rapidly open channels of communication, and to benefit from the expertise of scientific journals issued by those universities.

- Forming a committee to divide the Council store to overcome the obstacles facing organizing inventory processes, especially the available capacity of the store does not commensurate with the size of the available publications, or (returns).

- Following a new and crucial policy for distribution ,subscription and sales (dealing with the new company for distribution).

It is established that most universities in the world are not good at marketing their scientific products (books and magazines). This is unfortunately evident in the activity of the Scientific Publishing Council, where from a total of 71100 magazines, the following happened in the past year 2012/2013:

2012/2013 Year

Type	Total
Subscriptions	2687
Sales	26369

The publications of the Scientific Publishing Council sales of (books & magazines) were 26369 copies, a figure that is unprecedented in the history of scientific publishing council .This great figure came in just one year 2012/2013.

The following illustration shows the sale channels of the Council of Scientific Publications:

94100 copies of scientific journals and book, are annually printed:

Total	Distribution Outlet	Percentage
34907	Allocated for distribution inside and outside Kuwait	37%
26369	Devoted to sales	28%
10748	Allocated for annual subscription	4.11 %
12226	Allocated for gifts and exchange	13 %

What is discharged annually from the printed amount is 89.4%, while only 10.6 % remains in the council stores. This small percentage is released annually through book fairs; therefore the magazines re-print the out of print issues from time to time. For example, the Journal of Law re-printed so far, 37 out of 78 issues since the liberation.

The Scientific Publishing Council adopted a policy based on keeping pace with contemporary technologies:

* Uploading the council magazines on the Internet.

* Each journal has a site.

* Designing a special page for the council on the Web which includes a short account on the Council , its origins and objectives ,its latest news ,its scientific journals and the authoring and Arabization and publishing committee.

* Inserting the contents of the council magazines in the Arabian Gulf University Guide, which includes the Arabic arbitrated periodicals which is located on the web site under www.alfihrist.com

* To gain international recognition and to be supported in the committees of promotions for researchers and faculty members, the Council scientific journals were adopted in the periodical directory of "Ulrich's International Periodicals Directory."

* To confirm Kuwait University attendance in the cultural forums and events, the Council participated in the 25 Book Fairs, of which 12were out of Kuwait (1998/2013), which achieves more sales.

2- Mechanisms of Scientific Publishing Council in the production of scientific and academic culture:

1- Publishing and Printing:

To support and enrich the Arab and international library with distinguished and serious works of researches, studies and books, and in order to provide arbitrated scientific publishing opportunities, the Scientific Publishing Council issued during the period from 1999 to 2013 a group of issues of scientific journals amounted to 43 and 90,100 copies, and 17 books written by the committee of authoring, Arabization and publishing amounted to17, 000 copies.

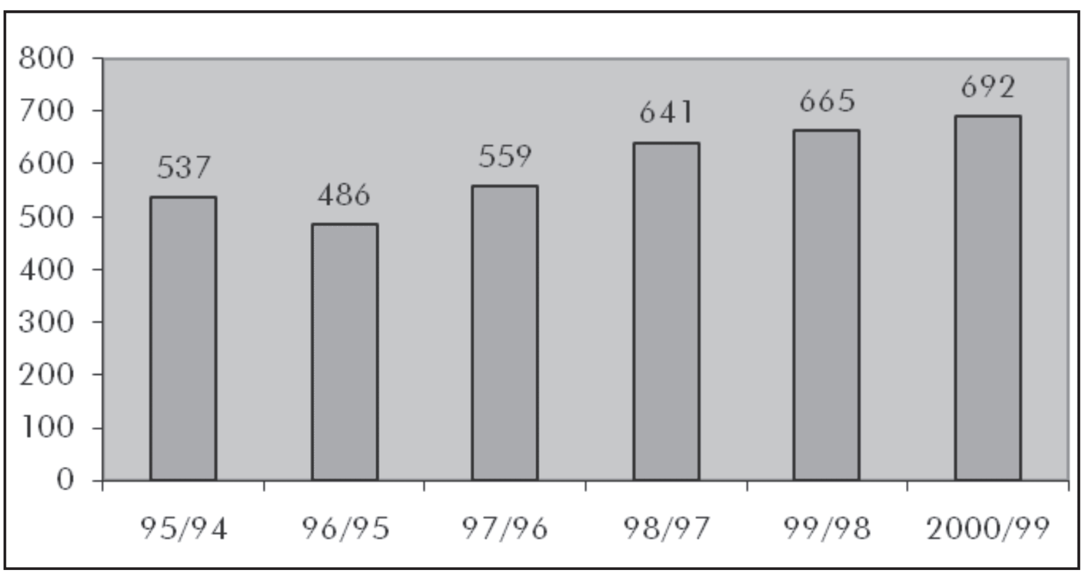
The Scientific Publishing Council also issued private books through its scientific magazines, as one of the activities associated with the publishing issues, namely:

- Minutes of meetings of the Constitution Committee and the Constituent Council.
- A set Kuwait's constitutional documents.
- Kuwait prisoners in Iraq (Arabic, English, French).

2- Received Researches, their Sources and Appropriacy for Publication:

The Scientific journals received 692 researches in various scientific disciplines from different countries. The scientific journals have achieved an increase in the number of researches received compared with the previous year 98/99; this increase comes to confirm the researchers' confidence in the demand for publishing in scientific journals. The following Figure No. (1) Shows the evolution and reception of researches during the past six years.

Figure No. 1: Shows the number of researches received in the years 94/95-99/2000 (8)



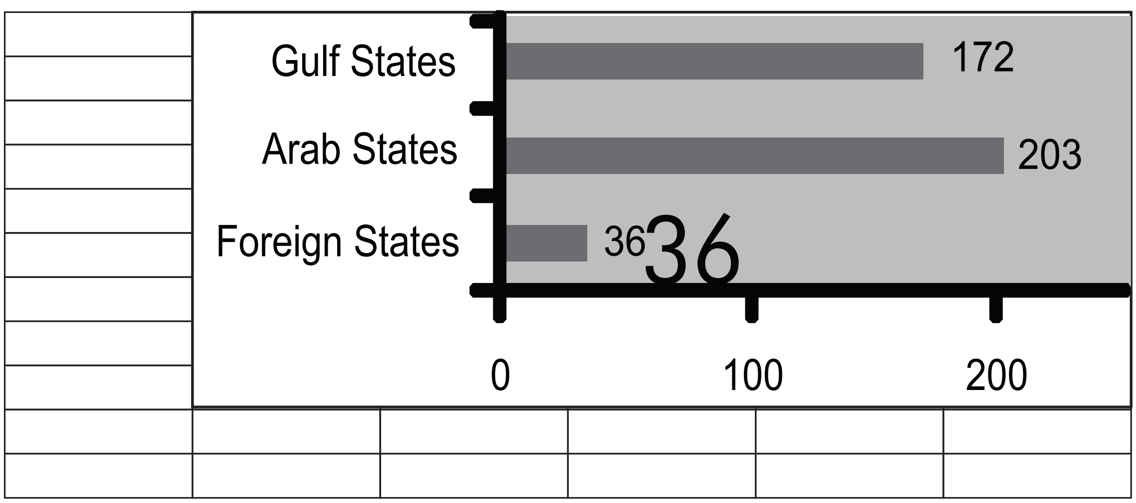
At the same time, the number of researches rejected rose to 35.8 % compared with the approved research of 20.5 %. This increase has its positive significance, as the higher the rate of researches rejected, the more journals keep on their scientific value, which undoubtedly come through purification of researches received, and choice from which according to the publishing rules in use.

Published researches rate also decreased from 6% last year to 3.7% in the current year. This is an indication of the long waiting list for publication. This is clearly reflected in the degree of demand for publishing in the Council Publications.

The following figure number (2) shows the extent of non- Kuwaiti researcher's ambition for publication in the scientific journals, compared with people inside Kuwait. Scientific Journals are no longer as they were in their first years relying on publishing the researches of Kuwait University faculty staff, but these journals started to gain interest from outside Kuwait; where scientific journals attracted 411 researches, while they attracted 281 researches from inside Kuwait. This is a positive indicator which has a prominent civilization meaning, and reflects the bright status of Kuwait University; and a real practice of Kuwait cultural leadership role on the scientific arena.

8. The Annual Report 1999/2000, Council of Scientific Publications, p. 13

Figure No 2: Shows groups of researchers' States (9)



3- Arbitration of Research and Books:

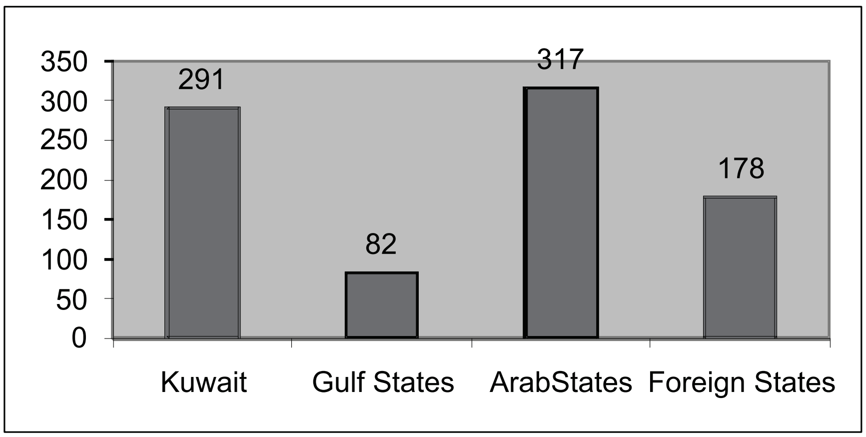
In the context of achieving greater cooperation and scientific communication and exchange of experiences, the scientific journals and the Committee for authoring, Arabization and publishing sought assistance of 868 arbitrators from different disciplines and from different countries. The following

Figure No. 3 show the groups of countries from which arbitrators are involved. This is an indication of the cooperation with universities of these countries. This cooperation represents activation of cultural agreements concluded between the State of Kuwait and those countries.

9. Ibid. P.18

Figure No. 3: Shows countries of Arbitrators (10)

Since arbitrators from outside Kuwait seemed more than those from Kuwait, as it is shown in the previous figure by 66.5 %, this fact confirmed that the scientific publishing Council is keen on impartiality in arbitration of received researches. This objectivity encouraged researchers to publish in Kuwait University journals.



4 - Holding Seminars and Symposiums:

The scientific journals held a series of symposiums and seminars within the university, and hosted specialists in the field of symposium. These scientific activities are meant to cover and address some issues on the arena. This activity links the academic community with the country issues, and contributes to finding appropriate solutions for problems. The study took place in (2012-2013):

- Closed Seminars:

A - Crime: trends and rates in the Kuwaiti society.

B - Freedom and responsibility.

- Symposiums :

A -the constitutional limits the minister responsibility for the public institutions.

B - The educational and social dimension of the Kuwaiti prisoners in Iraq.

5- Having Access to Scientific Awards:

Emphasizing the prestigious scientific status occupied by Kuwait University scientific journals, which, no doubt, reflect embracing these magazines for solid researches and in-depth studies that are closely linked to local development issues. The published researches won the following awards:

- A research won the Kuwait Foundation for the Advancement in the field of humanities was entitled "the relationship between lack of objective supervisory system and some negative phenomena in the organization: A correlative study applied to Kuwaiti organizations". It was published in the Arab Journal of Administrative Sciences - Volume 5 - 2nd issue - May 1998 by Dr. Hamad Saleh Al-Duaij and Dr. Abdel Nasser Mohammad Ali Hamouda - faculty members of Administrative Sciences College.

10. Ibid. P.16

- A research won the Kuwait Foundation for the Advancement in the field of science was entitled, "Numerical modeling of Um Qadeer field in Kuwait". It was published in the Journal of Kuwait University for Science and Engineering - volume 25 - first issue - June 1998 by Dr. Fawzia Mohamed Al Ruwaih - Professor of Geology, Faculty of Science.
- The Arab Journal of Administrative Sciences won the best Publisher Award for a research published in an arbitrated Kuwaiti Journal in 1998 in the field of humanities. The Kuwait Foundation Management Council adopted the recommendation of the Award Council in its session on 07/12/1999. Winning this award by the magazine from a prestigious scientific institution is considered recognition of the researchers, the Council of Scientific Publications alike. It is also a confirmation that the magazine has proved its scientific excellence in its field of specialization.

6 - Participation in Scientific Conferences:

In order to follow up developments and prospects of progress, in addition to the exchange of information and expertise among the participants, and to build scientific relations with regional , international bodies and organizations:

- The Scientific Publishing Council participated in the universities and scientific publishing conference in Washington DC, in 1989. The Council of Scientific Publishing was represented by its Director at the time. The Council also participated in the thirty-third session of MESA during the period from November 19 to 22, 1999. The MESA is a private association, and non-political organization founded in 1966. It is based at the University of Arizona, USA. This organization is interested in all studies and researches of the Middle East. It is also a member of the Board of American scientific and cultural associations, and a member of the National council for studies in the field of international humanitarian coalition. The Council was represented at this conference by Prof. Dr. As'ad Ismail - the Chairman of the Council at that time.

- The Committee of Arabization participated in the sixth annual conference of Science Arabization, which was organized by the Egyptian Association for the Arabization of Science at Ain Shams University, during the period from April 11 to 13, 2000. Dr. Ferial Bu Rabee' represented the committee in the conference.

7 - Adoption of the projects:

- The Scientific Publishing Council approved publishing special issues of journals containing published researches in English. By this decision, the Council aims to produce issues in English language to expand the council publications recognition circle among foreign universities, and to participate in book fairs that are held there, in addition to the possibility of marketing these journals in English- speaking countries. This project is being implemented now.
- The Scientific Publishing Council approved publishing a special book on the Kuwaiti prisoners and detainees in Iraqi prisons. By this book, the council aims to support efforts for releasing prisoners and detainees, and to provide scientific research contribution in this respect. The book which is now under editing by professors of different universities, tackles the subject from several aspects.
- The Scientific Publishing Council approved publishing an analytical guide for published researches, studies in scientific journals and books of the committee of authoring, Arabization and publishing. This work will enable researchers and students to have access to all the researches, studies and books published. This guide will be distributed to universities and research institutions. It will also be uploaded on the web. This project is now being implemented.
- The Scientific Publishing Council approved introducing a computer program, especially for staff in terms of personal and job data, and everything related to their transactions, such as leaves and salaries, and so on. Required data entry is now in progress.

8 - Works of the permanent and temporary committees:

- Arabization Committee:

Because Arabization is of great national importance and has cultural, social, and developmental dimensions, the Arabization committee was formed as a sub -committee of the authoring, Arabization and publication of the Council of Scientific Publications. This committee establishes scientific links with institutions interested Arabization, and it coordinates efforts in the Arabization of the university book in the regional states.

9- Distribution of the Council Publications :

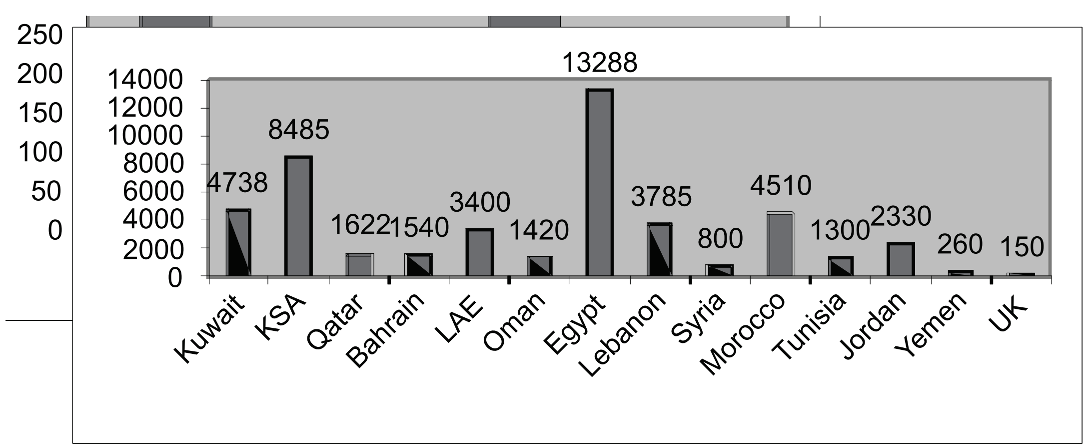
Due to the growing interest in the Scientific Publishing Council publications, including the reader confidence in these publications, due to the topics which deal with cases and disputes that are subject to research and study. As part of the Council eendeavour to expand the base of the printed publications spread, and to be in access to the reader in his own country, the distribution policy was adopted to achieve

this goal, by allocating quantities of publications in the Gulf States, Arab countries and some foreign countries libraries. This procedure reflects the Council keenness to be present in the markets of these countries.

In this year, the copies that have been put on the market were 47 628, distributed to 14 countries, all of the Gulf states were covered, and most Arab countries, in addition to a foreign country :the United Kingdom.

The number of copies has jumped this year 2013 to (47 628) compared to last year (34 907), i.e. 12721 copies increase which represents 36. 4 %.This increase is what the Arab and Gulf markets need of these scientific publications.

Figure No. (4): Shows Countries of the Council's publications Distribution. (11)



The above figure clearly proves how keen the Council on highlighting the role of the university in providing the scientific arena with serious researches, in-depth studies and publishing them outside its borders; the percentage of what is put in markets outside Kuwait is 90.1 %, while in Kuwait is 9.9%.

10 - Attracting Subscribers:

The annual subscription is one of the marketing channels of scientific journals. It is also one of the magazine gauges for presence and impact among readers, and it represents financial revenue channel as well. The number of subscribers this year amounted to 2625.

The reasons for attracting this number of subscribers are attributed to the Council's efforts in promoting its publications by various means and methods, among which addressing universities, distribution of brochures, participation in book fairs and organizing campaigns to attract subscribers from time to time.

The following Figure No.5 shows the presence of the council publications among their readers in the groups of States. It also shows the influence of the magazine outside Kuwait more than at home.

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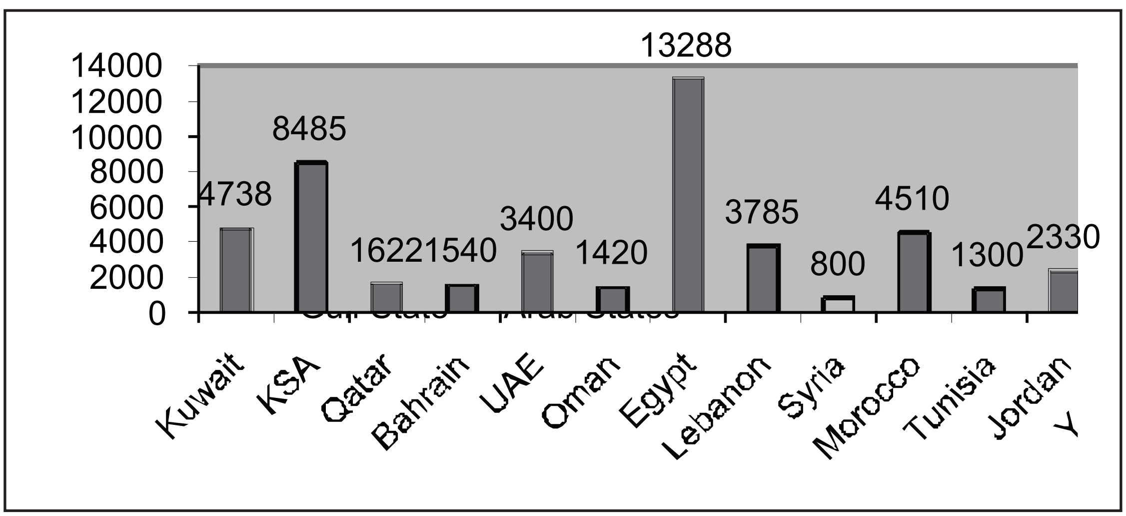
11. ibid. P.24

Figure (5) Shows subscribers' States (12)

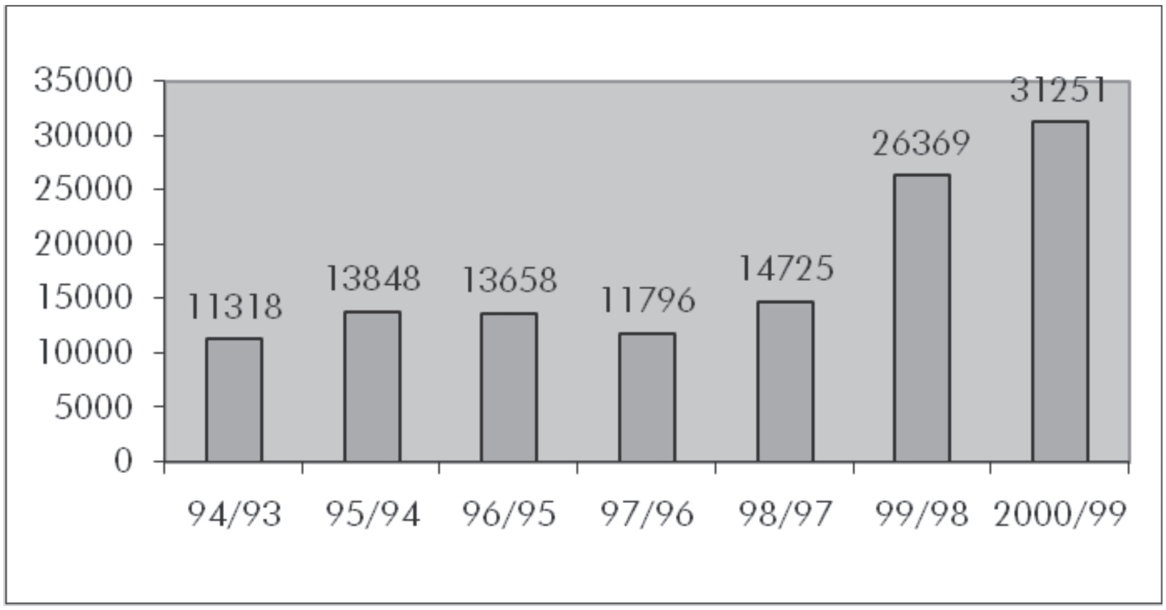


11 - Sales of Publications:

The publications Sales revenue is considered supporting channels for the scientific publishing Council budget. The number of copies sold jumped high in 2013 compared to previous years. The scientific publishing Council sold 31 251 copies this year from the three sources (magazines headquarters, book fairs, distribution outlets.

The figure achieved by the Council in sales shows that it is unprecedented in the history of scientific publishing Council. The next figure (6) shows the evolution of the copy numbers sold during the previous seven years.

Figure (6) shows the evolution of the council sales during the previous seven years. (13)



12. ibid. P.25
13. ibid. P.25

12- Advertising and Media

To gain international recognition, and to support them in the committees of promotions, six scientific journals were adopted in the database of Social and Human Sciences Documents Center. They are included in the web site under www.unesco.org/general/eng/infoserv/db/dare.html, which is a directory of various international journals published by universities and research institutes.

As part of the expansion of the Council's publications' base, the publications of the Council were put in libraries of 33 centers for Middle East Studies at the American universities, and in nine similar centers of the European countries.

- Press coverage about the Council's activities has been made in the local newspapers, especially with regard to the achievements of the Council, new books by the committee of an authoring, Arabization and publishing, in addition to announcements about establishing seminars and forums. Press releases were amounted to 66 press statements.

- Granting groups of the university publications to research centers, cultural institutions and scientific bodies; so as to strengthen relationships with these entities, and help them know Kuwait University scientific production. These publications may become references to enrich libraries of these entities. At the same time, these entities donate their publications to the Council of Scientific Publications, which in turn keeps them in the scientific journals libraries.

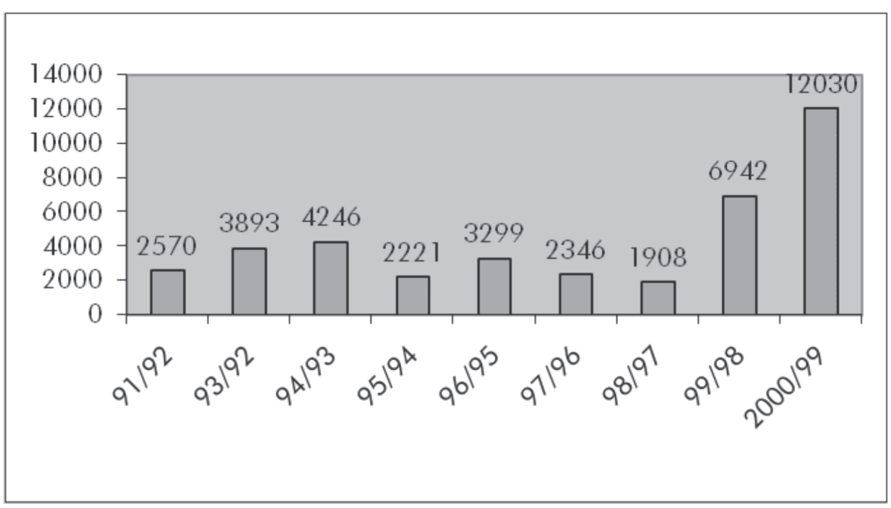
13 - Participation in the Cultural Events:

To confirm Kuwait University attendance in the forums and cultural events, and to contribute to the enrichment of knowledge and culture, and because of recognizing the importance of the book and its role as a cultural and civilizational contact, and a bridge to connect with our brothers and friends in the present and future, the Academic Publication Council participated in 12 Book Fairs, 8 of which were outside Kuwait, while four of them were inside.

By participating in these exhibitions, the Academic Publication Council achieved a great figure not seen since its inception in 1986, where the number of copies sold was12030, which is 5088 copies, or 73% higher than that of last year. The foreign exhibitions share was10 614 copies, or 88.2% of the total sale.

The following Figure No.7 shows the number of sold copies during the years that the Council participated in book fairs since the liberation until 30/06/2000

Figure No.7 shows the number of copies sold at book fairs since the liberation until 30/06/2000 (14)



The above figure clearly shows the sales achievements of the Council this year in the book fairs, a figure unprecedented in the history of the Council, which stresses the importance of book fairs in highlighting the role of the Kuwait University as a prominent scientific establishment, that publishes its scientific production outside its borders, and has a foothold fixed in the forums and cultural events in which it participates.

4 - Other Media:

A - "University Afaaq" newspaper:

It is weekly journal founded in 1978 (574 issues). It now lives its 22nd year. It is published in the 32page, in addition to advertisement appendices .The content is written by students only, particularly, students of the media department, which was established in 1992 . The editor-in- chief is a faculty member of the Department of Information (14). It publishes the University News , such as administration, faculty members , Deanship of Student Affairs, Deanship of Admission, the Committee of Deans and colleges committees etc., it has also fixed columns ,such as "the other side", which is a press interview with one of the faculty members at Kuwait University ; "investigations" , " a break" , "popular poetry" , "Young Pens" , "Open your heart to us" , "views and ideas ","a spray of ink "," words of faith "and" sports ", etc. .

14. Headed by Dr. Anas Rashid, member of media department staff; consultant of the university director for public relations.

"Afaq" journal and its sisters at the Arabian Gulf universities is a cultural advantage for male and female students. These journals motivate them and instill in them a sense of responsibility, and makes them active public critics, unlike some of the other universities in the Arab world where silence camp and downcast curtains and the silent majority of students remain under the tyranny of chaotic and extremist leaders made of riot a strategic principle to show their power in the absence of any productive goal.

This newspaper remains a constructive channel of dialogue and a bridge between the university administration, faculty members and young students.

B - Department of Public Relations and Media: -

The Department of Public Relations and Media at Kuwait University is eager to gain internal and external public confidence ,and improve the image of the institution so as to allow the product ,who are the male and female graduates, to have the opportunity to engage in the work and community service market.

The cultural activities, which are usually carried out through the University conferences, seminars, forums and workshops are at the forefront of this administration concerns .The administration is keen on covering, documenting and delivering these activities, via the written press, radio and television, to the target audience; along with all issues which the university supervises regarding promoting the university and providing Information for the public.

The Administration is divided into two sectors: public relations and advertising sector and media affairs sector; each sector consists of three sections. The sector of public relations and advertising includes the following sections: public relations, advertising, exhibitions. The sector of media affairs includes journalism, photography, the department of media programs and the publishing section.

First: Department of Press and Photography

The Department of Journalism and Photography includes the section of press and photography. This section has four female journalists' graduates of the department of the media department, Faculty of Arts - Kuwait University.

The Department of Journalism at the university covers various events, such as conferences, seminars, lectures, exhibitions, honoring parties, enlightenment meetings and master's theses. In addition to making press coverage of visits by public figures to the university director and her deputies, such as ambassadors and deputies of the National Assembly as well as visiting foreign delegations.

The section also conducts press interviews with the faculty members. The meeting may occur with the director of one of the departments or centers in order to shed light on the work of that body which offers services to the university and its students. The Department of Public Relations and Information has issued a book that contains all journal investigations, which the administration staff did during the past year, to be a comprehensive source of all that was issued by the administration of journal investigations during a certain period (15). The Department of Journalism prepares more than one piece of photographed news a day. The number of prepared news may reach four a day.

15. Journal Investigations, Department of Public Relations and Media, University of Kuwait 1998, p. 278 (the contents of the meeting with the director of the university Prof. Dr. Faiza Al-Kharafi, a survey of university professors summer semester, a meeting with the head of al-Khwarizmi for training and professional development, Journal Investigation: freshman and registration, Date and ... face to face! a meeting with Deputy Director of University for Research: A notable visit to the research projects at the university

Through coordination with the daily newspapers, the news is sent to the following newspapers: Al-Watan, Al Anba', Al-Qabas, Al Siyasa , Al Rai Al Am, Kuwait Times, Arab Times, in addition to the weekly newspaper Al Taleea weekly newspaper and university Afaq journal .

The photography section of the department includes a number of photographers distributed at various colleges, and is always present to cover the activities of the university and its various activities, so as to enrich news with photographs.

Second: Department of media programs: -

The department of media programs (radio and television) manages public relations and media by preparing two weekly programs for the Kuwaiti radio, namely, "the university radio" program, which is broadcast at quarter past six every Wednesday evening; and the "Encyclopedia of research," which is broadcast at quarter past six every Saturday evening. The programs are broadcast in collaboration with Radio of Kuwait.

The "university radio" program broadcast several items: university news, university events, student activities, university issues, and the last one includes an interview with a university official to talk about a particular issue which concerns the university community.

The "Encyclopedia of research" program, however, hosts in each episode an academic researcher from the faculty members of the university to talk about a research or a study he has already conducted.

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4. Ahmed Bustan , Views and Educational Trends in the field of literacy in Kuwait, Journal of Social Sciences, Issue 3, Volume 12, Fall 1984, p. 66.
5. .A Meeting of siblings: four decades of Arab magazine and the Kuwaiti cultural project (10-12 April 1999
6. The current president is Prof. Dr. Hassan Sindh.

7. The Scientific Publishing Council publishes an annual comprehensive report on his work and achievements. And we have relied in the following pages on some results and tables contained in the final report (1999-2000). We should extend our thanks to the distinguished Chairman of the Board
8. The Annual Report 1999/2000, Council of Scientific Publications, p. 13
9. Ibid. P.18
10. Ibid. P.16
11. Ibid. P.24
12. Ibid. P.25
13. Ibid. P.25
14. Ibid. P.27
15. Headed by Dr. Anas Rashid, member of media department staff; consultant of the university director for public relations.
16. Journal Investigations, Department of Public Relations and Media, University of Kuwait 1998, p. 278 (the contents of the meeting with the director of the university Prof. Dr. Faiza Al-Kharafi, a survey of university professors summer semester, a meeting with the head of al-Khwarizmi for training and professional development, Journal Investigation: freshman and registration, Date and ... face to face! a meeting with Deputy Director of University for Research: A notable visit to the research projects at the university)

AN EXAMINATION OF THE CHARACTERISTICS MODEL AND THE FACTOR MODEL USING STRUCTURAL BREAKS

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Valeed Ahmad Ansari[2]
Saghir Ahmad Ansari[3]

Abstract

This paper tests the explanatory power of two major theories of finance, namely Daniel and Titman's (1997) characteristics-based model and Fama and French's (1993) three-factor model by applying Bai Perron's change-point model using the Indian Stock Market. Stocks are ranked by size and book to market ratio and then by pre-formation HML loadings. In time-series regressions, results are more consistent with the factor pricing model than with the characteristic-based pricing model.

Key words: Asset pricing, Characteristics model, Factor model, Structural break

JEL Classification codes: C1, G1, G2

1. Introduction

Whether the explanatory power of size and book-to-market in stock returns is based on a firm's characteristics or the covariance structure of the returns remains an unsolved puzzle in finance.

This debate started when Fama and French (1992) reported market capitalization and book-to-market as two major determinants that explain the cross section of stock returns. In 1993 they constructed two factor portfolios to capture the size and book-to-market premiums in their three-factor model (Fama and French, 1993).

Daniel and Titman (1997) examined a sample period from 1973 to 1993 and concluded that a stock's expected return seems to be determined more by its characteristics (e.g., high versus low book-to-market than by return pattern (e.g., whether it covaries more with high or low book-to-market stocks).

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Based on the result they rejected the "factor" hypothesis that expected stock returns are directly related to the covariance structure of returns.

Davis, Fama and French (2000) challenged Daniel and Titman's result. They attributed Daniel and Titman's result in favor of the characteristics model to the short sample period of their study. Davis, Fama and French extended the sample period back to 1929 and found that the relationship between BM and stock returns is better explained by their risk-based factor model. Moreover, they conducted the robustness test by splitting the sample into sub-periods and found the results in favor of their risk-based factor model. The characteristics model was supported only for 1963-1993. Daniel et al. (2001) reported more supportive evidence for characteristics model in their study on the Japanese data.

2. Data and Methodology

Our study examines monthly data on common stocks listed on the BSE-500 index from September 1993 to September 2003. The number of firms covered significantly increases from 1996 to 2013. Share prices and accounting data are from the Prowess database published by the CMIE. The risk free rate is computed using the 91-days Treasury bill rate. The 91-days T-bill rate is sourced from the Reserve Bank of India's weekly auction data. The implicit yields have been converted to monthly rates. The risk free rate (Rf) is deducted from the return of the market portfolio to obtain the market risk premium.

Following DFF's (2000) method, we construct a characteristic-balanced portfolio based on size, BM and HML loadings. Individual stocks are sorted into two groups (S and B) based on their size at the end of September

We sort stocks on size (market capitalization or market cap) and the ratio of book equity to market equity (B/M). The explanatory returns in our study are for portfolios constructed from 2 x 3 sorts on size and B/M. At the end of September of each year t from 1993 to 2003, all sample stocks are ranked on the basis of size. The median sample size is then used to split the sample companies into two groups: small (S) and big (B). The sample stocks are broken into two B/M groups: low (L) and high (H) based on the median of the ranked values of B/M for the sample stocks.

We construct four portfolios (S/L, S/H, B/L, B/H) from the intersection of the two size and two B/M groups. For example, S/L portfolio contains stocks that are in the small size group and also in the low B/M group while B/H consists of big size stocks that also have high B/M ratios. The firms remain in these portfolios from October of year t to September of year t+1.

The four portfolios are each subdivided into two portfolios (Lh and Hh) using pre-formation HML loadings which are estimated from three years of monthly returns. The resulting sets of portfolios consist of stocks with approximately the same size and book-to-market ratios, but with different loadings on the book-to-market factor HML. These portfolios allow us to examine the extent to which average returns are generated by the factor loadings rather than the characteristics.

We compute monthly equally-weighted returns for each of the eight portfolios from October of year t to September of t + 1, and the portfolios are reformed in October of each year. The characteristic-balanced portfolio, Hh-Lh, is defined as:

Hh-Lh = [(S/L/Hh-S/L/Lh) + (S/H/Hh-S/H/Lh) + (B/L/Hh-B/L/Lh) + (B/H/Hh-B/H/Lh)]/4

Following regression is run:

$(\text{Hh-Lh})_t = a + b\,(R_{Mt} - R_{Ft}) + s\,\text{SMB}_t + h\text{HML}_t +_{?t}$ (1)

Intercepts estimated in the above regression form the basis for drawing the inferences about the factor model and the characteristic model.

The three-factor model is a better descriptor of stock return patterns if the intercept term from Eq. (1) is not significantly different from zero. The characteristics model is supported if the intercept predicted by Eq. (1) is negative. Moreover, if the intercept is significantly positive, both the three-factor model and the characteristics model are rejected.

Bai Perron's (1998) structural change model is applied to consider the following linear regression model with m breaks, and *m+1* regimes

$(\text{Hh-Lh})_t = a_j + b_j\,(R_{Mt} - R_{Ft}) + s_j\text{SMB}_t + h_j\text{HML}_t +_{?t}$(2)

for $_j$ = 1,...,*m* + 1, where $_t$ = T_J - 1 + 1,...,T_J. Let T_J denote the date of the $_j$th break, which is treated as unknown. Here a_j, b_j, s_j and hj *(j = 1, ..., m +1)* are the intercepts and corresponding coefficients, and ?t is the disturbance at time t.

3. Empirical Results

The results are reported in table 1 and 2. Table 1 presents the estimated dates of structural breaks. Four break dates are detected at 1999/08, 2002/04, 2005/11 and 2011/03 which divide the sample into five regimes.

Parameter estimates of the three-factor model for each regime are presented in Table 2. For all the regimes, the intercepts are not significant and negative. The main difference is that Hh-Lh portfolio loads negatively on RM - RF only in the second regime, while for the rest of the regimes

Table 1. Estimated break dates

	Break date
First break	1999/08
Second break	2002/04
Third break	2005/11
Fourth break	2011/03

Author's calculation using E-views 9.5

Table 2. Parameter estimates in each regime (t-statistics in parenthesis)

	a	b	s	h
1996/10-1999/07	-0.0064	0.0938	0.3638	0.1790
	(-0.9157)	(1.0303)	(2.4819)	(1.7703)
1999/08-2002/03	-0.0007	-0.0474	-0.3683	0.2662
	(-0.1128)	-0.9563)	(-2.6702)	(3.3061)
2002/04-2005/10	-0.0033	0.0855	-0.2220	0.4685
	(-0.6374)	1.3580)	(-2.3543)	(6.1163)
2005/11-2011/02	-0.0043	0.0462	0.1913	0.2315
	(-1.7953)	2.0155)	(2.5193)	(3.4064)
2011/03-2013/09	-0.0016	0.4158	-0.5251	-0.1860
	(-0.3849)	5.3269)	(-5.5712)	(-3.0825)

Author's calculation using E-views 9.5

it loads positively on RM - RF. H_h-L_h portfolio loads positively on SMB only in the first regime, while for the rest of the regimes it loads negatively on SMB. On HML this portfolio loads negatively only in the fifth regime. For all except fourth regime, the factor model is supported as the intercepts are not significantly different from zero. For the fourth regime, 2005/11-2011/02, the intercept is marginally negative (the estimate is -0.0043 with a t-value of -1.795), which supports the characteristics model.

	Break date
First break	1999/08
Second break	2002/04
Third break	2005/10
Fourth break	2011/03

Author's calculation using E-views 9.5

As a robustness check we further examine how the empirical results are affected by the January effect. Table 3 and 4 present the change-point estimation results by excluding January months from the sample. Same break dates are found to exist in the sample without January months. This seems to suggest that the January effect does not exist in Indian stock market. For all except fourth regime, the factor model is supported as the intercepts are not significantly different from zero. For the fourth regime, 2005/11-2011/02, the intercept is marginally negative (the estimate is -0.0051 with a t-value of -2.0464), which supports the characteristics model. excluding January month from the sample has no impact on the results which confirms that January effect has no connection with the Indian stocks. These results are inconsistent with international studies where exclusion of January month diminishes the explanatory power of the characteristic model (Chou and Cheng Ko, 2008).

Table 4. Parameter estimates in each regime excluding January months (t-statistics in parenthesis)

	a	b	s	h
1996/10-1999/07	-0.0057	0.1512	0.4305	0.1219
	(-0.8052)	(1.5499)	(2.8923)	(1.1783)
1999/08-2002/03	0.0041	-0.0354	-0.4164	0.2163
	(0.6352)	(-0.7596)	(-3.0193)	(2.8220)
2002/04-2005/09	-0.0021	0.0754	-0.2497	0.4787
	(-0.3525)	(1.1105)	(-2.4280)	(5.9919)
2005/10-2011/02	-0.0051	0.0541	0.2179	0.2416
	(-2.0464)	(2.2285)	(2.8099)	(3.4495)
2011/03-2013/09	-0.0025	0.3904	-0.5102	-0.1993
	(-0.5515)	(4.5298)	(-5.2303)	(-3.1489)

Author's calculation using E-views 9.5

4. Conclusion

This paper investigates the competing power of two major models of asset-pricing, namely Daniel and Titman's (1997) characteristics based model and Fama-French's three-factor model by applying Bai and Perron's change-point model which allows for endogenous structural changes in the return generating process.

Four to five structural breaks are identified over the entire sample period, 1996-2013. The results find more support for the covariance-based model, and characteristics-based model works for one period only. Robustness analysis indicates that exclusion of January month from the sample has no impact on the explanatory power of any of the models. To conclude we can say that the risk-based factor model is a good tool to describe returns. It can be useful for many fields in finance such as portfolio analysis, performance evaluation or corporate finance.

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An Examination of Supply Chain Performance Factors based on the Quality of Relationships

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Abstract

The present research work uniquely brings together the quality of relationship factors and supply chain performance factor by way of establishing relationships among them using extant literature. The quality of relationship factors are trust, commitment and satisfaction. The overall of supply chain performance factors are cost, quality, dependability and flexibility. In addition, these relationships are tested empirically using structural equation modelling. The study focuses on the supply chain service providers in the region of New Delhi and NCR. The results indicate that the quality of relationship factors do not influence cost while all the three factors have a significant influence on dependability and flexibility. Also, quality is influenced only by the trust factors. The results are useful in deriving meaningful implications for improving overall supply chain performance for the service providers.

Keywords: Quality of Relationships, Supply Chain Performance, Trust, Commitment, Satisfaction.

Introduction

With the growing importance of focus on relationships in business the days for transactional style of doing business are numbered. This is not only true for situations when the offerings are transferred to the final consumer through a retail channel but also equally important for business-to-business dealings. In fact the importance of relationship is at the top for all the actors (or members) of supply chain (SC) who are interested in serious business. In the context of relationships among the actors of SC the quality of relationship model has gain a lot of attention among the researchers. The importance of RQ is due to its ability to assess the relationship strength which adds to competitive advantage (Hennig-Thurau et al., 2002; Wong et al., 2007). In fact RQ describes depth and climate of relationship (Johnson, 1999) while Crosby et al (1990) and Bejou et al (1996) affirmed that it is a prerequisite for building relationships for long term.

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Therefore, the present research work aims at examining the relationship among the key entities in a supply chain setup. The entities in a supply chain system are medium or large sized businesses among themselves which work in cohesion to achieve a common goal. A well tuned relationship among at all the levels will help in achieving customer satisfaction. However, the supply chain management system is full of inefficiencies due to lack of integration among the entities. The present research work investigates how the intangible relationships work among the various supply chain players with a focus on the elusive factors contributing towards the quality of relationships. The quality of relationship embedded in these factors have an impact on the business performance which is worthy of investigation.

Review of Literature

Relationships and Quality

Relationships in business are of utmost importance especially in Indian context. The quality of relationship is an indicator of the strength of its relationship. It is discussed widely in context of relationship in case of business to customer and business to business however the consensus pertaining to the dimensions of quality of relationship has not been achieved. However, it is interesting to note many researchers have pondered on a conventional definition of quality of relationship pondering on its constructs (Athanasopoulou, 2009; Qin et al., 2009). This has also led to difference in conceptualizing the overall quality model in various cases. The lack of consensus is also dedicated to the insufficiency quality research works which encompass critical discussion of the model including its dimensions (Hennig-Thurau, 2000). Hennig-Thurau (2000) also pointed out that most of these quality dimensions have been defined on the basis of intuition and hence causes lack of consensus about the dimensions of the model.

Various studies have focussed on exploring the dimensions of quality of relationship in the context of business to business settings which are definitely in line with the relationships pertaining to the various entities in the supply chain systems. In other words, due to business to business context of supply chain management systems these dimensions can be referred for each other.

Since, there is no agreement on the dimensions of the quality of relationship in the context of supply chain systems and business to business setting an exploration of literature suggests three key dimensions. These are trust (Kumar et al, 1995; Dorsch et al., 1998; Walter et al., 2003; Fynes et al., 2005; Rauyruen and Miller., 2007; Kühne et al., 2013; Razavi et al., 2016), commitment (Kumar et al., 1995; Dorsch et al., 1998; Walter et al., 2003, Fynes et al., 2005; Rauyruen and Miller., 2007; Razavi et al., 2016) and satisfaction (Dorsch et al., 1998; Walter et al., 2003; Rauyruen and Miller., 2007; Kühne et al., 2013). There are other factors but have found relatively limited attention in the research works. The three factors are reviewed in the following paragraphs.

Trust

According to Hosmer (1995), trust is all about relying upon any accepted responsibility in order to protect interests of all parties engaged in the process of economic exchange. For supply chain it is a key element for relationship (Svensson, 2004; Gounaris, 2005). It is understood that building trust among the partners is important for mitigating the risk involved (Spekman and Davis, 2004). Trust has been of huge importance in studies involving intra-firm relationships (Kingshott and Pecotich, 2007; Morgan and Hunt, 1994)

Commitment

Commitment encompasses the belief of the players in the supply chain, in the current relationship, wherein they make their best of the efforts to maintain the terms with other parties (Morgan and Hunt, 1994). It also includes their willingness to maintain the relationship (Monczka et al., 1998 and Spekman et al., 1998). This dimension of the quality of relationship is essential for long term gains. It is noteworthy that the partners are showing willingness towards focusing on the long term goals at the cost of short term goals (Mentzer et al., 2000). The result of building long-term relationships is towards perceived mutual benefits (Morgan and Hunt, 1994). Commitment is an indicator of the level of existence of a relationship in terms of continuation and break-down (Wilson and Vlosky, 1998). In addition, Anton et al (2007) said that reduction in commitment from the supplier influences the relationship between different parties have a negative impact on the willingness. Any business relationship between two supply chain entities, which is in continuum needs high degree of commitment to ensure the achievement of objectives of the supply chain system (Kwon and Suh, 2005). Commitment is positively and directly related to performance of partnering entities and the whole supply chain system (Prahinski and Benton, 2004).

Satisfaction

Satisfaction is another key factor which is essential for a strong relationship (Wilson and Jantrania, 1994). It is strongly connected with the fulfillment of needs and even analogous at times. (Naude´ and Buttle, 2000). It has strongly linkages with the overall supply chain performance. Satisfaction can be both economic as well as social which are both involved in business transactions. Satisfaction from the economic angle is all about the reaction towards economic benefits of the other players in the chain while satisfaction arising about of social aspects is mainly about gratification and issues pertaining to the exchange of information (Batt, 2004).

Overall Supply Chain Performance

The overall objective of the supply chain system is to make the system efficient thereby leading to improved performance. This is strongly present in the literature where in various aspects are discussed. The supply chain activities when linked with sourcing decisions and manufacturing goals reflect key supply chain performance indicators viz., cost, quality, dependability and flexibility (Narasimhan and Jayaram, 1998). These fours aspects are key to supply chain performance and they can be highly impacted by the strength of the relationship exhibited by the supply chain players. However, much of the literature on the quality of relationship has focussed on the marketing aspects (Morgan and Hunt, 1994).

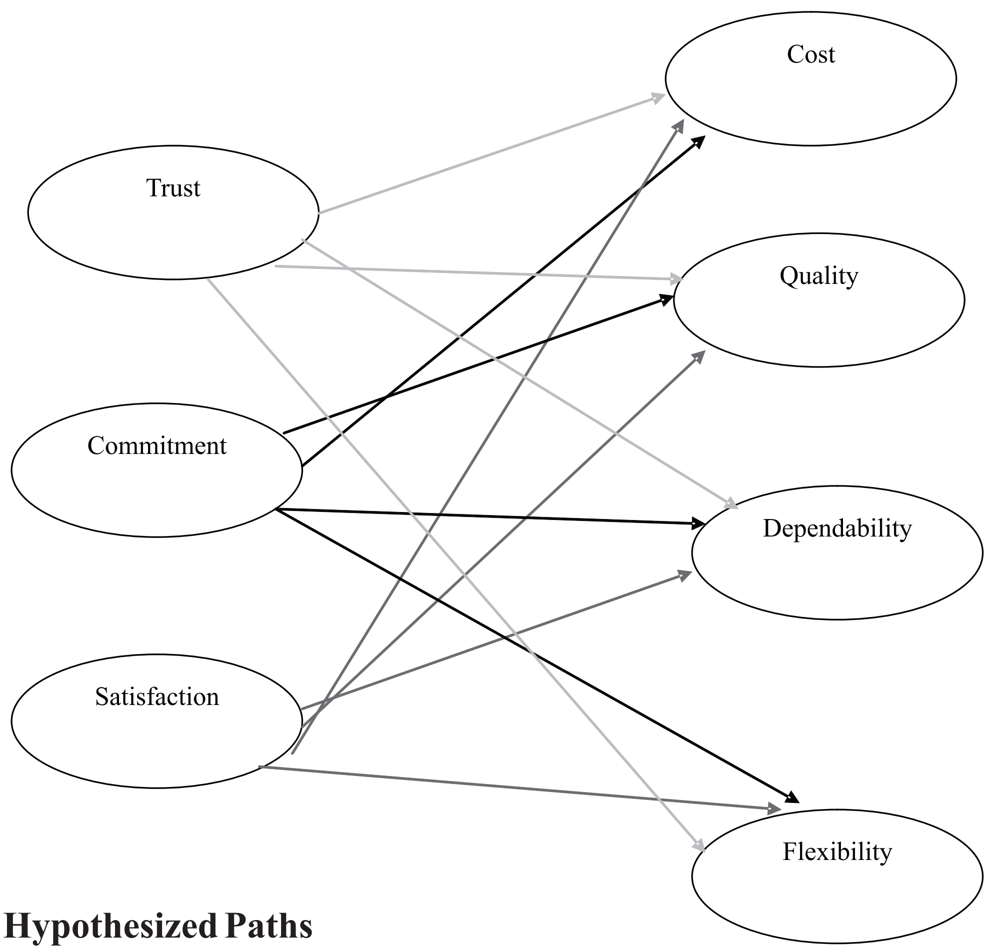

Figure 1: Hypothesized Paths

The impact of quality of relationship (in supply chain settings) on the overall supply chain performance has found limited attention in the extant literature especially in the Indian context. The study closest to the present work is that of Fynes et al (2005) who have attempted to the test this relationship however they have composition of the quality of relationship is differently envisaged by them. Hence, research on examining the impact of quality of relationship on supply chain performance in supply chain settings in India is a gap which strongly needs to be addressed.

Based on the review of the literature the following hypotheses are presented. These hypotheses consider the factors representing quality of relationships as independent. The factors key supply chain indicators are put as dependent constructs.

H1: Trust has a significant and positive impact on cost

H2: Trust has a significant and positive impact on quality

H3: Trust has a significant and positive impact on dependability

H4: Trust has a significant and positive impact on flexibility

H5: Commitment has a significant and positive impact on cost

H6: Commitment has a significant and positive impact on quality

H7: Commitment has a significant and positive impact on dependability

H8: Commitment has a significant and positive impact on flexibility

H9: Satisfaction has a significant and positive impact on cost

H10: Satisfaction has a significant and positive impact on quality

H11: Satisfaction has a significant and positive impact on dependability

H12: Satisfaction has a significant and positive impact on flexibility

Methods

Questionnaire

The present study involves data collection using structured questionnaires through personal interaction from the supply chain entities. The key objective is to test the impact of quality of relationship via trust, commitment and satisfaction on the supply chain performance factors. The scale items are taken from the various studies related to supply chain in different contexts. These include the works of Chu and Wag (2012) and Walter et al (2003) for Trust and Commitment while the research work by Fynes et al (2005) and Walter et al (2003) were referred for Satisfaction. The dependent constructs viz., are referred from the works of Voss and Blackmon (1994) for quality; Choi and Eboch (1998) for delivery; Fynes and Voss (2001) for cost and Dixon (1992) for flexibility. The scale items were refined based on the recommendations from the practitioners and researchers in the field of supply chain and operations. Post refinement the number of scale item for each construct were three which means 21 scale items in total.

Data Collection

Data is collected from the supply chain entities, which were providing full range of supply chain services including logistic services and operating in Delhi and National Capital Region. A total of 234 usable responses were received from a total of about 300 questionnaires which were administered. This was befitting to the research needs of the paper consideration the number of observed variables. For every observed variable a ratio of minimum ten responses was managed.

Data collected is analysed using structural equation modelling using AMOS software. The impact of quality of relationship factors (independent constructs) on supply chain performance (dependent constructs) is hence examined.

Analysis and Discussion

A confirmatory factor analysis was run involving all seven constructs. The analysis produced a good model fit with the following indices- ?2/df = 2.70, CFI= .943, RMSEA = 0.072. The observed variables loaded significantly on their corresponding latent constructs. In addition, the factors were valid based on the validity tests. These include three types of validity viz., face , convergent and discriminant. Since, the scale items were culled from the extant research, the face validity was confirmed. The factor loadings of the observed variables on the latent constructs were found significant. Also, the average variance extracted for all the latent constructs was found above 0.50. Hence, convergent validity was confirmed. The AVE was compared with the inter construct correlation to examine the discriminant validity. It was observed that the square root of AVE for all the constructs was greater than the inter-construct correlation. Hence, discriminant validity was ascertained.

Finally, SEM was used to test the aforementioned hypotheses. The analysis produced indices - ?2/df = 2.88, CFI= .936, RMSEA = 0.078 thereby suggesting an adequate model. The hypothesis results are presented in the following table. These are further elaborated in the following paragraphs.

Table 1: Hypotheses results

Hypotheses #	Independent Construct	Dependent Construct	Path Co-efficient	p-value	Results
H1	Trust	Cost		0.121	NS
H2	Trust	Quality		0.021	S
H3	Trust	Dependability		0.032	S
H4	Trust	Flexibility		0.033	S
H5	Commitment	Cost		0.015	NS
H6	Commitment	Quality		0.322	NS
H7	Commitment	Dependability		0.455	S
H8	Commitment	Flexibility		0.367	S
H9	Satisfaction	Cost		0.636	NS
H10	Satisfaction	Quality		0.001	NS
H11	Satisfaction	Dependability		0.004	S
H12	Satisfaction	Flexibility		0.009	S

Hypotheses # Independent Construct Dependent Construct Path Co-efficient p-value Results

H1 TrustCost0.121NS

H2 TrustQuality0.021S

H3 TrustDependability0.032S

H4 TrustFlexibility0.033S

H5 CommitmentCost0.015NS

H6 CommitmentQuality0.322NS

H7 CommitmentDependability0.455S

H8 CommitmentFlexibility0.367S

H9 SatisfactionCost0.636NS

H10 SatisfactionQuality0.001NS

H11 SatisfactionDependability0.004S

H12 SatisfactionFlexibility0.009S

*NS means Not Significant, S means Significant

H1 - Impact of trust on cost

The impact of trust on cost is not significant. It implies that cost may not necessarily reduce due to the impact of trust. Trust may bring transparency in sharing the cost structure to an extent in fair proportion but this may or may not bring improvement in cost. Reduction and cost control are the phenomenon whereby mutual exercise being done between the two supply chain actors over a period of time. Trust acts as the external factor in bringing the required level of transparency in sharing data with the supply chain members.

H2- Impact of trust on quality

The impact of trust on quality is significant. It implies the fact that product as well as service quality among the supply chain member improves with trust playing the important role. The adherence to the systems and standard operating procedures will improve gradually with trust as the central factor. Quality entails establishing specifications and adhering to the uniform industry standards all the way through the supply chain and for this trust plays an important factor among all the supply chain partners. Trust therefore plays a vital role in positively influencing the quality of service.

H3- Impact of trust on dependability

The impact of trust on dependability is significant. Trust among the supply chain partners results in the improvement of dependability among the partners. Dependability entrust the factor of sharing and collaboration of information, practices and services among the partners. The approaches like quick response (QR) and efficient customer response (ECR) cannot be implemented and achieved until the dependability among the partners exists. Agility and responsive supply chain can be developed only after dependability among the partners can be improved.

H4- Impact of trust on flexibility

The impact of trust on flexibility is significant. Agility and flexibility advance with trust among the supply chain members and partners. Flexibility is termed as quick response of supply chains to short term changes in supply and demand. Reduction in the length of supply chains to bring flexibility can be commended in the supply chain only by instilling trust among the partners and collaborators of the supply chains. Trust plays vital role in instilling better relationship among the members of the supply chain which in turn improve collaboration and transparency in all vital organs of supply chain. Flexibility comes by reducing the overlapping, unwanted activities along the chain.

H5- Impact of commitment on cost

The impact of commitment on cost is not significant. This howsoever does not mean that it's completely insignificant but it rules out any direct impact of commitment in the improvement of cost towards reduction or control. Commitment ruefully support the issues related to cost which remains partially or fully undisclosed strategic information. Thus sharing of extrinsic details may improve but mutual agreement on reduction of intrinsic information takes loads of time to really pursue.

H6- Impact of commitment on quality

The impact of commitment on quality is not significant. But it does not explicitly counter the truth that quality has not relation with commitment. Study establishes the reason that commitment may not directly impact the outcome in terms of commonly accepted norms due to involvement of resourcefulness in terms of geographic, demographic and economic stretch and spread. This makes uniform quality achievement throughout the supply chain complex. A mix of quality will exist and flow through the chain where service and product quality measurement may vary unequivocally.

H7- Impact of commitment on dependability

The impact of commitment on dependability is significant. Dependability improves with commitment and agreement embryonic among the supply chain partners. Coordination and collaboration like terms for sharing information and transfer of data among the supply chain actors largely depends upon the degree of commitment among all the members of supply chain. This factor can be considered as central to the any responsive, agile supply chains.

H8- Impact of commitment on flexibility

The impact of commitment on flexibility is significant. Supply chains with encouraging level of commitment among the members will have better flexibility. Flexible supply chain's response to demand and product related changes will be rapid and spontaneous. Commitment commune the shared interest among the partners for all the information and business sustainability related factors. It also improvises the governance of the supply chain in term of adoption technological developments and control, defining demand and business periphery and control etc.

H9- Impact of satisfaction on cost

The impact of satisfaction on cost is not significant. There is no direct connotation satisfaction have with cost, howsoever there can be few instances when they may show a petite affinity between the two. Cost is considered more tangible when compared to satisfaction, which is more behavioural in nature. The factors measuring the variables i.e. cost and satisfaction doesn't show any significant relation between the two.

H10 - Impact of satisfaction on quality

The impact of satisfaction on quality is not significant. Satisfaction is more a relative term, whereas quality has its tangible measuring variables. Satisfaction connotes delivery of quality in term of product and service where satisfaction is non-quantifiable. The second level of demand in the supply chain and its responsive action do confirm existence of satisfaction among the supply chain actors. This may have evolved over the several factors including profit, sharing of information, related party transactions and quality as well.

H11- Impact of satisfaction on dependability

The impact of satisfaction on dependability is significant. Dependability improves with degree of satisfaction among the partners in supply chain and vice-versa. The measurable impact in terms of financial norms e.g. ROA, ROI and ITR insinuate satisfaction by the flow and speed of inventory in the chain.

H12- Impact of satisfaction on flexibility

The impact of satisfaction on flexibility is significant. The result shows that satisfaction improvises the behaviour of members towards collaboration based on trust, warmth and sharing. Flexibility needs co-adherence to all the predefined rules and procedures of operations in supply chain environment. Satisfaction which transpire as the result of several factors, behavioural and material , improves the degree of transparency and sharing among the members towards. Instil of collaborative behaviour and resultant flexibility is an outcome of satisfaction.

Discussion and Implications

The results of analysis are useful in developing an understanding about the influence of the quality factors on overall supply chain performance. The impact of possible influence of each factor on the supply chain performance factors is tested for its significance. Specifically, the relationship between trust, commitment and satisfaction (independent constructs) and overall supply chain performance factors viz., quality, delivery, cost and flexibility (dependent constructs) is examined for significance.

The results are useful in terms of its implications for the supply chain managers and the parties involved focusing on specific factors of quality of relationship based on their pre-defined performance objectives related to supply chain performance. The detailed implications are provided in the following paragraphs.

The cost factor is the only performance factor which is not influenced by any of the quality factors. This suggests that the cost management is not dependent of any of these factors and hence metric factors shall be considered to manage the cost rather than working on behaviour related factors.

Quality is only influenced by trust. Trust is the most important factor pertaining to the relationships. Although quality is a metric factor but inspecting quality in overall delivery process and adherence to industry standards in difficult to verify by sampling. The defects are usually observed in later stages during audit or otherwise. Therefore, high level of the trust with the external party ensures high quality.

Dependability is significantly influenced by all three viz., trust, commitment and satisfaction. The dependability is created when the partners trust each other. It is also created when the commitment is followed to complete a given task in time. The satisfaction level is based on previous encounters which is an indicator of continuance of relationships. Hence, longer the relationship higher is its dependability. Hence, the supply chain service providers should ensure that the quality of relationship should be considered from the point of view of maintaining long term relationships which is an indicator of higher returns in the long run with lesser efforts. This learning is similar to that of customer relationship and it is far more critical in business to business settings as losing acquiring a new customer is far more difficult than maintaining an existing one.

The results pertaining to the influencers of flexibility are same as those of dependability. Flexibility means how the logistics service provider is able to make changes in the service process or otherwise. In this case they may be able to reduce the supply chain length or make other necessary changes in terms of technology usage, etc. In short, to ensure flexibility via quality of relationship factors the focus on adjustments should be made. For this the trust factor or the belief in the partner that they will make necessary changes in their system to fit the requirements would be incorporated. The commitment for such changes should be honored. Satisfaction is related to fulfillment of expectation which can also results into highly flexible systems.

Hence, focusing on the three quality of relationship factors is necessary to improve overall performance of supply chain system. These can be considered from the objective of gaining on specific performance factor related objectives.

Conclusions, Limitations and Scope for further research

The present study provides useful insights by considering the impact of quality of relationship factors on supply chain performance factors. There are several studies which include research on quality of relationships and the overall supply chain performance but separately. The joint researches on the two main aspects have found limited attention in the literature. Hence, this study is attempting to bridge the void in the extant literature. The study will be useful for both academia and industry based on its ability to highlight a key area which is deeply rooted in the Indian culture which is based on building and maintaining lasting relationships.

However, the study is limited in terms of geographical focus which is Delhi and NCR in India. Indian businesses are highly diverse, just like its cultures, and hence the results cannot be generalized based on the present research. Hence, research on different regions can provide different results and hence unique insights can be drawn. In addition, the factors considered in the study are measured using a 7-point Likert scale which is based on perceptions of the respondents. The actual outcome for certain factors viz., cost cannot be ascertained in monetary or percentage terms. In addition, the measurement of the variables is not separated out based on buyer or seller perspective which can also provide useful inference for both academia and practice.

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ANALYSING IMPORTANCE OF PROJECT LIFE CYCLE MANAGEMENT IN CONSTRUCTION INDUSTRY

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Abstract

"The life cycle is the only thing that uniquely distinguishes projects from non-projects."

Mr. M.B. Patel & Prof. P.G. W. Morris

Construction industry is the largest industry in the world and growth in this industry in fact is an indicator of the economic conditions of a country. Further, it is expected to grow more over the next decade with the quest for urbanization, globalization, infrastructure renewal and the construction of 'Megacities'- an emerging concept. According to "Global Construction 2020" report published by Global Construction Perspectives and Oxford Economics the emerging markets is expected to double within a decade, accounting for some 55 percent of global construction output. This article aims to provide a comprehensive introduction to Project life cycle management which may be viewed as a process through which a project is successfully implemented from beginning to end.

Keywords: Construction, Industry, global, Project life cycle, Management, Cost, time

1. Introduction

The Construction industry is the largest contributor to Gross Domestic Product in an economy and therefore, plays a major role in economic development of a country. Further, it is expected to grow more over the next decade with the quest for urbanization, globalization, infrastructure renewal and the construction of 'Megacities'- an emerging concept. According to "Global Construction 2020" report published by Global Construction Perspectives and Oxford Economics the emerging markets is expected to double within a decade, accounting for some 55 percent of global construction output. As per Accenture survey report, India will be the third largest by 2018, just behind the United States (second) and China (first) based on ongoing program of urban renewal, energy and transport development in the country.

The construction industry functions in both private and public sectors dealing mainly with three broad areas- Residential, Non residential and Engineering Projects. The demand and supply of the

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aforesaid depends on economic factors (including population growth and consumer confidence), changes in interest rates, inflation and also on availability of resources (labour, building materials etc.). It has been seen that majority of the projects in construction industry exhibits cost overruns than the estimated cost, time extensions, and conflicts among parties at the end. Looking into the facts, intensive planning is essential for achievement of predetermined objectives which can be done by Project Life cycle management. Project life cycle management which can be viewed as a process through which a project is successfully implemented from beginning to end.

2. Project Life Cycle

Project Life cycle management has been employed in construction industries since long time for reduction in whole life cost, timely completion of the project, reducing risk and also for developing cordial relation with the owner by providing good services. More than 2500 years ago, Confucius, the renowned Chinese Philosopher has stated that "In all things, success depends upon previous preparation and without such preparation there is sure to be failure". Now this is translated as a two step sequence- Plan before doing which shows genesis of Project Life Span.

A project comprises of various phases that forms its life cycle; in earlier times of modern project management techniques each phase was planned, scheduled, and managed as a separate project right from its inception to its completion. On its completion, the next phase was taken up by a new project manager as a separate project which leads to various confusions connected with the early phase such as unresolved problems of design in early phase etc. The field project manager of a new process plant, for example, had to solve the problems during that construction phase that should have been solved during the design phase. As the project management discipline matured it was recognized that overlapping these phases when practical will save a considerable amount of time and money, and assuring that one project manager maintains responsibility for the entire project life cycle forced the resolution of conflicts as early as possible in the project life cycle.

3. Project Life Cycle Phases

The project team and manager have a common goal to meet the project's objective by carrying out work in a proper managed and rational way. Project Life Cycle provides comprehensive introduction to

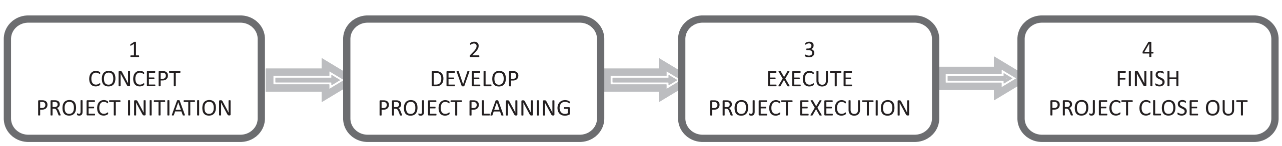


Figure : Phases in Project Life Cycle Management

Project initiation	Project Planning	Project execution	Project Close out
At this phase, the project objective is identified. Solutions to attain objectives are worked out. Feasibility study is conducted for each solution and a final recommended solution is determined. After this the project manager is appointed. The major deliverables and the participating work groups are identified, and the project team begins to take shape. Approval is then sought by the project manager to move onto the detailed planning phase.	In this phase the project solution is worked out in detail along with the steps necessary to attain project's objectives. The project's tasks and resource requirements are identified. The project manager coordinates the preparation of a project budget by providing cost estimates for the labor, equipment, and materials costs. After this it is the time to identify and try to deal with anything that might pose a threat to the successful completion of the project. Finally, a quality plan is made which is ready for execution providing quality targets, assurance, and control measures, along with an acceptance plan, listing the criteria to be met to gain owners acceptance	During this phase, the plan is put into motion. Progress is continuously monitored and appropriate adjustments are made and recorded if required to the original plan. A project manager spends most of the time in this step. The project manager uses information of team meetings held at regular intervals to maintain control over the direction of the project by comparing the progress reports with the project plan to measure the performance of the project activities and take corrective action as needed. Throughout this step, project sponsors and other key stakeholders should be kept informed of the project's status for avoiding conflicts. The plan should be updated and published on a regular basis.	During the final or completion phase, the emphasis is on releasing the output to the owner, handing over project documentation, terminating supplier contracts, releasing project resources, and communicating the closure of the project to all stakeholders. The last remaining step is to examine what went well and what didn't as through this type of analysis, the wisdom of experience is transferred back to the project organization, which will help future project teams in avoiding difficulties faced during execution of the project by them.

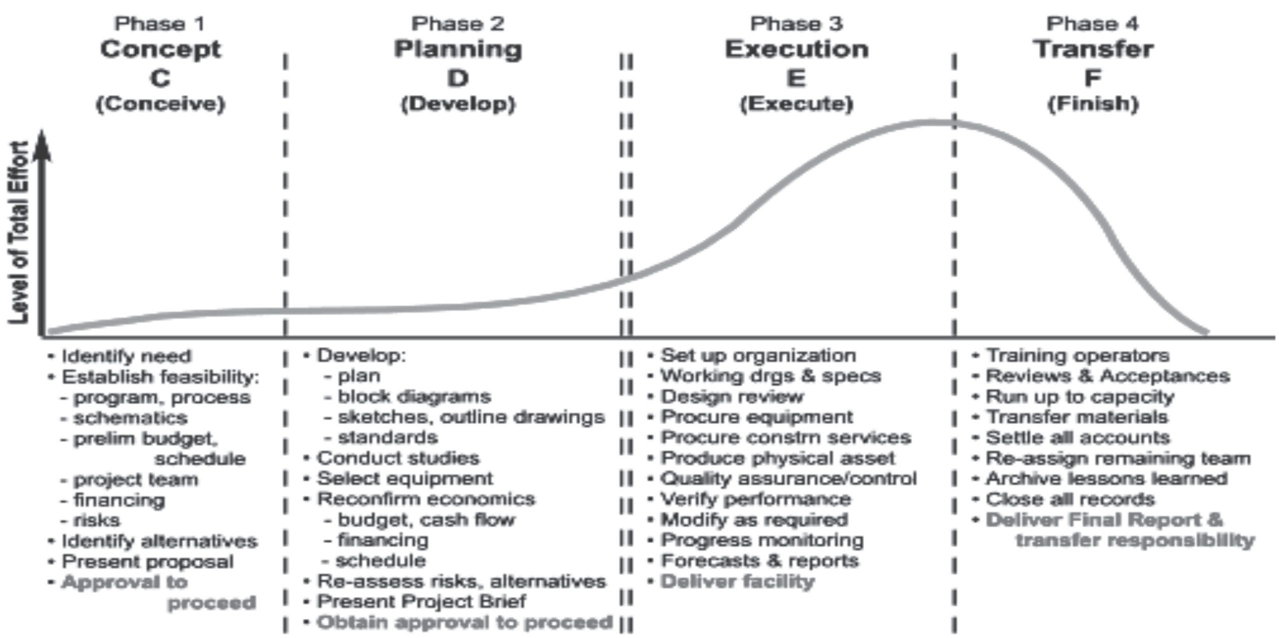
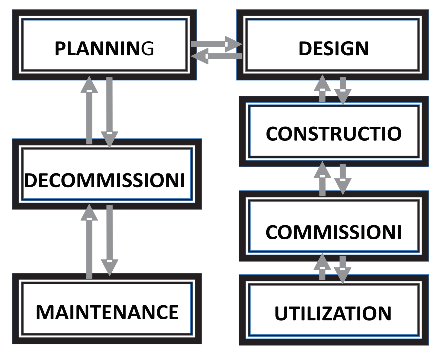


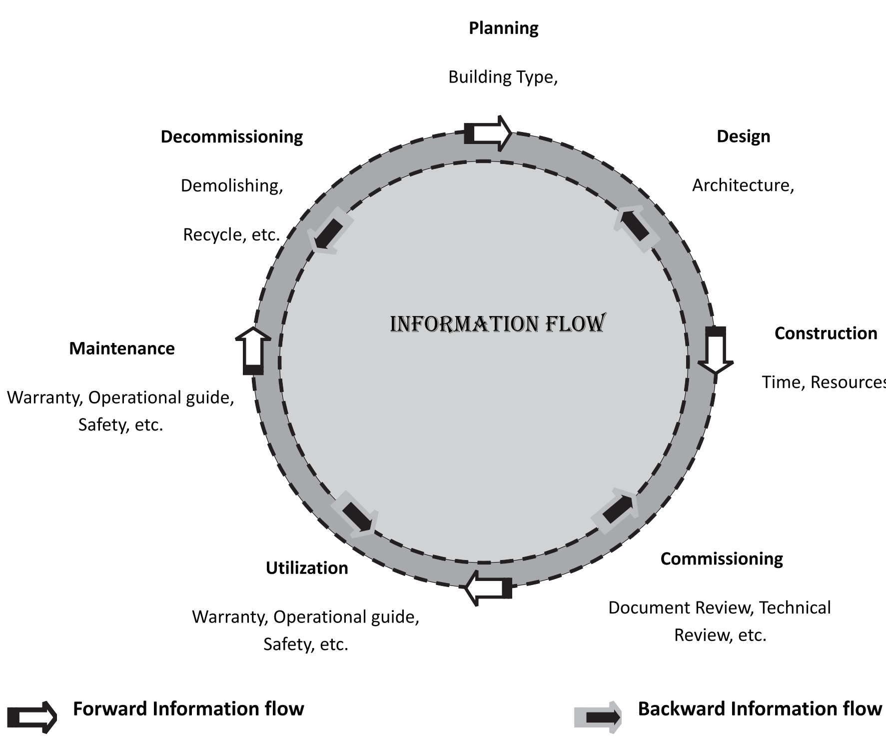
Figure 2 Life Cycle Management Phase Details

Source: www.maxwideman.com



The implication of Life Cycle Management in construction projects can be well understood by the diagram given which defines clearly that Planning includes conception of design, preliminary evaluation, etc. design involves initial design and detail design, utilization refers to the owners' or tenants' use or operation of buildings, and decommissioning consists of demolition and recycle of buildings or material.

Therefore LCM can be defined as managing all the processes involved in a project starting from planning, design, and construction to the commissioning, utilization, maintenance, and otherwise decommissioning of the project. Therefore, its information flows should therefore involve information concerning all these phases which should include information related to planning, design, construction, commissioning, utilization, maintenance and decommissioning. The information flow has both a forward influence and a backward impact, that is, the information of a phase both influences, and is influenced by, its successive phases. When a decision is made, its impact on predecessors or successors, even the whole life cycle, must be taken into account.



Conclusion

For achieving sustainability and energy efficiency, it is very good to get complete and proper information before preceding any project because it will save your time, money, energy, reduces the waste and also provides simplicity in the project. The guidelines of Project management help the organization to do multiple projects simultaneously and also to manage them in a competent way by incorporating its policies and techniques which in overall proof to be effective. Once Project LCM is made and discussed, it makes easy to understand the essence of the design process and design problems and how it affects the work progress in the construction Projects. Stages of the design have to be achieved for good management together with meeting the Client's requirements and Project build activity. LCM has been a needed feature of the construction industry for many years, but has not been successful in its application as yet. Therefore, further efforts should be done to make it possible to address the shortcomings of LCM currently used and incorporate changes as per construction industry demand.

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JUVENILE DELINQUENCY:
A CAUSAL FRAMEWORK AMONG FACTORS CONTRIBUTING TO IT

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Abstract:

The children of today are future of tomorrow. In India children ageing 0-14 years comprise one third of the total population of country. Every child having conducive and enabling environment can blossom every sphere of life. The journey however involves components like child survival, child development, and child protection; but for sure need a safe and non-discriminatory environment. The study here aimed at understanding causes of juvenile delinquency and helps to find the measures required for the positive development of the child in conflict with law.

The objective here is to provide a causal framework regarding various factors contributing towards juvenile delinquency like poverty, literacy, employability etc. The study attempts to find relationship among various factors with the help of correlation analysis. A linear regression model has been developed to found the impact of factors on juvenile delinquency. On SPSS, Analysis of Variance (ANOVA) technique has been used to check various hypotheses regarding associability among all factors.

Keywords: Juvenile, Delinquency, Recreation, Basic Needs, Criminal activities.

1. Introduction

The word juvenile has been derived from the Latin term juvenis, which means young and etymologically, and the word delinquency has been derived from the Latin word delinquer which means to omit. In the year 1484, William Coxton used the word delinquent to describe a person who was found guilty. Juvenile delinquency refers to the involvement by the teenagers in an unlawful behaviour who is usually under the age of 18 and commits an act which would be considered as a crime. A child is known as a delinquent when he/she commits a mistake which is against the law and which is not accepted by the society. Thus a "juvenile" or "child" means a person who has not completed eighteenth years of age and violates the law and commits an offence under the legal age of maturity.

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Juvenile delinquent is a minor taking part in any act that is prohibited by Indian Penal Code, local or special Act(s) or violates any institutional code of conduct. Juvenile Delinquency is a result of various social, economic and emotional factors.

Innocence and childhood are so inseparably allied in our minds that a child criminal would appear to us a contradiction in terms. It is perhaps the inherent resistance to mind to associate criminality with the childhood that has led to coining of the term: "Juvenile delinquency" where "Child crime" has been done; but common sense should tell us that if circumstances and environment make an adult criminal so might a child as well.

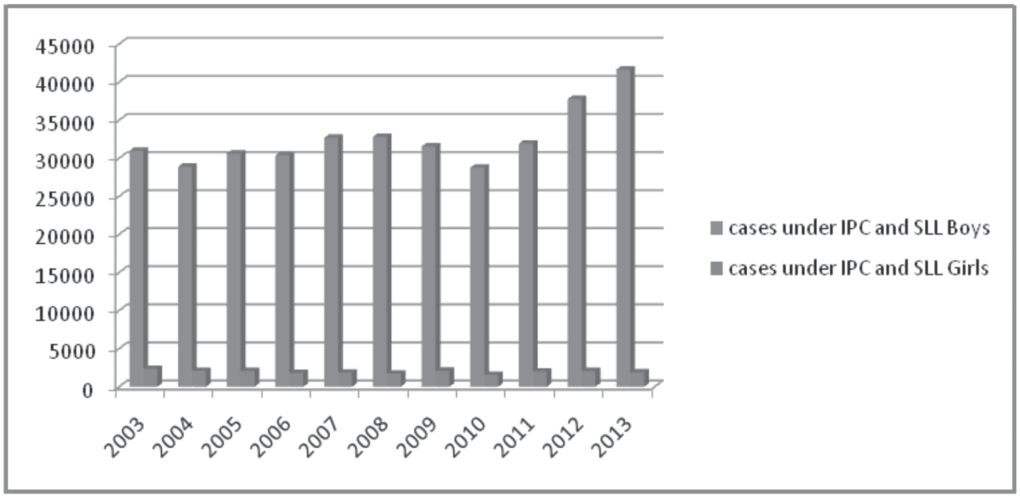
Children constitute about 40% of India's population and India. Even so majority of India's children continue to be in difficult circumstances. India has signed the UN Convention on the Rights of the Child and obligated itself to work towards ensuring all the rights enshrined therein to all its children. India has witnessed an increase both in crimes committed by children and those committed against them. There has been 97.9% increase in crimes committed by children between 2003 and 2004, with more children being appeared for arson, theft and cheating.

Over 33,000 juveniles, mostly between the age group of 16 to 18, have been arrested for crimes like rape and murder across Indian states in 2011, the highest in last decade. According to a Home Ministry data, of the total of 33,387 juveniles apprehended in 2011, 21,657 were in the 16-18 age groups, 11,019 of 12-16 age group and 1,211 between 7-12 age group (PTI, 2013).Whereas, 32,145 such youngsters below 18 years of age were held in 2006, 34,527 in 2007, 34,507 in 2008, 33,642 in 2009 and 30,303 during 2010, the data said. The data also shows increasing cases of rape by juveniles. As many as 1,419 such cases were recorded in 2011 as compared to 399 cases in 2001 according to data.

Note: Boys and girls below 18 years have been taken as juveniles according to new definition of Juvenile Justice (Care and Protection of Children) Act 2000 w.e.f. year 2001.

The figure below shows the total number cases being registered under IPC (Indian Penal Code) and special Act(s) SLL within various years on the basis of categorisation of sex; and it is very dominant that the number of boys is comparatively on higher side than girls.

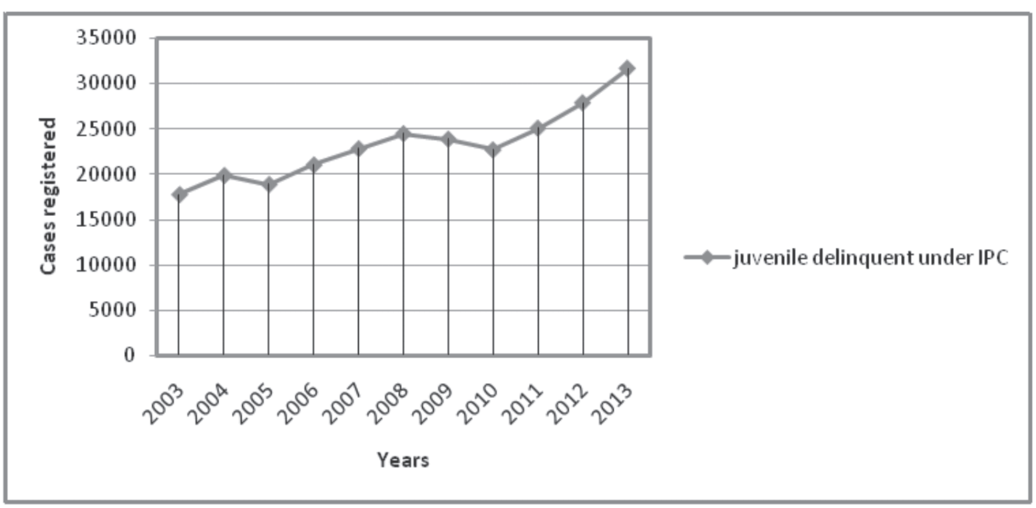
Figure 1:



Source: Crime in India 2013 - Compendium, National Crime Record Bureau, Ministry of Home Affairs.

It is pertinent to mention that a juvenile and five others were arrested by Delhi Police for brutally raping and assaulting a 23-year-old girl in the national capital on December 16, 2012. The victim later succumbed to her injuries. 3The cases of murder by juveniles have also shown a surge in last ten years. As many as 531 youngsters below the age of 18 were apprehended for murder in 2001 as against 888 arrests between January and December 2011. According to the data, 6,770 juveniles were arrested in Maharashtra, 5,794 in Madhya Pradesh, 2,692 in Chhattisgarh, 2,542 in Rajasthan and 2,510 in Gujarat among others in 2011. In the same year, a total of 2,474 adolescents were arrested in Andhra Pradesh, 2,083 in Tamil Nadu, 1,204 in Uttar Pradesh and 1,126 in Bihar, the data said.

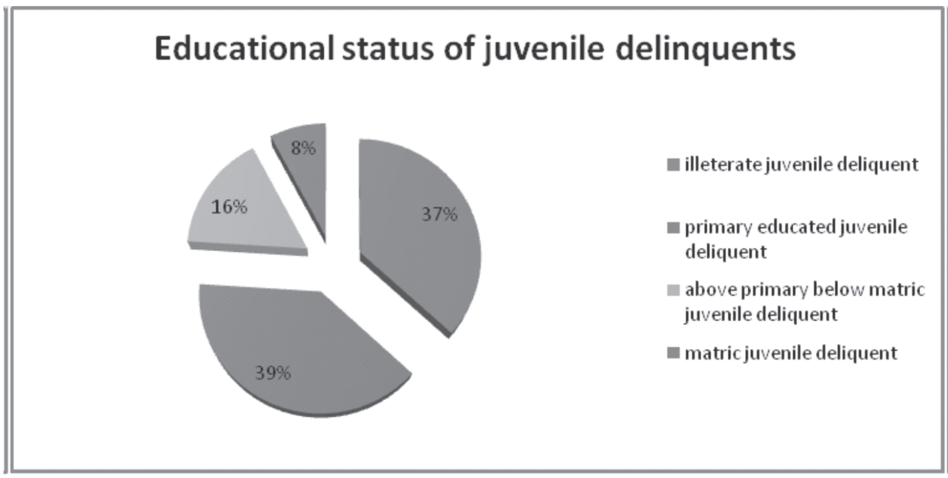
Figure 2:



Source: Crime in India 2013 - Compendium, National Crime Record Bureau, Ministry of Home Affairs.

Out of the total number of juveniles arrested in 2011 under different sections of IPC and Special and Local Laws (SLL), 6,122 were illiterate, 12,803 were primary pass outs, 10,519 were above primary and below matriculation qualified and 4,443 were metric and higher secondary qualified, the data said. A total of 27,577 juveniles, who were held for criminal acts, were living with parents, 4,386 were living with guardians and 1,924 were homeless, the data below gives details of their educational background.

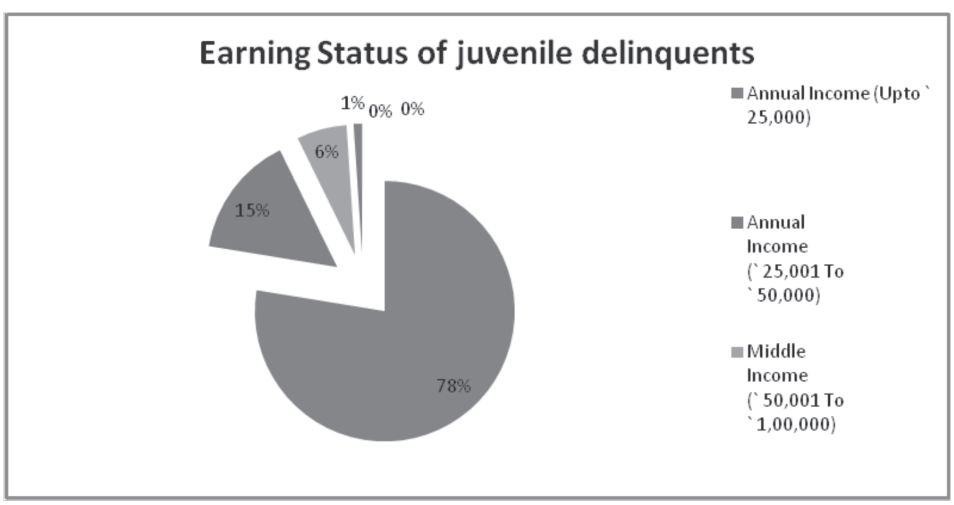
Figure 3:



Source: Crime in India 2011 Statistics, National Crime Record Bureau, Ministry of Home Affairs.

Also the study on economic status of juvenile delinquents shows that the maximum number is from the families having overall annual income up to Rs. 25000 only. The figure below shows the absolute statistics.

Figure 4:



Source: Crime in India 2011 Statistics, National Crime Record Bureau, Ministry of Home Affairs.

The data above shows that there are various factors that are contributing towards juvenile's delinquency and therefore, it is imperative to understand the concept of juvenile delinquency and delineate the conditions giving rise to high rates of crimes and conflicts with law.

2. Review Literature:

- An analysis done by Fagan AA, Najman JM on Sibling influences on adolescent delinquent behaviour showed strong association between siblings' delinquency and the relationship with adolescent. The effect varies according to the sex composition of the sibling pair and is stronger for males and those whose parent shaves had been arrested.
- A study done by Donnellan MB, Trzesniewski KH, Robins RW on Low self-esteem is relation to aggression, antisocial behavior, and delinquency explored the controversial link between global self- esteem and externalizing problems such as aggression, antisocial behaviour, and delinquency. This relation held for measures of self-esteem and externalizing problems based on self-report, teachers' and parents ratings, and for participants from different nationalities and age groups.
- Kupersmidt and Dodge (2004) maintain that there are two extreme hypotheses which specify the different roles of peers in developing the aggressive and antisocial behaviour of a delinquent child, and there are some individual characteristics which give rise to delinquency among children.
- Butts et al (2005) emphasized the role of communities which helps in the positive development of children which is known as Community Youth Development (CYD). The search institute has considered some factors through which a positive youth development in a juvenile can be achieved i.e. through individual and contextual factors that helps the youth to avoid the harmful behaviour and keep them engaged in some activities that promotes to positive development within them. Another study which is done by Richard and Lerner and his colleagues, emphasizes on the interactions between individuals such as family, school, and community.
- A comparative study was conducted by Torentte G, Vazsonyi AT, on salience of the family in antisocial and delinquent behaviours, and findings revealed similarities in the relations between parenting processes and both measures of deviant behaviour. The results also demonstrated the need for researchers to consider the parenting effects of mothers and fathers independently.
- A research done by Schroeder R D, Osgood AK, Oghia MJ on Family transition and delinquency from non-intact homes show higher rates of juvenile delinquency than children from intact homes, Researcher assesses the effect of family structure changes on changes in delinquent offending

between waves through the intermediate process of changes in family time and parental attachment. Research has documented adolescents in broken homes are more delinquent than youth in intact homes.

- A study was conducted by Matsumoto Sutsumi A, lzutsu. T. Imamura on prevalence of suicidal behaviour and sexual abuse history in delinquent and non-delinquent adolescents. Samples were adolescents aged 15-17 years. Results showed that delinquent adolescents, particularly girls, more frequently reported histories of suicidal behaviour and sexual abuse than non-delinquent adolescents.
- A comparative study was conducted by Rhucharoen Pompanich O, Chamratrithrong A. Fong Kaew on parenting practices and the reported sexual and delinquent behaviours among adolescents, by focusing on the difference between sons and daughters. Samples were from 420 families whose adolescents aged 13-14. It was found that there were no gender differences in the reported sexual and delinquent behaviours among adolescents.
- Children with strong social bond will commit less crime than those who have weak social bond (Hirschi, 1969). Hirschi, states that what prevents individuals from acting upon internal motivations to commit crime is informal social control which results from the development of social bonds through the process of socialization.
- Harvey and Fine (2004) studied that the children who had emotions of anger inside them led to the opposite end of the law and this was found in the case of the children whose parents were divorced. This occurred because these children needed proper care from their parents which was lacking.

3. Objectives Of Study:

1) To examine nature and status of juvenile delinquency in India.
2) To examine the major reasons contributing towards criminal attribute of children in India.
3) To analyze the factors affecting juvenile delinquency in India.
4) To examine the association between factors (if any); those are related to juvenile delinquency.

4. Research Methodology

4.1 Research Design: Experimental research design has been used in order to establish a causal relationship among various variables where certain variables act as causes (independent) and other act as effect (dependent). The relationship model is being developed and the analysis is done with the help of hypotheses testing.

4.2 Sampling Design:

4.2.1 Sample Size: 24; the sample comprising of secondary data taken from 24 major highly populated states of India for the year 2011.

4.2.2 Sampling Technique: Random convenience sampling technique is used, where the data has equal chances of selection into the sample, but as per convenience of data availability.

4.3 Data Collection: The data is collected from secondary sources; that is from the official websites of government of India.

4.4 Hypotheses Used:

Following hypotheses are drawn in order to check association between juvenile delinquency and factors associated to it, four null hypotheses are formulated for the same:

H0: There is negative association between juvenile delinquency and family income.

H0: There is negative association between juvenile delinquency and literacy.

H0: There is positive association between juvenile delinquency and unemployment.

H0: There is positive association between juvenile delinquency and poverty.

5. Analysis And Interpretation:

Various variables are used in the study for analysis purpose. Their notations are as follows:

1. Crime: Juvenile Delinquency cases registered
2. Pov_rual: rural poverty
3. Pov_urban: urban poverty
4. Pov_total: rural plus urban poverty
5. Unemp_rural: rural unemployment
6. Unemp_urban: urban unemployment
7. Unemp_total: total unemployment
8. literate_total: total literates
9. literate_male: male literates
10. literate_female: female literates

Table 1

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
income	24	13632.00	108876.00	42618.0000	23751.85878
pov_rural	24	370000.00	479350000.00	89326666.6667	112834305.16996
pov_urban	24	60000.00	118840000.00	21759583.3333	25458176.18372
pov_total	24	510000.00	598190000.00	111087916.6667	136309711.54209
unemp_rural	24	28561.34	18477225.39	4844739.8019	5495756.98349
unemp_urban	24	75353.31	13750421.91	3641375.4174	3460104.17635
unemp_total	24	38284.34	17439179.02	4657717.2248	5063717.20227
literate_total	24	449294.00	118423805.00	32008175.1667	28626392.16531
literate_male	24	253364.00	70479196.00	18275114.2917	16664205.68726
literate_female	24	195930.00	47944609.00	13733060.8750	12040901.29754
Valid N (listwise)	24				

The above descriptive table shows the mean value as well as variance of all the variables under study.

- It shows that on an average approximately Rs. 42,618 is found as the average earnings per person in 2011 overall India.
- Average literates number is found as 32,008,175, for the year 2011; out of which average female literates are only 13,733,060.
- Average number of unemployed is approximately 4,657,717 whereas average number of persons below poverty line is found to be around 1, 11,087,916 for the year 2011.

Table 2

Correlations

		crime	income	pov_rural	pov_urban	pov_total	unemp_rural	unemp_urban	unemp_total	literate_total	literate_male	literate_female
crime	Pearson Correlation	**1**	**-.034**	**.177**	**.239**	**.191**	**.180**	**.575****	**.249**	**.503***	**.497***	**.510***
	Sig. (2-tailed)		.874	.407	.261	.370	.400	.003	.242	.012	.014	.011
	N	24	24	24	24	24	24	24	24	24	24	24
income	Pearson Correlation	.034	1	-.302	-.075	-.264	-.470*	-.372	-.487*	-.294	-.311	-.268
	Sig. (2-tailed)	.874		.151	.727	.212	.020	.074	.016	.163	.139	.205
	N	24	24	24	24	24	24	24	24	24	24	24
pov_rural	Pearson Correlation	.177	-.302	1	.905**	.997**	.255	.140	.269	.121	.126	.113
	Sig. (2-tailed)	.407	.151		.000	.000	.229	.515	.203	.573	.557	.599
	N	24	24	24	24	24	24	24	24	24	24	24
pov_urban	Pearson Correlation	.239	-.075	.905**	1	.936**	.102	.109	.111	.151	.144	.160
	Sig. (2-tailed)	.261	.727	.000		.000	.634	.612	.605	.482	.503	.456
	N	24	24	24	24	24	24	24	24	24	24	24
pov_total	Pearson Correlation	.191	-.264	.997**	.936**	1	.230	.136	.244	.128	.131	.123
	Sig. (2-tailed)	.370	.212	.000	.000		.279	.526	.251	.550	.541	.566
	N	24	24	24	24	24	24	24	24	24	24	24
unemp_rural	Pearson Correlation	.180	-.470*	.255	.102	.230	1	.680**	.992**	.718**	.739**	.683**
	Sig. (2-tailed)	.400	.020	.229	.634	.279		.000	.000	.000	.000	.000
	N	24	24	24	24	24	24	24	24	24	24	24
unemp_urban	Pearson Correlation	.575	-.372	.140	.109	.136	.680**	1	.746**	.904**	.911**	.888**
	Sig. (2-tailed)	.003	.074	.515	.612	.526	.000		.000	.000	.000	.000
	N	24	24	24	24	24	24	24	24	24	24	24
unemp_total	Pearson Correlation	.249	-.487*	.269	.111	.244	.992**	.746**	1	.757**	.778**	.721**
	Sig. (2-tailed)	.242	.016	.203	.605	.251	.000	.000		.000	.000	.000
	N	24	24	24	24	24	24	24	24	24	24	24
literate_total	Pearson Correlation	.503*	-.294	.121	.151	.128	.718**	.904**	.757**	1	.998**	.996**
	Sig. (2-tailed)	.012	.163	.573	.482	.550	.000	.000	.000		.000	.000
	N	24	24	24	24	24	24	24	24	24	24	24
literate_male	Pearson Correlation	.497*	-.311	.126	.144	.131	.739**	.911**	.778**	.998**	1	.989**
	Sig. (2-tailed)	.014	.139	.557	.503	.541	.000	.000	.000	.000		.000
	N	24	24	24	24	24	24	24	24	24	24	24
literate_female	Pearson Correlation	.510*	-.268	.113	.160	.123	.683**	.888**	.721**	.996**	.989**	1
	Sig. (2-tailed)	.011	.205	.599	.456	.566	.000	.000	.000	.000	.000	
	N	24	24	24	24	24	24	24	24	24	24	24

- The above table shows the value of coefficient of correlation among all the variables under study; and it is found that family income is negatively correlated with juvenile delinquency, which shows that if earning is less the level of crime is high and vice versa.
- Also Unemployment shows a positive relationship with juvenile delinquency, which explains that higher the unemployment; higher is the level of crime among children.
- Poverty also shows a positive relationship with juvenile delinquency, which explains that higher the poverty; higher is the level of juvenile delinquency.
- Literacy however on the contrary to assumption is positively correlated with juvenile delinquency means that higher literate children are more engaged in crimes.

Table 3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-75.332	1020.732		-.074	.942
	income	.006	.016	.078	.355	.726
	pov_total	2.510E-006	.000	.196	.994	.333
	unemp_total	.000	.000	-.328	-1.026	.318
	literate_total	4.579E-005	.000	.750	2.584	.018

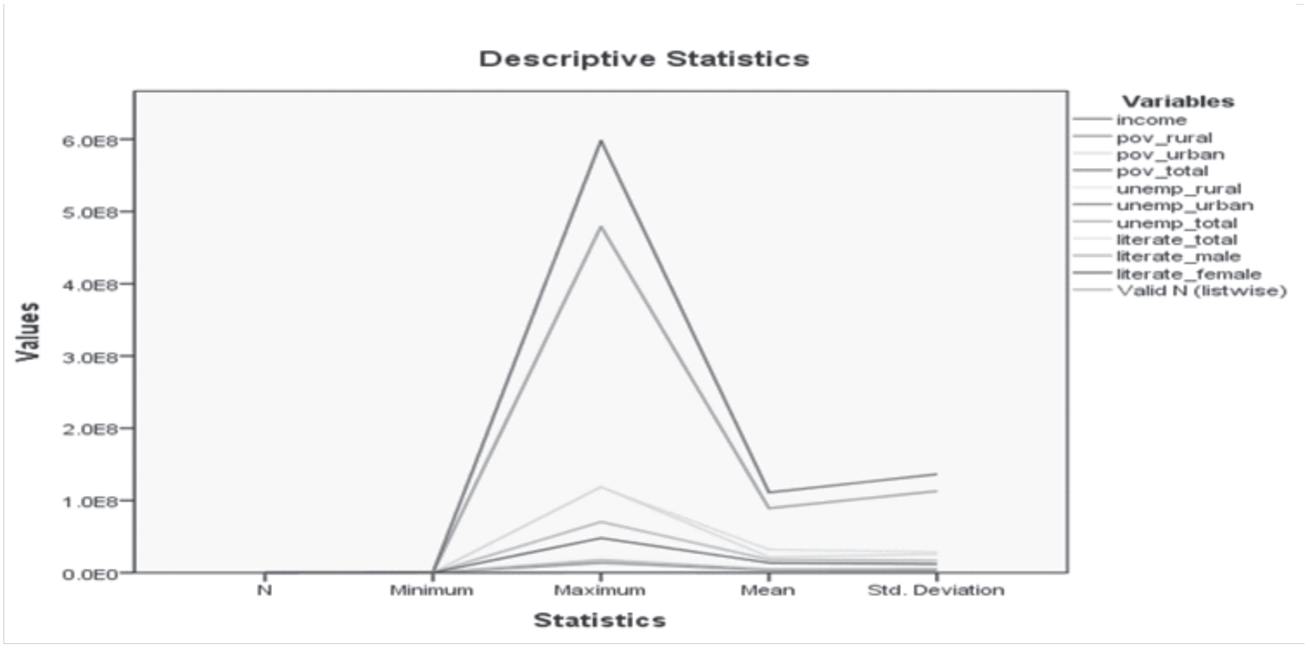
a. Dependent Variable: crime

From the above table a linear regression model is developed to show association among factors contributing to juvenile delinquency.

$$\boxed{\text{Crime} = (-75.3) + (0.006)\ \text{Income} + (2.51)\ \text{Poverty} + (4.57)\ \text{Literacy}}$$

5.1 Hypothesis Testing:

In order to apply ANOVA test for hypothesis testing the normality of data has been checked through descriptive statistics.



5.2 Analysis of Variance (ANOVA):

5.2.1 H0: There is negative association between juvenile delinquency and family income.

Table 4

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82132.943	1	82132.943	.026	.874[b]
	Residual	70216697.682	22	3191668.076		
	Total	70298830.625	23			

a. Dependent Variable: crime

b. Predictors: (Constant), income

Interpretation: From the above table calculated value of F is 0.026 however the tabulated value of F statistics at degree of freedom 1 and 22 is 4.30. Hence the calculated value is smaller than tabulated value so the null hypothesis is accepted means there is a negative association between juvenile delinquency and family income; which is also in consistent with the result of correlation analysis.

It explains that the children having low family income are more involved in criminal activities.

5.2.2 H0: There is negative association between juvenile delinquency and literacy.

Table 5

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17820352.637	1	17820352.637	7.471	.012[b]
	Residual	52478477.988	22	2385385.363		
	Total	70298830.625	23			

a. Dependent Variable: crime

b. Predictors: (Constant), literate_total

Interpretation: From the above table calculated value of F is 7.471 however the tabulated value of F statistics at degree of freedom 1 and 22 is 4.30. Hence the calculated value is larger than tabulated value so the null hypothesis is rejected means there is a positive association between juvenile delinquency and literacy; which is also in consistent with the result of correlation analysis.

It explains that even children with high literacy are also involved in criminal activities.

5.2.3 H0: There is positive association between juvenile delinquency and unemployment.

Table 6

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4342245.398	1	4342245.398	1.448	.242[b]
	Residual	65956585.227	22	2998026.601		
	Total	70298830.625	23			

a. Dependent Variable: crime

b. Predictors: (Constant), unemp_total

Interpretation: From the above table calculated value of F is 1.448 however the tabulated value of F statistics at degree of freedom 1 and 22 is 4.30. Hence the calculated value is smaller than tabulated value so the null hypothesis is accepted means there is a positive association between juvenile delinquency and unemployment; which is also in consistent with the result of correlation analysis.

It explains that higher unemployed children are more involved in criminal offences.

5.2.4 H0: There is positive association between juvenile delinquency and poverty.

Table 7

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2573556.231	1	2573556.231	.836	.370[b]
	Residual	67725274.394	22	3078421.563		
	Total	70298830.625	23			

a. Dependent Variable: crime

b. Predictors: (Constant), pov_total

Interpretation: From the above table calculated value of F is 0.836 however the tabulated value of F statistics at degree of freedom 1 and 22 is 4.30. Hence the calculated value is smaller than tabulated value so the null hypothesis is accepted means there is a positive association between juvenile delinquency and poverty; which is also in consistent with the result of correlation analysis.

It explains that poverty plays a positive role in increasing juvenile delinquency.

6. Conclusion:

In factorial analysis done in number of studies, various factors presumed to be directly associated with the causal process of delinquent behaviour in India. Major factors identified in various studies are:

- Religion and Caste background.
- Marital status.
- Economic and educational status.
- Occupational categories.
- Parental schooling.
- Recreational modes.
- Discipline within family.
- Type and nature of family.
- Mother's employment and siblings.

It is not only the individual factor which is responsible for delinquency or crime rather it is the multi-dimensional factors which are responsible for delinquency. Wellford (1989) viewed that due to the complexity of human conduct and the various multi-cause factors, the best way to progress in the field of criminology is through the combination of multi-level, multidisciplinary factors, where the multi-level factor involves the micro-level and macro-level. The interaction of a child within the family has also a greater influence on delinquency.

Various national and international forums has repeatedly stressed on correctional measures with great significance on children Act(s) are provisions of grater allocation of resources and trained manpower, formulation of minimum standards for institutional as well as non institutional services for children, co-operation and participation of voluntary agencies in the prevention and control of juvenile delinquency and exploring possibilities of alternatives to institutionalization.

It is also felt that children Act(s) should continue to be paternalistic but the fundamental rights of juveniles should be guaranteed and the implementation of Act(s) must be revised periodically.

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AN APPLICATION OF ARIMA AND VAR MODELS ON INDIAN CALL MONEY MARKET

Moid U. Ahmad[1]

An application of ARIMA and VAR models on Indian call money market

Abstract:

In an economy the money market has a crucial role to play in policy framework and market structure and also is very critical to bank's fund management. This is a financial market which deals in short term financial instruments and is primarily created by authorized entities such as corporate, financial institutions, primary dealers and banks and involves borrowing and lending activities by authorized institutions. The shortest term interest rate in the economy is formed in this market and it influences the term structure of interest rates and thus has a role in the transmission of monetary policy and is connected to central bank activities also. The objective of this research is to understand the dynamics of call money market with other macroeconomic variables such as key interest rates and central bank activities. The subject of study is Indian economy where weekly data has been used from April 2011 to August, 2015 for analysis using ARIMA and VAR techniques. The major finding of the study is that call money interest rates are more affected by other interest rates rather than by the level of activity of the central bank and that short term rates (Repo, Bank rates, MSF rates and call money rates) have similar average in medium term.

Introduction:

In an economy the money market has a crucial role to play in policy framework and market structure and also is very critical to fund management of banks and corporate sector. This market involves trading of short term financial securities which is primarily created by authorized entities such as corporate, financial institutions, primary dealers and banks. These short term financial instruments are Certificate of Deposit (CD), Commercial Paper (CP), Treasury bills, Money Market Mutual Fund (MMMF) and other money market instruments. These instruments are used for short term borrowing and lending. The transactions in money market also contribute to the process of establishing interest rates in the economy which is another function of the central bank of a country. The shortest term interest rate in the economy is formed in this market and it influences the term structure of interest rates. Also, these

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markets have a role in the transmission of monetary policy. Thus, it is very critical to understand the dynamics of money market with other interest rates and the central bank activity and this is the precise objective of this research where the focus is call money transactions and call money rates.

The money market is a market for short-term financial assets that are close substitutes of money. The most important feature of a money market instrument is that it is liquid and can be turned into money quickly at low cost and provides an avenue for the use of short-term surplus funds of lenders and the requirements of borrowers. The call/notice/term money market forms an important segment of the Indian Money Market. Under call money market, funds are transacted on an overnight basis, under notice money market, funds are transacted for a period between 2 days and 14 days and under Term Money funds are transferred for 15days - one year. (Source: RBI Master Circular,2015). Scheduled commercial banks, co-operative banks and Primary Dealers (PDs), are permitted to participate in money market, both as borrowers and lenders. The borrowings and lending limits are specified by RBI. Eligible participants are free to decide on interest rates in this market and thus we observe extreme fluctuations of interest rates (Coefficient of Variation for 29% for call money transactions and 9% for call money rates) in this market in India for the time period (Chart 1).

Literature Review:

Interest rate influences the movement of funds across markets and economies. Bonga-Bonga (2011) assessed the dynamic responses of stock prices on inflation, economic activity and monetary policy using a structural vector error-correction model and concluded that there is a positive relationship between equity prices and interest rates in South Africa. Some similar conclusions were also drawn by Muroyiwa (2011) based on an SVAR model where shocks were identified using a combination of both short-run and long-run restrictions. A central bank may affect monetary policy by using temporary and permanent measures. Permanent measures may include Open Market Operations for sale and purchase of treasury bills while the temporary measures may be through affecting repo rates and repo transactions, Selgin(2012). Spindt and Hoffmeister (1988) and Hamilton (1996) aimed to study the evolution of the level and volatility of the overnight interest rate throughout the reserve maintenance period. The speed with which macro variables adjust toward their equilibrium values has great implication for fiscal and monetary policy. Previous research has already shown that the adjustment speed is higher in more open economies Bahmani (2012) for an annual data for 1975-2005.

Research Methodology:

The research objective of this study is to understand the dynamics of call money market with other macroeconomic variables. The subject of study is the Indian economy. The Reserve Bank of India (RBI) is central bank of the country. The macro economic variables used for study in this research are given below:

- Cash Reserve Ratio (CRR): The percent of deposits which banks have to keep with RBI as cash.
- Statutory Liquidity Ratio (SLR): The percent of deposits which banks have to keep in liquid form.
- Repo rates (Repo): The rate of interest at which banks borrow from RBI
- Bank Rate (BR): The long term reference rate as decided by RBI
- Call money interest rates (CMRates): Weighted interest rates of call money market was used
- Call Money amount (CallMoney): The amount of transactions in call money market.
- Marginal Standing Facility (MSF): It is an additional short term borrowing facility where banks can borrow from the central bank.
- Currency in circulation (NotesCir)
- The size of RBI's Balance Sheet(BSsizeRBI)

CRR and SLR are policy ratios to control liquidity in the market by central bank . Repo rate and Bank rate are also decided by the central and represent the level of interest rate in the economy. MSF is a short term borrowings facility for banks where they can borrow from RBI based on their level of time and deposit liabilities. Weekly data was used in the research as provided by RBI database. The time period of data used was April 1, 2011 to August 28, 2015 for call money and other interest rate data and from June 8, 2012 to August 28, 2015 for RBI activity data. Statistical techniques ARIMA and Vector Auto Regression (VAR), Sims(1980), have been used for analysis. Data was extracted from RBI database. SPSS and Gretl softwares were used for statistical analysis.

Analysis:

The basic statistics of the variables are indicated in Table 1. The Coefficient of Variation (CV) is highest for Call Money transaction and lowest for SLR with low for Repo and Margin Standing Facility. The average call money rates for the period (8.05%) is near to other borrowing rates such as Repo (7.81%), MSF(8.94%) and Bank Rate (8.33%) indicating that average is not important but the Coefficient of Variation is important for analysis.

Table 1: Summary Statistics

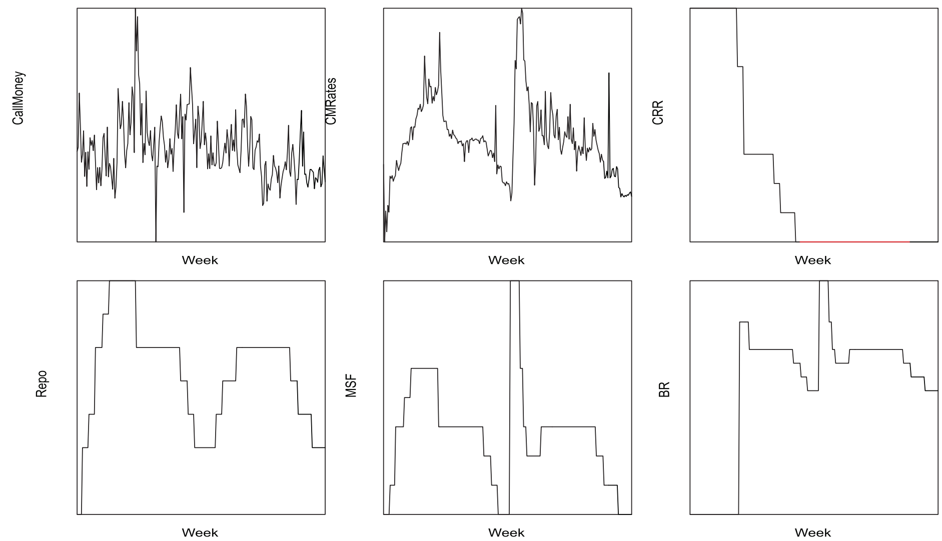
Variable	Mean	C.V.	Skewness	Kurtosis
CallMoney	217.07	0.26	0.94	2.38
CRR	4.54	0.17	1.11	-0.46
SLR	22.99	0.04	-0.36	-0.94
Repo	7.81	0.05	-0.29	-0.30
MSF	8.94	0.05	0.69	1.15
BR	8.33	0.15	-1.10	-0.09
CMRates	8.05	0.09	0.78	1.42
NotesCir	12749.80	0.10	0.19	-1.06
BSsizeRBI	24771.60	0.09	0.01	-0.95

Table 2: Correlations (Week 63 - Week 231)

	CRR	Repo	CMRates	NotesCir	BSsizeRBI
CallMoney	0.1191	-0.0089	0.0396	-0.4351	-0.444
CRR	1	0.3956	0.0077	-0.6395	-0.6466
Repo		1	0.1267	-0.2754	-0.3029
CMRates			1	-0.3432	-0.1618
NotesCir				1	0.9596
BSsizeRBI					1

Analyzing the correlations in Table 2, it is observed that the correlations of call money transactions and call money rates is moderate and negative with RBI business and notes in circulation, between CRR and call money rates it is almost zero and for CRR with RBI business as well as with notes in circulation is high negative. Notes in circulation an RBI business is positive and high indicating the rationale of money supply. Interpreting Chart 1, it can be observed that call money amount (CV 26%) fluctuates more in comparison to call money rate (CV is 9%). The call money rates highlight trends where a rise follows a rise and a fall follows a fall. The call money rates also indicate a cyclic trend and the sample time period indicates two cycles of rise and fall of approximately 115 weeks. CRR rates have come down as policy measure. Repo, Bank rates and MSF rates demonstrated a similar pattern.

Chart 1: A graphical representation of policy rates and call money data



With an objective of understand the call money market , an ARIMA model was run for the amount of call money transactions (CallMoney). An ARIMA (p,d,q) is a basic model of forecasting a variable where p=lag of the variables, d=degree of differentiation where the time series of variables is stationary (mean=zero and variance constant) and q is the degree of moving average. The call money time series was found to be is stationary at level and thus ARIMA model was developed p=1, d=0,q=1 which can be written as ARIMA(1,0,1) or ARMA (1,1) model for 231 observations. The details of the model are given in Table 3.

Table 3: ARMA model for call money 'with constant'

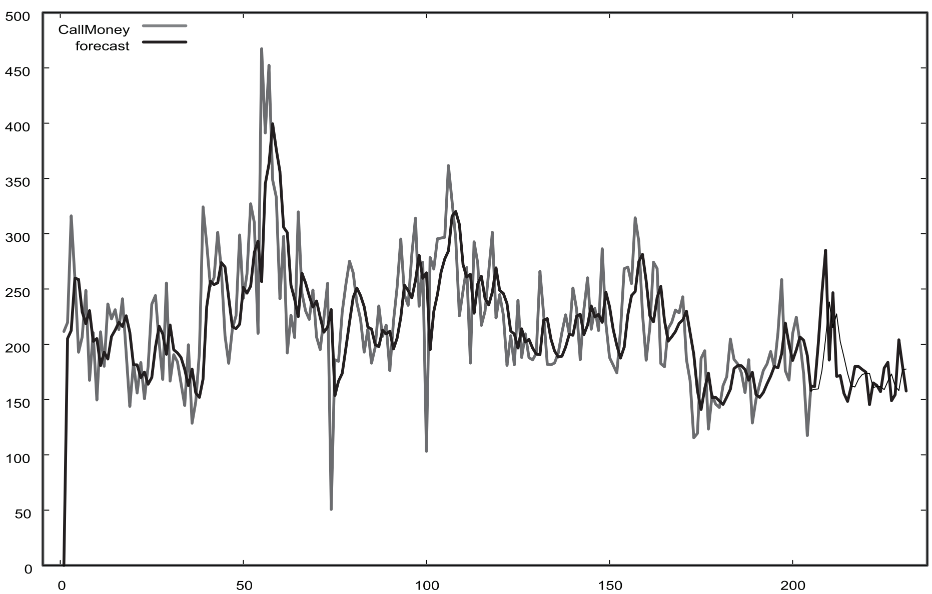
	Coefficient	*p-value*
Const	216.339	<0.0001
phi_1	0.83	<0.0001
theta_1		<0.0001

As per table 3,phi and theta represent the coefficients of auto regression and moving average at lag one. It can be observed that auto regression is more dominant and positive in predicting the call money rates than moving average which is negative. Since the constant coefficient was found to be very high in the initial ARMA model and thus the regression was rerun 'Without constant' and the results are given in Table 4 where there is no constant term and the auto regression coefficients has improved. Diagnostics were run for this regression and error terms were found to be normally distributed, no auto correlation was reported in the regression and no ARCH affect was found. The forecast ability of the model was found to be good (Chart 2)

Table 4: ARMA model for Call Money 'without constant'.

	Coefficient	*p-value*
phi_1	0.995	<0.0001
theta_1	−0.571	<0.0001

Chart 2: Forecast of call money transactions based on ARMA(1,1) model

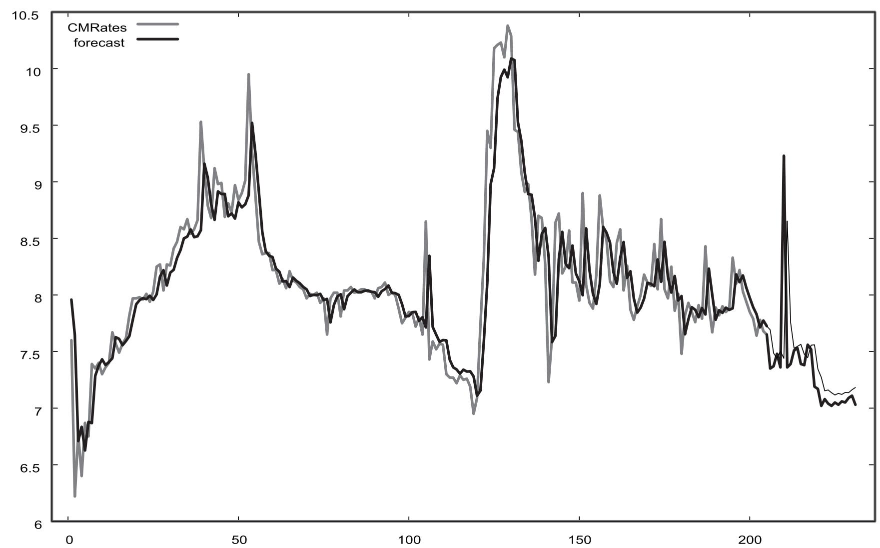


In continuation to call money transactions, an ARIMA model was also developed for call money rates. Call money rate was also found to be stationary at level and thus an ARMA model was run on it. The details of the model are given in Table 5. Diagnostics were run for this regression and error terms were found to be normally distributed, no auto correlation was reported in the regression and no ARCH affect was found. The forecast ability of the model was found to be good (Chart 3). In this model also the forecast of value was more and positively dependent on auto regression coefficient rather than the moving average coefficient.

Table 5: ARMA model of call money rates

	Coefficient	*p-value*
const	7.958	<0.0001
phi_1	0.931	<0.0001
theta_1	−0.273	0.0002

Chart 3: Forecast of call money based on ARMA(1,1) model



VAR systems:

Subsequent to ARIMA analysis of call money variables it became imperative to understand the call money market dynamics with other interest rates (CRR, SLR, BR, MSF, Repo) and with central bank (RBI) activity. Thus, two VAR systems were generated.

VAR system 1: Call money rate as dependent variable and CRR, SLR, BR, MSF and Repo as independent variables.

VAR system 2: Call money rate as dependent variable and RBI balance sheet size and notes in circulation as independent variables.

Analysis of VAR system 1:

The below given table 6 indicate the various specifications of VAR model at different lags. Lag seven had the smallest AIC value (-8.02) and thus VAR system was analyzed at lag 7 which had an R-squared of 86.98% and DW statistic of 2.02. The model was based on 219 observations (week 13-231).

Only equation 1 of the VAR system 1 was used for further analysis as the focus of study was call money market. This regression equation included call money rate as the dependent variable and 'upto' seven lags of 'five' variables (CRR, SLR, Bank Rate, MSF, Repo) and seven lags of call money rates itself as independent variables. The regression coefficients are indicated in (Table 7). The few of the large regression coefficients observed were call money (lag 1), CRR (lag 5), SLR (lag 1),Repo (lag 2),MSF(lag 1) and BR(lag 6).

The equation was tested for Normality, ARCH effect and auto correlation and it was found that the model has No autocorrelation effect, No ARCH affect and the residuals were normally distributed. The decomposition of forecasted variances for call money rates indicated that except for MSF, none of the other four variables are able to explain the variance much. The explained variance by MSF increases very rapidly from third week onwards. For other variables the explained variance is maximum at 3.9% for CRR in 10th week. The residuals of this VAR regression are plotted and indicated in Chart 4 which seems to be stationary except for few extreme deviations.

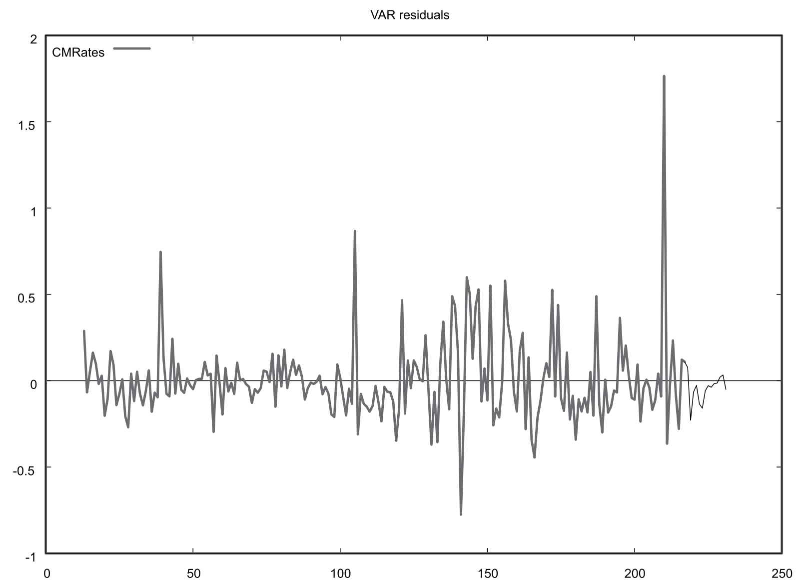
Table 6: The VAR statistics for call money rates at various lags

Lag	P-value	R-squared	DW Statistic	AIC
1	Almost zero	82.36	2.30	-7.55
2	Almost zero	83.41	2.01	-7.33
3	Almost zero	84.35	2.04	-7.41
4	Almost zero	85.34	2.03	-7.23
5	Almost zero	85.77	2.00	-7.66
6	Almost zero	86.23	2.03	-7.64
7	Almost zero	86.98	2.02	-8.02
8	Almost zero	87.67	2.03	-7.85
9	Almost zero	87.85	2.02	-7.72
10	Almost zero	88.10	2.01	-7.5
11	Almost zero	89.22	1.98	-7.43
12	Almost zero	89.75	2.04	-7.30

Table 7: Call money rates as dependent variables (VAR system 1)

	Coefficient	p-value
const	−2.86	0.004
CMRates_1	0.210	0.006
CMRates_2	0.014	0.854
CMRates_3	−0.058	0.442
CMRates_4	0.120	0.104
CMRates_5	0.142	0.052
CMRates_6	−0.058	0.419
CMRates_7	0.038	0.543
CRR_1	0.250	0.555
CRR_2	−0.307	0.591
CRR_3	−0.419	0.438
CRR_4	0.211	0.639
CRR_5	0.400	0.372
CRR_6	−0.434	0.364
CRR_7	0.069	0.853
SLR_1	0.182	0.383
SLR_2	−0.071	0.806
SLR_3	0.274	0.343
SLR_4	−0.222	0.443
SLR_5	−0.302	0.297
SLR_6	0.322	0.268
SLR_7	−0.077	0.716
Repo_1	−0.211	0.476
Repo_2	0.481	0.195
Repo_3	−0.566	0.111
Repo_4	−0.445	0.216
Repo_5	0.426	0.233
Repo_6	0.013	0.972
Repo_7	0.076	0.772
MSF_1	0.672	0.0001
MSF_2	0.241	0.228
MSF_3	−0.108	0.588
MSF_4	0.374	0.065
MSF_5	−0.184	0.388
MSF_6	−0.255	0.258
MSF_7	0.274	0.141
BR_1	−0.124	0.185
BR_2	0.123	0.318
BR_3	0.017	0.888
BR_4	−0.044	0.722

Chart 4: Residual of equation 1 in VAR system 1



Analysis of VAR system 2:

The regression model fitted in VAR system 1 was a satisfactory model but the decomposition of forecasted explained variance remained a concern. The second VAR system aimed to study the impact of RBI activity on call money rates where the RBI activity is defined by two variables, the size of RBI balance sheet (BSsizeRBI) and the level of notes in circulation (NotesCir).

The below given table 8 indicate the various specifications of VAR model at different lags. Lag 'Five' had the smallest AIC value (26.87) and thus VAR system was analyzed at lag 5 which had an R-squared of 75.94% and DW statistic of 2.03. The model was based on 164 observations (week 68-231). Only equation 1 of the VAR system 2 was used for further analysis as the focus of study was call money. In this regression equation, call money rate was the dependent variable with 'upto' five lags of 'two' variables of RBI activity (Balance sheet size and notes in circulation) and fives lags of call money rates as the independent variables. Table 9 represent the regression coefficients. The equation was tested for Normality test, ARCH effect and auto correlation and it was found that the model has No autocorrelation, No ARCH affect and the residuals were normally distributed. The residuals of this VAR regression are plotted and indicated in Chart 5 which seems to be stationary except for few extreme deviations.

Analyzing decomposition of forecasted variance of call money rates over money in circulation and RBI Balance Sheet, it was found that the two input variables does not affect the call money rates much. The Money in circulation did not affected till fourth week (variance was below 1) and it moved to

9.2% till 10th week. For Balance Sheet Size the explained variance increased very slowly till 10th week to 3.78%. Thus it can be concluded that call money rates are not much influenced by the activity of the central banks.

Table 8: The VAR statistics for call money rates at various lags

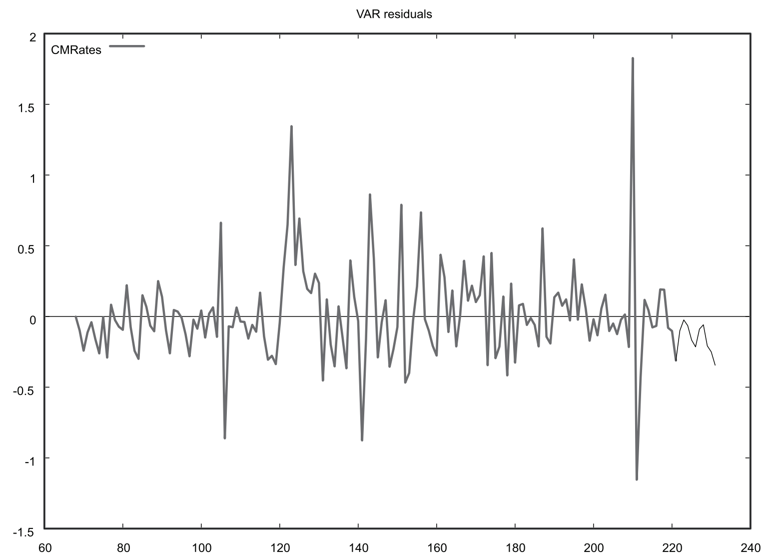
Lag	P-value	R-Squared (%)	DW Statistic	AIC
1	Almost zero	71.27	2.36	27.32
2	Almost zero	73.63	2.01	27.23
3	Almost zero	73.79	1.98	27.07
4	Almost zero	73.96	2.03	27.08
5	Almost zero	75.94	2.03	26.87
6	Almost zero	76.69	2.00	26.90
7	Almost zero	76.93	1.97	26.91
8	Almost zero	77.30	1.98	26.93
9	Almost zero	77.83	1.97	27.00
10	Almost zero	78.16	1.97	26.93

Table 9: Call money rates as dependent variables (VAR system 2)

	Coefficient	p-value
const	1.941	0.010
CMRates_1	0.539	<0.0001
CMRates_2	0.255	0.019
CMRates_3	0.062	0.570
CMRates_4	0.097	0.369
CMRates_5	−0.146	0.115
NotesCir_1	0.000	0.500
NotesCir_2	−0.0006	0.260
NotesCir_3	0.000	0.912
NotesCir_4	−0.0006	0.196
NotesCir_5	0.001	0.024
BSsizeRBI_1	0.000	0.131
BSsizeRBI_2	0.000	0.940
BSsizeRBI_3	−6.40012e-05	0.571
BSsizeRBI_4	−0.0001	0.129
BSsizeRBI_5	0.000	0.078

Amongst the regression coefficients , it was observed, that the coefficient is highest, positive and significant for CMrates (lag 1) and for other input variables of RBI activity it was observed to be almost zero for all lags indicating that the central bank transactions do not affect the call money rates much.

Chart 5: Residual of equation 1 in VAR system 2



Conclusion:

Repo, Bank rates and MSF rates indicated a similar trend and call money rates indicated a cyclic trend with a cycle of 135 weeks. Also average interest rates of Repo, Bank rate, MSF rates and call money rates were found to be in the range 7.81% to 8.94% for the time period indicating that in 'medium term' the average rate follows a close range which means that short term interest rates moves towards a common value in medium term. The ARIMA model suggested that to forecast call money rates or call money transactions, the auto regression of variable is more important than moving average. One major conclusion in the research is that the call money rates amore affected by other interest rates in the market in comparison to the activity level of the central bank. This finding could be very useful for policy makers while deciding interest and policy rates. It also provides a hint to market makers in the call money market in terms of forecasting of call money rates and that other prevailing interest rates in the economy should also be considered while lending or borrowing in call money market.

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