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12 PORTRAITS TO SHAPE YOUR BUSINESS The Volume 10 Issue 9 Version 1.0

highlights

Foreign Exchange Management

Rising Prices Of Fertilizers

Opportunities For Teachers

Through Transition Probabilities



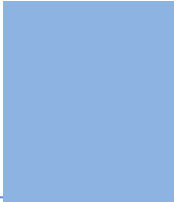


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From the Chief Author's Desk

The research activities among different disciplines of natural science are backbone of system. The deep and strong affords are the demands of today. Sincere afford must be exposed worldwide. Which, in turns, require international platform for rapid and proper communication among similar and interdisciplinary research groups.

The Global Journal of Medical Research is to fulfill all such demands and requirements, and functions also as an international platform. Of course, the publication of research work must be reviewed to establish its authenticity. This helps to promote research activity also.

We know, great scientific research have been worked out by philosopher seeking to verify quite erroneous theories about the nature of things. The research activities are increasing exponentially. These great increments require rapid communication, also to link up with others.

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Constraints of Management Dynamics of Higher Education in Pakistan

{ JIMBR-A Classification (FOR)
740300 }

Hafiz Ghufuran Ali Khan¹, Dr Awais e Siraj², Aneela Sultana³

Abstract-Teaching and learning have been at the heart of education since the inception of mankind in this world. Higher education is meant to develop the ability of a student to think clearly, logically and honestly and to promote clear and critical thinking skills in student; the teacher himself/herself needs to be very much clear in his /her capabilities, duties and responsibilities. This study contributes towards the understanding of the major constraints of management dynamics of higher education in Pakistan. The major constraints are Financial, socio-cultural, technological, availability of skilled man power, quality and are of infrastructure, which were taken as independent variables to be tested against the dependent variable of management of higher education in Pakistan and student willingness and interest taken as moderating variable. Higher Education Commission of Pakistan is putting serious efforts to overcome these main constraints to promote higher education in Pakistan. Three different public universities namely Quaid-I-Azim University, International Islamic University and Federal Urdu University of Science and Technology based in Islamabad were studied to collect in depth knowledge in the form of primary data about different constraints of higher education faced by students and a sample of 500 students were studied out of a total population of 9000 students studying at higher levels (Masters, M.Phil and Ph.D). Enough of the already available relevant literature was studied and Interpretation of the data gave us the findings that concrete measures must be formulated and implemented by Higher Education Commission of Pakistan to minimize the deteriorating impact of these constraints for the management of higher education in Pakistan and strategic plans must be introduced in higher education similar to that of corporate world.

I. INTRODUCTION

Tertiary education represents the “Higher Education” and in Pakistan this education is provided at three level-degree colleges operates at provincial and at federal level. Generally they are affiliated with the universities in public sector for award of degrees. Secondly, institutes, who has degree awarding status but their span of academic activity in terms of number of disciplines taught, is limited, and finally at university level. For the present study I concentrated on three public sector universities based in Islamabad. In the present research the unit of study is “management dynamics” and “students” getting education under the HEC recommended universities. The study is based on the concept of major constraints of management dynamics faced

by students in their educational career at higher level.

II. SIGNIFICANCE OF THE STUDY

This research study is significant in many dimensions. Primarily in this study the constraints of management dynamics of Higher Education in Pakistan is being identified so that every literate Person can be aware of the issue and HEC could become able to strive in their own capacity to resolve them. Secondly this study will help the HEC to minimize its management concerns and then it will directly impact the student performance and a particular increase to the quality of education. The level and quality of Higher Education in Pakistan started experiencing change when Higher Education Commission replaced the University Grants Commission in 2002. Pakistan is a very large country with very diversified population which carries diverse ethnic and linguistics features. Some of its problems are related to regional poverty, few from external pressures and some are from attitudinal factors and they all are required to be identified and addressed. This research study provides us with an overview of the overall situation of different constraints of management dynamics of higher education in Pakistan. Some people might argue that the HEC has not had enough time for its programs to take root. There is some truth in this way of thinking, but an equally forceful opposing argument is that the working of the HEC should be brought out in to the light as quickly and as frequently as possible, so that false turnings leading to irremediable educational or developmental must not practiced. This research study also focuses on identifying the factors which serves as constraints of the management dynamics of higher education causing very low rate of success in Pakistan.

III. OBJECTIVES OF THE STUDY

1) *The major objective includes*

The exploration of the constraints of management dynamics of higher education in Pakistan.

2) *The specific objectives are as follow*

- 1) To find out the effect of social problems of students as a constraint to the level of higher education in Pakistan.
- 2) To find out the effect of financial problems of students and quality of education as a constraint to the level of higher education in Pakistan.

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3) *Theoretical framework*

Dependent variable of this research study is given below:

- Constraints of management dynamics of higher education

The following factors are taken as independent variables of the study.

- Socio cultural Problems
- Financial management problems
- Willingness and interest of students has been taken as the moderating variable.

IV. METHODOLOGY

The present study is based on grouping subjects which already tend to have something happened to them as part of

1) *Sample*

The sample of the present study is 500 which are about 2% of the population size.

Level of studies	QAU		IIU		FUU (Isb)		Total	
	Pop. size	Sample size	Pop. Size	Sample size	Pop. size	Sample size	Pop. size	Sample size
Masters	2100	103	4400	216	1800	88	8300	407
M. Phil	400	19	600	29	300	15	1300	63
PhD	200	10	400	20	-	-	600	30
Total	2700	132	5400	265	2100	103	10200	500

Where

QAU = Quad i Azam university

IIU = Islamic International university

FUU = Federal Urdu University

VI. METHODS OF DATA COLLECTION

The data collocation method used in the present study is interview schedule. It is the combination of interview techniques and questionnaire method. A questionnaire was constructed and the respondents were face-to-face interviewed. The questionnaire is formulated in English. 5% of the questionnaires were rechecked to ensure the validity and reliability of the data. After the collection of data the questions were edited and discrepancies were revalidated and rectified in an organized way. In the present research twenty-five respondents were interviewed randomly selected out of the universe to check the validity. As a result some changes were made in the interview schedule. Similarly the language of the questions was further simplified and necessary corrections were made to finalize the interview schedule. Almost all questions were close-ended, that is, options were given after every question. This method is convenient and swift for respondents to answer, answer of different respondents are easier to compare, answer are easier to be coded and statistical analysis, and the responses can clarify that questions are short, clear, and direct. After the data was collected, each interview schedule was given a serial number and the each question and questions in the interview schedule were allotted a symbols which is know as a code numbers. In the present study every question was

life experience in earning education in different universities under the umbrella of the higher education of Pakistan, and an attempt is made to ascertain the effect of these potential independent variables on the chosen dependent variable such as constraints of management dynamics of higher education in Pakistan.

V. POPULATION

The population of the present study is all the students of three universities who are at the masters, M.phil and Ph D level. And the sampled population is the students of masters, M.phil and Ph D level education in Quad-i-Azam University, Islamabad, Islamic International University, Islamabad and the Federal Urdu university (Islamabad campus). The total size of the population in these three universities is 19000.

allotted numerical value as 1, 2, 3, and so on and every component of question was coded alphabetically. In the present study, first the data is arranged in groups and classes. Then coded material was transferred on a graph sheet and afterwards with its help simple and contingency tables are made, for each characteristic of the unit of study.

VII. ANALYSIS

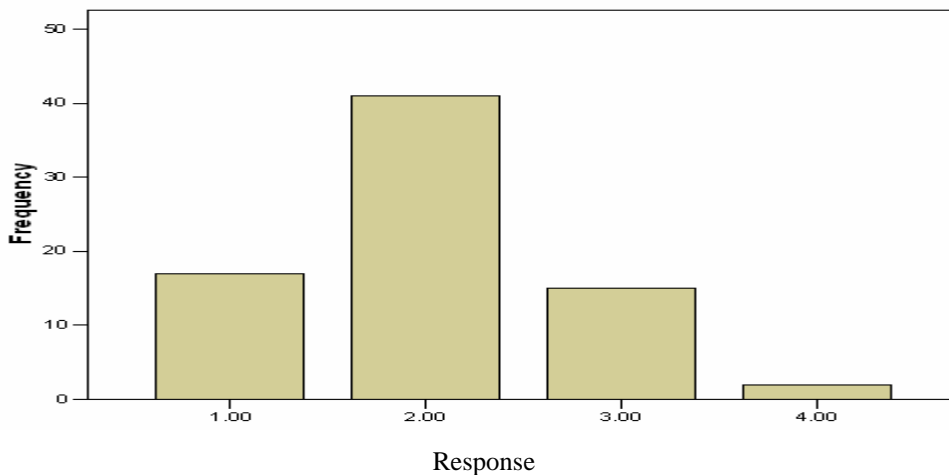
As this is a descriptive research, that is we have to describe the indicators of the study so the data has been analyzed by constructing tables and chart to study the nature of data. In this present study our main task was to elicit all those factors which creates hurdles towards higher education, those variables are like hurdsonal and social development, quality assurance, teaching and learning, administrative problem/research facilities, human and material resources, and financial problems. For that purpose research had been originated from primary level onward and then data was tested through statistical tools. Further more all the responses of variables have been described through tables and charts.

VIII. RESULTS AND INTERPRETATIONS

Poor economic condition of the people of Pakistan is a constraint to promote higher education.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	114	22.7	22.7	22.7
	2.00	274	54.7	54.7	77.3
	3.00	100	20.0	20.0	97.3
	4.00	2	2.7	2.7	100.0
	5.00	0.00	0.00	0.00	100.00
	Total	500	100.0	100.0	

Poor economic condition of the people of Pakistan is a constraint to promote higher education



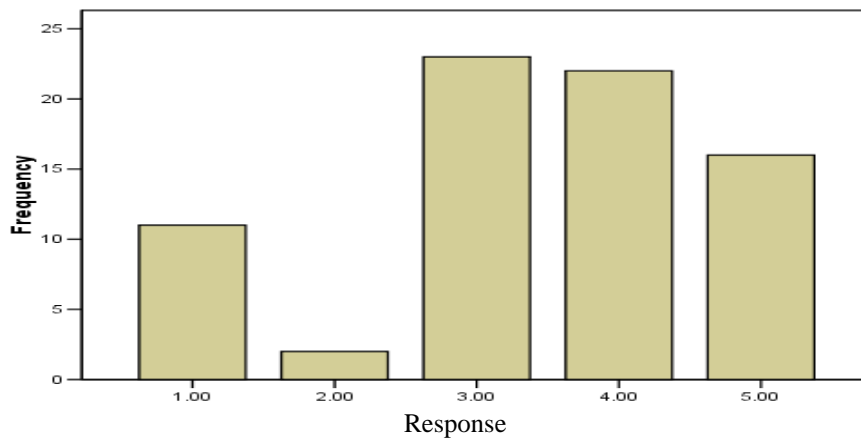
1) Interpretation

According to calculations, 22.7% strongly agreed and 54.7% respondents agreed with the statement that poor economic condition of the people of Pakistan is a constraint to promote higher education. 20.0% had shown neutrality,

2.70% respondents disagreed. Consequently, we may conclude that poor economic condition of the people of Pakistan is a constraint to promote higher education. Socio/cultural values of different regions of Pakistan work as a constraint.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	74	14.7	14.9	14.9
	2.00	14	2.7	2.7	17.6
	3.00	153	30.7	31.1	48.6
	4.00	146	29.3	29.7	78.4
	5.00	106	21.3	21.6	100.0
	Total	492	98.7	100.0	
Missing	System	7	1.3		
Total		500	100.0		

Socio/cultural values of different regions of Pakistan work as a constraint



2) Interpretation

According to calculations, 14.7% strongly agreed and 2.7% respondents showed agreement with the statement that Socio/cultural values of different regions of Pakistan work as a constraint. 30.0% had shown neutrality, 29.30% respondents disagreed and 21.3% had strongly disagreed. Consequently, we may conclude that Socio/cultural values of different regions of Pakistan work as a constraint.

IX. CONCLUSION

This section focused on major conclusions which are given below:

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Effectiveness of Decentralized Foreign Exchange Management in an Airline Company

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GJMBR-B Classification (FOR)
720100 JEL: F31

Abstract-Foreign exchange assumes more importance in globalised business world as all companies try to claim their own piece of market share. In doing so they try to price their products in multiple currencies and thus face the exchange rate volatility risk. Airline companies are the worst affected due to this as they price tickets in multiple currencies. The main problem is not pricing but it is the conversion cost and the treasury management functions which eat away the hard earned revenue, which are unproductive costs. The general objective of the case was to assess the quantum of transaction costs incurred in conversion of currencies. The specific objectives are to highlight how the cash is siphoned off by unnecessary redundant transactions and to depict the merits and demerits of centralised and decentralised treasury management systems. To gain insight the above problems data was collected for Indian Rupee - Ringgit exchange rates and operational statistics of an airline to demonstrate how this company is operationally efficient but fails miserably in the exchange rate management. By adopting decentralised treasury management how a company can reduce the conversion cost is demonstrated. Instead of converting the currencies frequently to home currency, the companies could set up local central treasury and the local collections be netted and pooled, finally through a single conversion, not to home currency but in the required another foreign currency, so as to pay foreign loans and other foreign financial obligations straight. This case not only explains about unproductive costs but also it demonstrates how to eliminate these redundant costs and paves the way for turnaround of the company.

I. INTRODUCTION

The president of ABC airlines was addressing the Board of Directors (BOD) meeting, “Ours is a leading airline in the ASEAN region. We had established a niche not only in the passenger service sector but we are also efficient in cargo transport and aircraft repair and maintenance services. We have been operating in the region for the last 50 years. We have a dedicated work force, our infrastructure is comparable to any other airline in this region. We have won many awards as the best airline in the past and we will maintain this in the future as well. I am proud to have an excellent air and ground crew. Our passenger occupancy ratio and the cargo load capacity ratios (refer appendix) are better than the previous year and our market share is growing. Our aircrafts are comparably new and the carrying

capacity is also larger than our competitors. Accident records and flight delays are unknown to our airlines. We operate flights locally and internationally and we have almost 30 landing rights”. The president was trying to convince the board members in terms of operational statistics, but the problem of ABC airlines was its bottom line. Eventually the president finished the address and opened the floor for clarifications and questions. The board consisted of the Marketing manager, Mr. Kasim, Human Resource manager Mr. Fariz, Mr. Herron the finance manager and operations manager Mr. Ismail. There were two executive directors who were appointed by the banks who had substantially financed the aircrafts. They were Mr. Mohamed and Ms. Linda. Ms. Linda started the discussion. “Thank you Mr. President for the detailed information regarding operations and finance, however, I am worried about the financial results. The return on investment and the earnings per share are negative, could you please explain further on the poor financial performance”. Mr. Fariz the finance manager replied, “Honourable member Ms. Linda’s concern is genuine. We all knew that the oil prices last year touched an unprecedented high of USD 147 from USD 45 within a period of six months for a barrel of crude oil. This is an approximate 300% increase. Though we charge fuel surcharge, it is not adequate to offset the price increase. This had a negative impact on the passenger volume. In addition the spare parts’ costs, depreciation of USD and appreciation of other currencies against the Ringgit compounded the problems. These complex multiple problems reduced not only the revenues but also increased the costs substantially and simultaneously resulted in losses”. Mr. Kasim intervened, “I think the problems are not solely caused by fuel and spare parts but it is the volatility of the exchange rates (O’Brien, Thomas, 2010). The dollar depreciation increased the price of the crude and consequently all owes emerged”. Mr. Mohamed (Bank nominee) agreed and asked “Don’t we have foreign exchange hedging policy in place? There are a lot of hedging instruments available at low costs in the market and this foreign exchange risk (Chalamandaris et. al, 2010) could be easily managed”, he suggested. The marketing manager Mr. Kasim pointed out, “We do not give importance to the competition of late that we face from the budget airlines like Airasia and others. They undercut prices and take away our market share not only in the passenger segment but also from cargo”. Mr. Mohamed (Bank nominee) quipped, “From the records I could see another problem in treasury management. The centralized cash management practiced now involves substantial transaction costs in the form of bid – ask spread (Buliard, Fabien,

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2004), which could be reduced by decentralising the treasury function". The discussion covered the following areas in general.

II. THE PROBLEM

The president and the finance manager knew that the financial results were not encouraging. The president tried convincing the BOD by pointing out several non financial measures which were also to be considered as success factors. These included zero accident records, timely operation of flights, load factors etc. He argued that the financial results would not of course satisfy the share holders but as a responsible company it had to satisfy the stakeholders, which was more important in the present scenario. Though the company showed excellent operational statistics, the financial performance was not satisfactory. For almost 10 years the company showed net losses and its equity eroded gradually. Three reasons were attributed for this poor financial performance. The oil price hike was cited as reason one, secondly the severe competition it was facing, of late from budget airlines, which undercut the price to a level no one could think of. The third problem was the inefficient management of foreign exchange (Mogg Reg, Baker, Richard, 1987) as it was selling tickets in several local currencies.

III. FOREIGN EXCHANGE

The company's operation spanned across almost 30 countries, therefore it handled 30 currencies simultaneously. It was obvious that the company received major cash inflows from 30 different countries' currencies in Kuala Lumpur in Ringgit (RM) every month after meeting the local expenses. The major cash outflows were in the form of fuel charges, payments for spare parts, maintenance and servicing foreign debts mostly in United States Dollars (USD).

IV. TREASURY MANAGEMENT

The company wanted to have tight controls over cash, hence they operated a centralized cash management system (Mulligan Emer, 2001). The foreign branch office managers were advised to remit the net amount after paying the local office expenses to Kuala Lumpur on a monthly basis in RM. Any excess expenditure in any branch was paid from Kuala Lumpur and the branch managers were not allowed to transfer cash among themselves to meet the net deficit. The net balances were remitted by all the branches regularly to Kuala Lumpur and the central treasury would pay all the common expenses in Ringgit and the remaining balance would be converted into USD and foreign loans were serviced on a yearly basis.

V. TRANSACTION COSTS

The cash inflows were in several different currencies ranging from RM 0.5million to RM 10million every month. The branches sent net cash balances to Kuala Lumpur by converting them to Ringgit. This involved substantial transaction costs. Any deficit in a branch was paid from Kuala Lumpur by converting the Ringgit into local currency. The net cash balance left over was converted into USD to service the foreign debt. These multiple conversions of currencies involved substantial transaction costs (Gagnon, Louis; Andrew Karolyi, 2010). The airline industry is stricter with safety standards and the airline companies are compelled to replace the parts based on number of hours used and not based on wear and tear. Therefore the spare parts' costs were a major cost component and payment was to be made in USD.

VI. EXCHANGE RATE RISK

Until July 2005 the Ringgit was pegged to USD at RM 3.80. It was easier to compute and pay foreign expenses in USD. Moreover the exchange rate risk was nil as there was no volatility in the USD exchange rate as it was pegged against Ringgit. After July 2005 the Ringgit was depegged consequently the exchange rate started drifting but favourably. USD depreciated against Ringgit and it was beneficial to pay in USD as it required lesser Ringgit. But during the same period the other currencies like the Euro, Australian Dollar, Singapore Dollar, Pound Sterling etc appreciated against Ringgit and this had increased the service costs in these countries. Chinese Reminbi was an exception as it was also pegged till July 2005 against USD. Now the management of foreign exchange had become more challenging and complicated (Ross, Derek, 1988) as the USD and Chinese Reminbi were floating against the Ringgit. Consequently the management of ABC airlines spent considerable time in foreign exchange management and foreign exchange exposure management (Veraart, Luitgard A. M, 2010) to bring stability in revenue and expenses. As a consequence the central cash management had become more complex and complicated and no one was in control according to the finance manager.

VII. CASE ANALYSIS

To illustrate the cash flow pattern, India was taken as an example. ABC airlines operated flights to seven cities from Kuala Lumpur International Airport viz., New Delhi, Kolkata, Mumbai, Ahamedabad, Hyderabad, Bangalore and Chennai. The monthly revenue and expenses are given below.

Table 1 Cash flow statistics from India (in million Indian Rupees)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
New Delhi												
Revenue	7	5	7	5	8	7	5	8	10	5	6	8
Costs	2	5	3	5	2	2	7	5	7	2	5	7
Net	5	0	4	0	6	5	-2	3	3	3	1	1
Kolkata												
Revenue	14	13	14	12	12	14	13	13	15	12	13	14
Costs	9	12	10	9	11	8	8	10	9	10	12	8
Net	5	1	4	3	1	6	5	3	6	2	1	6
Mumbai												
Revenue	9	10	7	9	8	8	9	9	8	9	10	9
Costs	6	4	9	5	5	8	7	7	6	9	8	5
Net	3	6	-2	4	3	0	2	2	2	0	2	4
Ahamedabad												
Revenue	4	6	6	4	6	6	4	4	6	4	6	6
Costs	7	4	7	6	4	4	5	7	7	6	6	4
Net	-3	2	-1	-2	2	2	-1	-3	-1	-2	0	2
Hyderabad												
Revenue	3	3	3	3	2	2	2	3	2	3	3	3
Costs	2	1	1	2	2	2	3	1	1	3	1	1
Net	1	2	2	1	0	0	-1	2	1	0	2	2
Bangalore												
Revenue	4	3	4	4	3	3	4	3	4	3	3	4
Costs	2	2	2	3	2	2	2	3	3	2	2	2
Net	2	1	2	1	1	1	2	0	1	1	1	2
Chennai												
Revenue	23	31	21	27	24	20	21	23	22	30	26	28
Costs	27	19	18	29	22	22	19	17	18	19	30	22
Net	-4	12	3	-2	2	-2	2	6	4	11	-4	6
Mean Exchange Rate 1 RM equal to INR	11.80	12.05	11.75	11.60	11.50	11.30	11.55	11.60	11.75	11.80	11.70	11.60

The monthly average exchange rates between Indian Rupee and Ringgit are also given in the table. During the same period a few branch offices had surplus cash while some had deficit cash and they were not allowed to offset. The branches that have surplus cash are required to send the surplus in RM to Kuala Lumpur and the deficit branches will receive the deficit from Kuala Lumpur. This type of

cash dealings increased the transaction costs substantially (Rahman, Mohammad Mafizur, 2010).

VIII. OPERATIONAL EFFICIENCY: INTRA-FIRM ANALYSIS

Operational details in terms of passengers and cargo carried with load factor are as follows.

Table 2 Operational statistics of ABC airlines

		Nov 2009	Oct 2009		2009	2008	
INTERNATIONAL PASSENGERS		Current month	Previous month	Change	Current year	Previous year	Change
Revenue Passenger Kilometres	(mil)	2907.9	2841.6	0.023	33618.5	33828	-0.006
Available Seat Kilometres	(mil)	4208.6	4235.3	-0.006	46854.9	48664.3	-0.037
Load Factor	(%)	69.1	67.1	2	71.8	69.5	2.3
Passengers Carried	('000)	709	687	0.032	7783	7642	0.018
Total							
Revenue Passenger Kilometres	(mil)	3199.2	3140.2	0.019	36547.7	37518.8	-0.026
Available Seat Kilometres	(mil)	4614.1	4642.2	-0.006	51302.6	54007.3	-0.05
Load Factor	(%)	69.3	67.6	1.7	71.2	69.5	1.7
Passengers Carried	('000)	1176	1162	0.012	12666	14179	-0.107
CARGO							
Load Tonne Kilometres	(mil)	128.2	127.7	0.004	1270.6	1336.5	-0.049
Capacity Tonne Kilometres	(mil)	175.1	177.8	-0.015	1950.8	2064.6	-0.055
Load Factor	(%)	73.2	71.9	1.3	65.1	64.7	0.4
Freighter							
Load Tonne Kilometres	(mil)	120.5	118.5	0.017	1125.8	1017.1	0.107
Capacity Tonne Kilometres	(mil)	194.7	189.7	0.026	1906.1	1683	0.133
Load Factor	(%)	61.9	62.5	-0.6	59.1	60.4	-1.3
Total							
Load Tonne Kilometres	(mil)	248.7	246.2	0.01	2396.4	2353.6	0.018
Capacity Tonne Kilometres	(mil)	369.8	367.5	0.006	3856.8	3747.6	0.029
Load Factor	(%)	67.3	67	0.3	62.1	62.8	-0.7
OVERALL							
Load Tonne Kilometres	(mil)	541.3	533.6	0.014	5745.7	5787.7	-0.007
Capacity Tonne Kilometres	(mil)	802.2	791.8	0.013	8606.6	8720.8	-0.013
Load Factor	(%)	67.5	67.4	0.1	66.8	66.4	0.4

The data given above reveals that revenue passenger kilometers have gone down slightly in the previous year but the load factor has increased by 2.3% which is a good sign in the current year. Similarly the in the current month also when compared to previous month the load factor increased by 2%. These results reveal that the passenger sector is doing well when compared to previous month and year. In the cargo section previous year the load factor has increased by only 0.4% while in the current month it has increased to 1.3%. This is an improvement of three times when compared to previous year. This airline is doing well both in passenger and cargo sectors when compared to previous year.

IX. OPERATIONAL EFFICIENCY: COMPETITOR ANALYSIS

When a competitor in the same industry is compared with this airline the data shows that the revenue passenger kilometers are better in the current year. The competitor's data show a load factor of 71.2% in the previous year but this airline shows 71.8% a marginal excess. Change in the

load factor for this airline is 2.3% whereas for competitor it is only 1.7%. In the previous year the this airline is performing better than the competitor. In the current month also it is doing better than the competitor with similar statistics. In the cargo section also this airline's performance is better. The cargo load factor for competitor has gone down by 1.3% while this airline's cargo load factor has increased by 0.4% previous year to current year basis. In the monthly data also similar results are observed. The cargo load factor for this airline has increased by 1.3% while for competitor it has gone down by 0.6%, on monthly basis. All the above results show the operational strength of this airline.

X. FINANCIAL ANALYSIS

This case is mainly for highlighting the savings that could be achieved by following different foreign exchange conversion policy and treasury management strategy. Indian Rupees and the branches operated in India are taken as example.

XI. MONTHLY TRANSFER OF FOREIGN CURRENCY

The following table explains how the Indian Rupees is transferred monthly from all branches of India. The negative

figure indicates the amount sent from Kuala Lumpur to India to meet the expenses in a particular branch. Finally the amount realized in Kuala Lumpur in terms of Ringgit is 12.13 million. This RM is converted in to USD and thus realized 3.19 million to pay Boeing or to service debt in foreign currency.

Table 3 Indian Rupees remitted to KUALA LUMPUR monthly by branches

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly RM
Mean Exchange Rate	12.80	13.05	12.75	12.60	12.50	12.30	12.55	12.60	12.75	12.80	12.70	12.60	
New Delhi - Rs	5	0	4	0	6	5	-2	3	3	3	1	1	
RM in millions	0.391	0.000	0.314	0.000	0.480	0.407	-0.159	0.238	0.235	0.234	0.079	0.079	2.30
Kolkata - Rs	5	1	4	3	1	6	5	3	6	2	1	6	
RM in millions	0.391	0.077	0.314	0.238	0.080	0.488	0.398	0.238	0.471	0.156	0.079	0.476	3.41
Mumbai - Rs	3	6	-2	4	3	0	2	2	2	0	2	4	
RM in millions	0.234	0.460	0.157	0.317	0.240	0.000	0.159	0.159	0.157	0.000	0.157	0.317	2.04
Ahamedabad - Rs	-3	2	-1	-2	2	2	-1	-3	-1	-2	0	2	
RM in millions	-0.234	0.153	-0.078	-0.159	0.160	0.163	-0.080	-0.238	-0.078	-0.156	0.000	0.159	-0.39
Hyderabad - Rs	1	2	2	1	0	0	-1	2	1	0	2	2	
RM in millions	0.078	0.153	0.157	0.079	0.000	0.000	-0.080	0.159	0.078	0.000	0.157	0.159	0.94
Bangalore - Rs	2	1	2	1	1	1	2	0	1	1	1	2	
RM in millions	0.156	0.077	0.157	0.079	0.080	0.081	0.159	0.000	0.078	0.078	0.079	0.159	1.18
Chennai - Rs	-4	12	3	-2	2	-2	2	6	4	11	-4	6	
RM in millions	-0.313	0.920	0.235	0.159	0.160	0.163	0.159	0.476	0.314	0.859	0.315	0.476	2.65
Monthly Receipts in Kuala Lumpur in RM	0.703	1.839	0.941	0.397	1.200	0.976	0.558	1.032	1.255	1.172	0.236	1.825	12.13
	RM is converted to USD to service foreign debts												3.19

XII. YEARLY TRANSFER OF FOREIGN CURRENCY

If netted with in India and if transferred at the end of the year to Kuala Lumpur 12.22 million RM is realized and again it is converted to USD realizing 3.22 million to pay foreign debts. This amount is slightly better than monthly

transfer from each branch. This meager difference is due to the assumption of exchange rate (Yazid et al. 2006) at end of the year. If this assumption is relaxed the savings may be higher or lower depending on the exchange rate movement. This oscillation exchange rates results in exchange rate risk (Pasquariello, Paolo, 2010) which entails exchange risk management and hedging.

Table 4 Indian Rupees remitted to Kuala Lumpur at the end of the year after netting

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Exchange Rate	12.80	13.05	12.75	12.60	12.50	12.30	12.55	12.60	12.75	12.80	12.70	12.60	
New Delhi	5	0	4	0	6	5	-2	3	3	3	1	1	
Kolkata	5	1	4	3	1	6	5	3	6	2	1	6	
Mumbai	3	6	-2	4	3	0	2	2	2	0	2	4	
Ahamedabad	-3	2	-1	-2	2	2	-1	-3	-1	-2	0	2	
Hyderabad	1	2	2	1	0	0	-1	2	1	0	2	2	
Bangalore	2	1	2	1	1	1	2	0	1	1	1	2	
Chennai	-4	12	3	-2	2	-2	2	6	4	11	-4	6	
Netting within India	9	24	12	5	15	12	7	13	16	15	3	23	154
	RM Received 12.22												
	USD 3.22												

XIII. SAVINGS IF CONVERTED IN DESIRED CURRENCY

Table 5 shows the savings made if Indian Rupees are converted to USD and remitted straight to Boeing and

service the foreign debts. The net amount remitted in USD increases from 3.22 to 3.47 million which reduces not only the repayments but also saves interest on compounding basis.

Table 5 Indian Rupees remitted to USA at the end of the year after netting

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Mean Exchange Rate	44.80	45.68	44.63	44.10	43.75	43.05	43.93	44.10	44.63	44.80	44.45	44.10	
New Delhi	5	0	4	0	6	5	-2	3	3	3	1	1	
Kolkata	5	1	4	3	1	6	5	3	6	2	1	6	
Mumbai	3	6	-2	4	3	0	2	2	2	0	2	4	
Ahamedabad	-3	2	-1	-2	2	2	-1	-3	-1	-2	0	2	
Hyderabad	1	2	2	1	0	0	-1	2	1	0	2	2	
Bangalore	2	1	2	1	1	1	2	0	1	1	1	2	
Chennai	-4	12	3	-2	2	-2	2	6	4	11	-4	6	
Netting within India	9	24	12	5	15	12	7	13	16	15	3	23	154
USD Receipts	0.20	0.53	0.27	0.11	0.34	0.28	0.16	0.29	0.36	0.33	0.07	0.52	3.47

Substantial amount will be saved if all currencies are managed properly and right exchange rate management policies are designed and implemented.

XIV. CONCLUSION

This ABC airline is highly successful and efficient in operational side but did not show financial effectiveness due to ineffective policies in foreign exchange management. The conventional centralized treasury management is not relevant presently and it is to be replaced with the

decentralized treasury management. The cash management and controlling could be done effectively through on line cash management by selecting right software. Cash balances could be verified at any point of time in any branch and also in any currency which is needed for controlling purposes. After netting if the conversions are carried out, a substantial savings could be achieved rather, than doing it without netting. Converting any currency in Ringgit also is to be avoided as it involves transaction costs. Multiple conversions should always to be avoided and a single

straight conversion in the desired currency will reduce financial costs. Choosing the right time and right bank for conversion also will save a lot of money as different banks charge different rates on the same day. The volatility in exchange rates could be effectively managed through derivative contracts and through several hedging mechanisms. A wholesome foreign exchange management will solve the present problems of this airline.

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Analysis of Health Management Practices in Pakistan between 1998 to 2008

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Abstract- This study analyses the health management practices of Pakistan during the years 1998-2008. The objective of the study is to provide business analysis for the improvement of health structure in Pakistan. Various variables such as number of hospitals, maternity & child Health centers, Rural Health Centers, TB Centers, number of Beds available, number of persons per bed, number of registered doctors and dentists, population per doctor and dentist, expenditure on development and non-development areas, and the average consulting fee of doctors are analyzed. The study is descriptive in nature and depends upon the historical data which is mined from the economy survey of Pakistan website. Different charts such as Pivot chart, Scatter plot and Times series are used to provide better analysis for the study. The findings denote that in general, the health structure of Pakistan is poor and rural areas are poorer to have health facilities, although there has been an improvement in the health structure as the ratio of dentist/doctor to patient has improved during this period.

I. INTRODUCTION

Pakistan health facilities and health indicators are generally poor especially in the rural areas. Out of 1000 infants 76.6 persons of them die and the mortality rate under age 5 is 10.1 %. Malaria incidence is 0.75 per 1000 persons, whereas, TB incidence is 181 persons per 100,000. The health expenditure has been very low and not sufficient to provide good health to people. For instance the development expenditure was Rs. 14.272 billion for the year 2007-08, and the current expenditure was. Rs. 3.791 billion [1] Better health contributes to the productivity of the labor force, to the economic better-off and ultimately leads to better human life. To attain better, skilful, efficient and productive human capital resources, governments subsidize the health care facilities. Besides the nature of the existing circumstances of the human resource, any marginal change in public sector spending on health services may have positive impact on the human capital and economic growth. [2]

Marginalization, illiteracy, class or caste status, and gender factors are the indicators of urban poverty. Cities also have "relative inequality," where poverty is not absolute but rather is measured by the opportunity and resource difference between "haves" and "have-nots" living close to each other. Social and economic heterogeneity weakens urban poor communities. A majority of urban poor households are headed by women who must earn a living. This situation affects the health and development of small children who are often among the workforce. [3]

The private health centers exist in the urban areas which are of much importance. These centers are available even in the medium sized cities one can find all types of health centers ranging from traditional healers to the sellers of drugs in the streets to well trained surgeons. As developing countries engage in health-sector reforms and continue to decentralize their political and health systems, they need to provide allowances for the thinner resources and weaker capabilities of the urban areas. [4]

According to the research on district health system and experiences and prospects in Africa the health related-initiatives such as traditional birth attendance, health committees, and traditional healings need the support of the nearest health centers and dispensaries. This approach may be useful to continue in the rural areas which are without health facilities. [5]

Population aging is determined almost entirely by the decline of birth rates and mortality rates. A population begins to age when there are fewer children and adults longer life for adults, resulting smaller number of children and youth and progressively larger cohorts of older people. At the early stages of demographic transition, a decrease in infant and childhood mortality results in more children and a younger population. [6]

The health services need to be improved for the rural elders. Health problem of the elders are complicated since they may be the result of physical, psychological and social problems in their past life. The type of the service they need may not be specialized in a hospital. It may be less costly and effective to build community health centers which deal the problems associated with aging. [7]

Urban in comparison to rural residence is a vital health determinant over time and across countries. This difference by type of residence may depend on in urban and rural communities, or a combination of both individual and community factor. [8]

II. RESEARCH METHODOLOGY

This study analyses the health structure of Pakistan in last 10 years starting from 1998 to 2008. For this purpose various variables are selected for analysis. The data for these variables is mined from the economic survey of Pakistan website. For the better analysis some statistical techniques such as Pivot chart, Scatter plot and Time series are used. The findings and conclusions are the result of the various inferences of variables in different years.

III. HOSPITALS AND RURAL HEALTH CENTERS

A cursory glance at the distribution of health facilities in Pakistan gives a startling picture: despite the fact that half of Pakistan's population lives in rural areas, most of the medical personnel and health facilities are found in the cities. For example maximum number of the hospitals in the country is located in rural areas and in 2007 only 8,574 beds are available to a population of 80 million. 85 per cent of all practicing doctors work in the cities, which come to a favorable doctor-population ratio of 1:1801 for the urban areas of Pakistan. Clearly, high priority is given to hospitals, medical colleges and curative services in urban areas, while primary healthcare and rural health service are ignored which has led to a high rural-urban disparity in health care resulting in rapidly increasing poverty level in rural areas during the last decade.

The sum of hospitals in urban and sum of rural health centers are graphically displayed in the figure: 1.

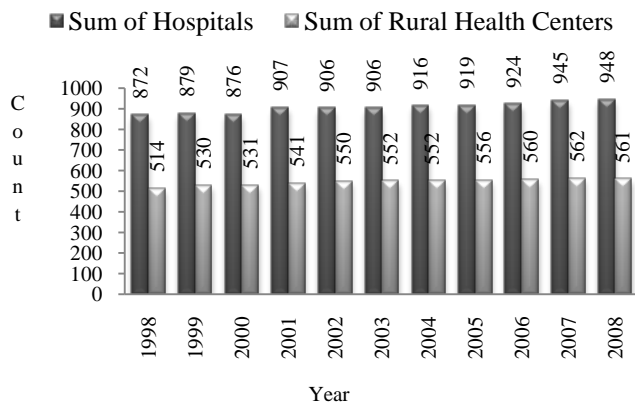


Figure: 1 Hospitals and RHCs

The figure: 1 shows that:

- a) In the last 10 years the RHC has increased 47 units which are lesser than 76 units of hospitals increased in the urban areas. Although half populations of Pakistan live in rural areas, they are less facilitated than the urban inhabitants. This is because of the government units, official employees and rich people who enjoy more health facility than 80 million poor people living in the rural areas.
- b) Population growth according to ministry of health Pakistan was 1.9% in 2007-08, whereas, the growth of hospitals was nominally positive 0.316% which is no compare to population growth. Ironically, the RHC had a fall of 0.178 % in the same period which means the number of RHC decreased in 2008 and rural inhabitants had lesser access to hospitals as their population increased.
- c) In 2002 and 2003 the number of hospitals, in 2003 and 2004 the number of RHC has not changed which is due to no further expenditure in this regard or construction of hospitals and RHC were in process but not finished in these years.

- d) The figure shows that the half population of Pakistan in urban had enjoyed more access to hospitals than rural inhabitants who still remain very poor in health comparatively.

IV. EXPENDITURE ON DEVELOPMENT AND NON-DEVELOPMENT AREA

Being a developing country, Pakistan spends very little on the provision of health services. Although public health expenditure increased by 430 percent during 1970-78, the rate of change declined after that. How changes in health spending affect the health status of a nation is an important issue. Developing countries, where 78 percent of the world population lives, spend only 10 percent of the total world health expenditure. The shares of health expenditure in gross national product are also significantly different across regions. In 1991, developing countries spent only 4.7 percent of their GNP on health, whereas the ratio was 9.2 percent for established market economies. Furthermore, per capita health expenditure in Pakistan is only 1/10 of the health expenditure in Sub-Saharan Africa, the poorest region in the world. Pakistan health indicators are poorer than the low-income countries such as India, Bangladesh, China and Sri Lanka. The poor outcome in health sector is mainly due to the ineffective delivery of services as well as the low spending on the health sector in Pakistan, which remained very low relative to other developing countries. Figure: 2 portrays the spending on health i.e. expenditure on development and non-development purpose.

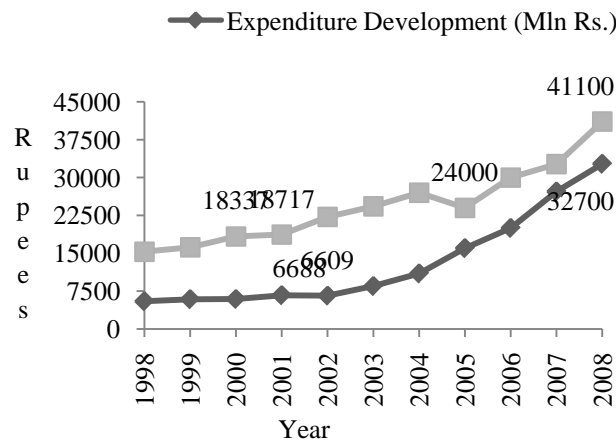


Figure: 2 Exp. on dev. and non-dev.

According to the above figure:

- a) The non development health expenditure has gradually increased during 1998 to 2008 and stood 41,100 million rupees in 2008. The only years the non development expenditure decreased were 2001 and 2005 which was due to government less spending in this area and allocating more fund to other health structures such as hospitals and RHC (figure: 1), number of beds (table:1), number of doctors and dentists registered (table:2).
- b) Government has constantly spent more on the health development area which stood 32,700 million rupees in

2008. The health expenditure slightly fell 79 million rupees which was due to overall decrease of health expenditure by Government as % of GDP which fell from 0.58% to 0.57%.

- c) The government spent more on non-development sector as compared to development sector. But overall expenditure on health has been very poor as compared to the other developing countries that spent 4.7 % of their GDP. We can say that there is no increase in expenditure on the health if we consider the time value of money.

V. MCH AND TB CENTERS

Although Pakistan health indicators improved over time but its pace has been very slow. Maternal mortality rate is also high at 350-435 per hundred thousand births, largely because 78 percent of births take place at home, under the care of traditional birth attendants. The child mortality rate was 90 per thousand in 2007, and proportion of under-5 malnourished children is 39; about 10 million children under five years are malnourished resulting in 61 percent being stunted, 39 percent being under weight and 9 percent being wasted. [10]

The country’s health indicators depict a dismal picture when compared with other countries at the same level of development. Tuberculosis (TB) is highly prevalent in Pakistan. The estimated incidence of TB is around 250,000 per year in Pakistan: In fact, Pakistan ranks 6th among the 22 high burden countries of TB in the world. The Pakistan government has therefore given high priority to TB control. It has declared TB as national emergency in 2001.

The TB epidemic could become much worse in the earthquake affected areas. The appalling living situations are unfortunately favorable conditions for the development and spread of TB. Interruption of TB care could result in the increase of TB cases, particularly in an incurable form of multi-drug resistant TB. When the earthquake occurred, around 7,000 people were receiving TB treatment in the affected areas. [9]

To suppress the above problems the maternity & child health centers and TB centers are created that provide services to their concerned patients.

The Figure: 3 display the number of MCH and TB centers progression in the last decade (1998-2008) in Pakistan.

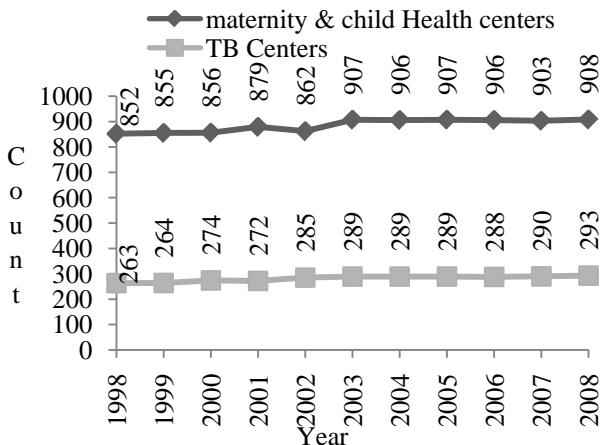


Figure: 3 MCH and TB centers

The following inferences are drawn from the above figure:

- a) During the 10 years (1998-2008) 30 TB centers were constructed. The TB center creation has been progressive with slight variation in different years. For example, despite the decrease in total health expenditure by the Government, in 2002 the number of TB centers raised 13 units which were due to earthquakes in the year 2002, the increased number of people infected by TB and the construction of some TB centers which were finished in this year. In 2006, the number of TB center decreased by one unit as result of decrease in health expenditure from 0.57% to 0.51% of GDP.
- b) The number TB center has been insufficient. On average the number of TB center has increased 3 units each year whereas, the number of incidence to TB is around 250,000 each year (WHO) that’s 83,333 patients per TB center. It’s far difficult for one TB center to provide service to that huge number of patients.
- c) Similarly, the number of MCH has increased 56 units in 10 years (1998-2008) which is 5.6 centers per year. In 2002 and 2006 MCH has decreased as the overall health expenditure fell.
- d) The number of MCH has been quite less and unable to provide service to all patients who refer to these centers because the number of births each year has been very large. For example, ‘in 2008 the population growth was 1.8 %. Of total 159060000, 2512456 births took place in 2008, on contrary, on average, 5.6 MCH were constructed in 2008 which is very nominal and can’t suffice the new births. One reason that has lightened the load on MCH is that more than 70% of the births take place at homes. But still the MCH service production is poor enough.

VI. TOTAL BED AND POPULATION PER BED

The status of health in Pakistan is characterized by the high population growth rate, high maternal and infant mortality which was 72 in 2007 per thousand live births.

Although Pakistan is one of poor countries in terms of health among the developing countries, as a young country it has been trying to provide health facilities. The health structure has increased since 1960. For example, since 1995 the number of hospitals’ beds has increased more than fourfold. Similarly, the number of population using one bed has fallen a quarter. The number of hospital beds and population per bed is shown in table: 1. Figure: 4 portray their co-relation.

Table: 1 Total bed and population per bed (1998-08)

Year	Total Bed	Population per bed
1998	90659	1440
1999	92174	1448
2000	93907	1456
2001	97945	1427
2002	98264	1454
2003	98684	1479
2004	99908	1492
2005	101490	1483
2006	102073	1508
2007	103285	1544
2008	103037	1575

Source: Pakistan Economic Survey

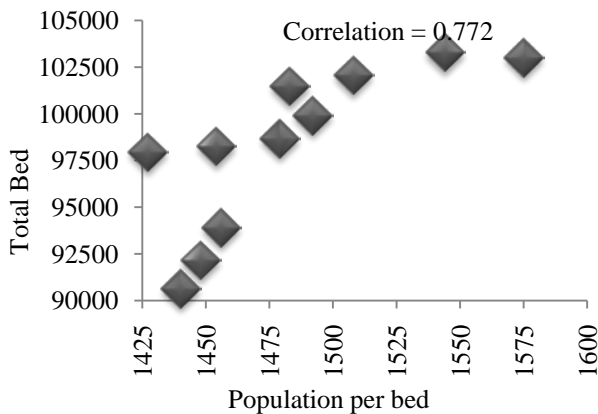


Figure: 4 Total bed and population/bed

From the above figure and table we can draw the following inferences:

- Both populations per bed and number of bed have increased. The increase in the number of population using each bed, decreases access to beds for patients that's why more beds are required to facilitate the patients conveniently.
- As listed in table: 1 and figure: 4 in the last decade (1998-2008), the number of population using one bed has increased from 1440 to 1575. The access to beds has decreased for patients, though the number of beds has increased. Unlike some health facilities, in 2001 and 2005 the number of population per bed has decreased which resulted from higher number of beds in those years and lower population growth.
- On average, each year 1238 beds have been added to total number of beds. This was to facilitate the additional people added to population each year.
- Unfortunately, the health has not improved in this regard as the population growth for example in 2008 was 1.8% and the growth in the number of beds was 1.7% in 2007 and - 0.24 % in 2008.
- In 2008 the number of beds has decreased due to dispose off and breakage of some beds.

VII. REGISTERED DOCTORS AND DENTISTS

The health conditions in British India, prior to the partition of subcontinent tell a grim story of neglect. Later, from the partition What Pakistan inherited was worse than India. At Independence Pakistan only had 1,200 doctors each meant for as many as 60,000 people. It was a vast landscape of filth, disease, malnutrition and mortality under-lined by virtual absence of resources for relief or remedy. The current situation shows very poor performance of Pakistan in health sector, although, the health structure has significantly improved compared to the time of independence. As of 2008 statistics there were 133,956 doctors which are 111 times more than the time of independence. 9012 dentists were registered in 2008 which is 4506 times more than the only 2 registered dentists in 1962. The number of registered doctors and dentists are shown in the table: 2 from 1998-2008 and similarly, their co-relation is drawn in figure: 5.

Table: 2 registered doctors and dentists (1998-2008)

Year	Registered Doctors	Registered Dentists
1998	83661	3434
1999	88082	3857
2000	92804	4165
2001	97226	4612
2002	102611	5058
2003	108130	5531
2004	113273	6128
2005	118062	6734
2006	123169	7438
2007	128076	8215
2008	133956	9012

Source: Economic survey of Pakistan.

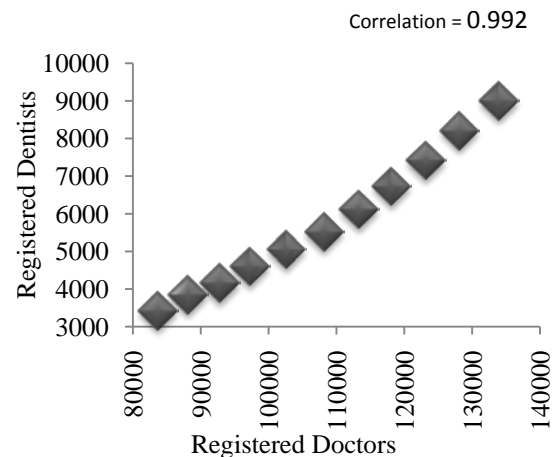


Figure: 5 Registered doctors and dentists

The following results are drawn from table: 2 and figure. 5:

- a) Registered doctors and dentists have increased every next year during 1998-2008. The doctors in 2008 have increased 1.6 times. This change has been significant for the registered dentists that have increased more than 2.6 times during the same period.
- b) As of 2008 statistics, the number of doctors was approximately 15 times more as the registered dentists in the country. This means that large number of patients needs medical services other than dentistry. The medical colleges produce doctors 15 times more than dentists and more budgets are allocated for this to happen.
- c) The increase in the number of dentists and doctors help the patients to meet doctors and dentists more personally and have easier and more access to dentists and doctors to help themselves at the time of emergency.

VIII. DOCTOR'S CONSULTING FEE

Pakistan as a developing country has a low per capita income. In fiscal year 2006-2007 the per capita income in Pakistan was \$ 878 which rose to \$1,027 in fiscal 2007-08, On the other hand poverty rate is high in Pakistan which leads to ill health. About 20% of population lives below the international poverty line. A recent health survey shows that 55 percent of the poor and 65 percent of the extremely poor were ill in Pakistan. Thus, to provide the access to the health and doctors, the fees for consulting doctor has not been good enough for poor people. In last four decades (1973-2003) the average doctor consulting fee was 37.1 rupees which has increased to average 56.6 rupees in the 5 years of 2004-2008.

The progress of doctors' consulting average fee for the years 1998 to 2008 is depicted in figure: 6 below.

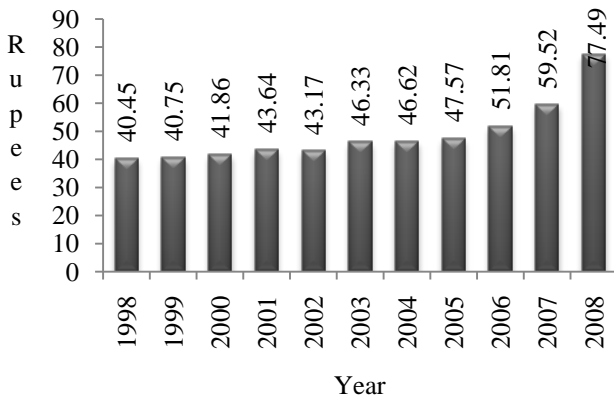


Figure: 6 Average doctor's consulting fee

In reference to above figure, the following interpretations are drawn:

- a) The doctors' consulting fee has approximately doubled during the last decade (1998-2008), increasing from 40 rupees to 77 rupees.
- b) The highest variance in consulting fee was in 2008 when it rose from 59 rupees to 77 rupees which was due to higher inflation rate and economic turmoil.
- c) The average fee for 10 years was round about 54Rs. Although it was affordable for richer class of society, the 20% population who were under poverty line could hardly afford this amount. And these are the people who more than half were infected to some type of diseases.

IX. POPULATION PER DOCTOR AND PER DENTIST

The population growth rate in Pakistan is high. As of 2010 it's the sixth populous country in the world having 169,477,000 populations behind Brazil and ahead of Russia. The number of doctors and dentist in 2004 were 113,273 and 6,128 respectively. This number is quite less compared to Russia who had 3,190,000 dentists in 2004. In the fiscal year 2007-2008 the population growth rate was 1.9 percent whereas, in 2008 the growth rate of doctors and dentists were 4.38 % and 8.088 % respectively. [1]

There were 1,212 persons for each doctor and 18,010 persons per dentists. In the last 5 decades (1960-2008) the number of doctors and dentist produced by the medical colleges has dramatically increased which has surpassed the population growth rate and decreased the number of persons treated by each doctor and dentist. The population per doctor and dentist is displayed in the in figure: 7.

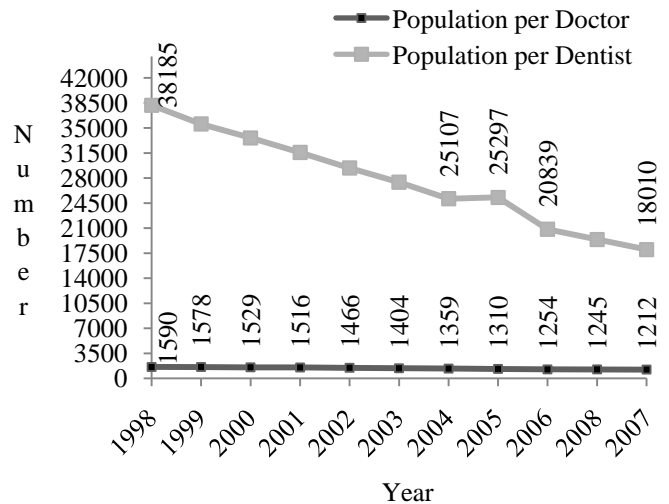


Figure: 7 Population per doctor and per dentist

The above figure shows that:

- a) The number of patients entertained by one doctor has gradually decreased within the years 1998 to 2008. This fact shows that each year more number of doctors were produced and the growth in the number of doctors were more than population growth.

- b) The decrease in population per doctor helps people consult doctors more conveniently within lesser time. For example; in 1998, 1590 patients had to meet only one doctor whereas, in 2008, 1212 patients could have one doctor to meet.
- c) Similarly, the number of population treated by each dentist has continually decreased within the period of 1998 to 2008, with only exception in the year 2005 when population per doctor increased by 190 persons, even though, the number of doctors increased by 4,789 personnel (see table: 2). The sole reason for this was the higher growth of population which rose from 1.98% in 2004 to 2.03% in 2005 (CIA world fact book).
- d) On average, within the last decade (1998-2008), each year, the number of people per doctor was 1,546 whereas, the people per dentist was 30,443 which was approximately 20 times more than population per doctor. This means that patients have more access to doctors rather than dentists and the number of dentists is not sufficient enough to meet the requirement of large population.

X. FINDINGS

- 1) The rural inhabitants who made half population of Pakistan had very poor health conditions and had far lesser access to health centers in comparison to urban residents.
- 2) Though the health expenditure on development and non-development sector has continually increased, it has been quite lesser than other developing countries.
- 3) Despite the increase of TB centers during 1998-2008, they have not been sufficient enough for the 250,000 incidence yearly.
- 4) The increase of MCH was not sufficient for the large number of births or high population growth.
- 5) The increase in population growth has been larger than increase in the number of beds which resulted increase in the number of population per bed. This means that larger number of population should use only one bed. The health performance has declined in this regard.
- 6) Although the increase in the number of dentists in the period 1998-2008 was 2.6 times and more than the increase in the number of doctors which was 1.6 times, the number of doctors has been dramatically more than the dentists operating in the country. Which means patients could more conveniently meet doctors.
- 7) There has been an improvement in the health structure because the patients per doctor and per dentists have decreased in number. The number of patients treated by a doctor was 20 times lesser than patients treated by a dentist which means that dentists in compare to doctors were insufficient in the country.

XI. CONCLUSION

The health facilities in Pakistan has improved and increased in number each year but this was surpassed by the population growth. Thus, the facilities have not been enough to meet the requirement of large population. People especially in rural areas faced more problems of poor health than urban inhabitants. Similarly, there has been increase in expenditure on health structure but remained insufficient for the population who grew faster than the increase in the expenditure. Furthermore, doctors each year has increased in larger number than the dentists. The increase in doctors and dentists number was more than the growth of population which decreased the population throng for each doctor and dentist for treatment.

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Requirement Change Management

Nagabhushan. S.V¹, Swarnalatha K.S²

Abstract—“Customer is king”. This is the principle which drives most of the business across the globe. If a business has to succeed, the customers must be happy. Only then, the profit can be made. Software Industry is no exception. Can the customers be made happy always? If yes, at what cost? “It is difficult to satisfy a customer always”. This is one of the most common problems stated by many industry experts. Why does this happen? In this competitive world, customers expect a product not only to just meet their requirements but also give the best performance. The market keeps changing as people have lots of options to choose from. In this kind of a situation, it becomes very essential to implement the changes frequently as required by the customers, in minimum time with high quality. This is one side of the problem. The other face is more challenging. If the requirements are not properly understood and implemented, then the right product can't be built. This means a loss to the company both in terms of resources & in terms of the client. Hence, effective Requirement Change Management is one of the key factors for the success of any project. Often, requirement changes are not addressed in a systematic manner and the documents are not kept updated and consistent. This necessitates a systematic approach to handle the Requirement changes. Requirement Change Management is a process to address the effective management of the changes in Software Requirement. Typically the objective is to minimize disruptions to the normal flow of SDLC activities. Many software failures and defects are the results of poor Software Requirements Management and definition. In some cases, when a client comes up with an additional issue, the resources required to resolve the same is very high. This remains subject of negotiation between the company and the client. Change control is the centerpiece of Requirements Management. So, an effective change control process is an essential part of software maintenance. While organizations often implement such a process to handle bug reports, it also helps to manage other elements like enhancement requests, functionality modifications, and changes to requirements for new systems under development.

Keyword- CR:Change Request POC:Proof of concept CCB: Change control board

I. INTRODUCTION

In order to sustain the business, it becomes important for a company to implement the changes required by the client at right time[1].

When the changes to the requirements affect the project plan, it is very important to have a process to understand the impact of the same. This necessitates the need for a process to understand, estimate and implement the changes in an effective & efficient manner with minimum resources. This process is the Requirement Change Management process[2].

Change management can be conducted on a continuous

basis or on a regular schedule. Effective change management programs are frequently sequential and gradually evolving programs that support compliance, acceptance, and internalization of Software Requirement changes. Hence there is a need for a standard process to maintain the integrity of the change management [3].

If the client requires a change to be implemented in the proposed system (software), the change management model makes sure that the required set of activities are done at right intervals with proper approvals by effective communication to the stakeholders.

II. REQUIREMENT CHANGE MANAGEMENT PROCESS

A simple Requirement Change Management consists of :

1. **Client** : The Change Initiator.
2. **Project Manager**: Understands and analyses the Change and tracks its progress during implementation.
3. **Team Members** : The team which implements the Change request
4. **Change Control Board** : The body of experts that decides whether to implement the change or not.

The client raises a request for the implementation of the new requirement by providing the required details to the system. This new request is routed to the CCB via the Project Manager. It is his responsibility to make the team members and CCB aware of the new requirement change suggested by the client. The typical activities done by the Project manager is as shown in Fig2. The Team Member(s) do the impact analysis and submit the same to the Project Manager Fig:3 The Change Control Board is the final committee which decides to implement the new change or not and their decision is final.

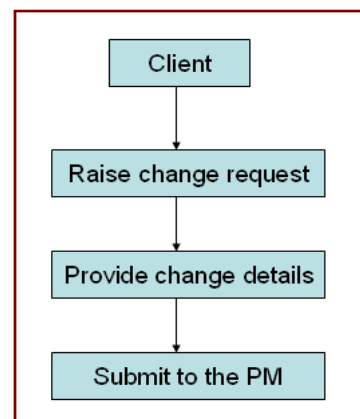


Fig 1

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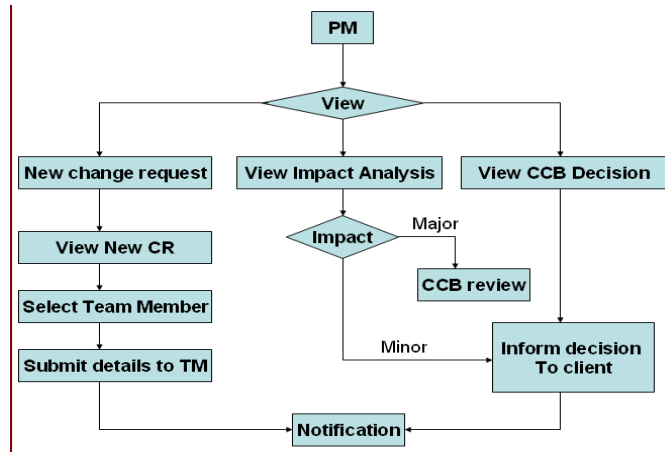


Fig 2

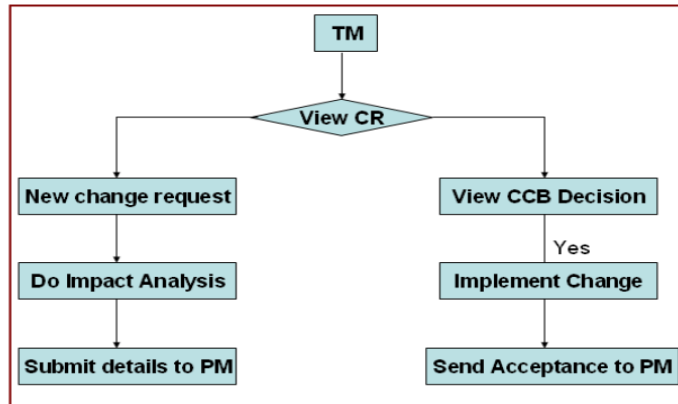


Fig 3

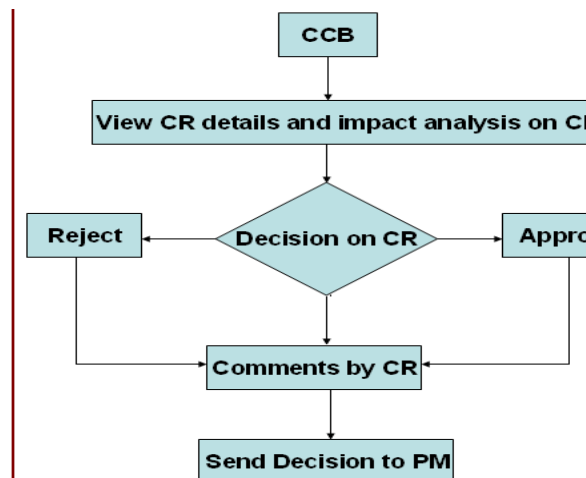


Fig 4

In general when the client comes with the new requirements (may be for existing project or ongoing project or completed project) implementing the new request for the customer is not always cost effective because efforts & time also come in to the picture and lot of changes take place in the software development activities. The result of this is partial implementation of the requirement. This leads to an unsatisfied client. In this way, there are chances of losing the client. If the contract period is over, then client has to bear additional amount which may be high and not affordable. So a model has to be developed in such a way that new requirements can be implemented by the company in a cost effective and flexible manner without many efforts. Therefore a prototyping model is required to describe some new changes to the software requirements in a systematic manner.

III. CONCLUSION

The model has to describe change process to all people involved and the information should be complete, unbiased, reliable, transparent, and timely. Implementing new change for the requirement should be aligned with organizational objectives, macro environmental trends. It helps in identifying gaps and opportunities for improvement in requirement engineering activities, defining and implementing best practice and establishing process improvement roadmaps. Any change shall be assessed before accepting it and changes shall be authorized and documented. Authorized users who can request changes and also approval mechanism for change request shall be defined. At any point of time change initiator should know the status of his new change request.

IV. ACKNOWLEDGEMENT

We wish to thank all the authors for the providing the informational support

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Eteaching/Epedagogy Threats & Opportunities for Teachers In Heis

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{ GJMBR-A Classification (FOR)
930203 }

Abstract- Information and Communication technologies (ICTs) have not only changed the learning process for the students but also the teaching theories, models and practices. Teacher is now an eTeacher who is fully equipped with the knowledge and applications of different digital gadgets in preparing for lecture, delivering to students, as well as coaching, mentoring and facilitating purposes. Given these contemporary requirements from a teacher, he is no more a 'sage on the stage' rather a 'guide on side' allowing self-learning to the students. It is however; pinpointed by a huge body of research that adoption of ICTs by the teachers is neither effective nor quick due to several problems particularly in the developing countries like Pakistan. This paper is an effort to bring together the threats and opportunities for eTeacher and eTeaching especially in the higher education of the developing countries.

Keywords: ICTs, eTeacher, Virtual-class/campus, Blended-learning.

I. INTRODUCTION

ICT is the most fundamental of changes in education so far (Jager & Lokman, 1999). The phenomenal development of sophisticated communication technologies has pushed universities, companies and educational institutions to experiment with alternatives to the traditional classroom teaching methods (Favretto et al., 2003). The increasing speed and dissemination of ICT is already showing that our local universities and learning and research communities are no more strictly local rather they have gone global (Beebe, 2004). Integrating technology in teaching and learning transforms the teacher's role from being a "sage on the stage" to a "guide on the side", and student roles also change from being passive receivers of content to being more active participants and partners in the learning process (Mehra & Mital, 2007). Information technology has significant potential in education (Sirkemaa, 2001) because pedagogical improvement can be successfully achieved by using technology (Zapalska, 2004), for example, in a very short time, technology has become integrated so quickly into our consciousness that we cannot fully absorb the full range of changes due to ICTs (Drucker, 2006). The teachers of 21st century have to update his/her knowledge for making appropriate use of new technologies either as a teacher in the classroom, or as an eTeacher or eModerator of open and distance learning (Blázquez & Díaz, 2006). The design of computer-based learning environments has undergone a paradigm shift; moving away from the instructions to promote technical rationality grounded in objectivism, to the application of computers for cognitive tools usable in constructivist learning (Young, 2003). In education, many factors complicate the process of innovation including

technical, legal and social while education do not readily accepts change rather reacts gradually to these external pressures (Aaron et al, 2004). ICTs are changing not only the face of education but also the nature of work and the workplace. The knowledge revolution and globalization is making knowledge-based industries as successful ventures. Knowledge-based industries require an educated labor force of computer-literate individuals who themselves understand and can harness the power of ICT. In response to the demands for producing such a labor force, many countries have changed the objectives of their education system and have directed much of their attention to the development of ICT skills in schools (Ezziane, 2007). The teacher's role has changed. The centre of gravity has moved from the passive acceptance of "well-cooked" teacher's knowledge to active "self-cooked" inputs (Hvorecký, 2005). The pedagogical and socio-economic forces that provoke educational applications of ICTs include greater information access; greater communication; synchronous and asynchronous learning; increased cooperation and collaboration, cost-effectiveness and pedagogical improvement (Sife et al., 2007). Despite research and testimony that technology is being used by more faculty, the diffusion of technological innovations for teaching and learning has not been widespread, nor has IT become deeply integrated into the curriculum due to several problems like perceptual differences of users (Mehra & Mital, 2007). Given the differences of perceptions about ICTs, eLearning projects has become challenging therefore developers have to consider a variety of factors including multiple approaches and attitudes, project management techniques, user participation, user training, change management and the context within which the development and use of eLearning is about to happen (Nawaz & Kundi, 2010).

II. ICTS IN HIGHER EDUCATION

Computer technologies are a mainstream issue in higher education, for example, in the Western European context, it is now an accepted practice to integrate ICT in major logistical, organizational and educational processes of higher education (Valcke, 2004). There is no doubt that ICTs are seen as central to education in the 21st century thus, there are implications for educators in the communication aspects of the culture (Knight et al., 2006). For example, modern society is called the 'broadband society' that requires a substantial transformation of our experience of telecommunications based on these technologies allowing ICTs to be used everywhere, all the time and by everybody (COST Action 298, 2007). It is now

visible that most universities today offer some form of eLearning (Kanuka, 2007). ICT education is seen as "the dominant engine for productivity improvement and business opportunities" and "a key factor for generating future employment"(Hagan, 2003). However, educational cultures can pass through different phases of maturity regarding change, ready to move forward, backward, or maybe not at all (Aaron et al, 2004). ICTs encompass the effective use of equipment and programs to access, retrieve, convert, store, organize, manipulate and present data and information that has become increasingly important in tertiary education (Gay et al., 2006). As we enter the third millennium, education via the internet, intranet or network represents great and exciting opportunities for both educators and learners (Manochehr, 2007). Supporters claim that the use of information technologies in education will increase communication among students and teachers, provide access to resources that may otherwise not be available, and encourage "authentic" learning as students access "real-world" data not provided by textbooks (Aaron et al, 2004). The higher academic institutions of a country are pioneers in adopting and using ICTs (Roknuzzaman, 2006). In respect of teaching there is a growing pressure, in nearly all societies, to improve its quality, e.g. in order to deal with the challenges of mass education where the ratio of lecturers/tutors to students is worse than in the past and is deteriorating. Politicians, in particular, regard the new ICTs as a cheap and innovative device for the improvement of both the quality and the quantity of teaching. Taking a realistic view, teaching, whether it be face-to-face or e-learning, is not always numbered amongst the most beloved tasks in our universities consequences (Aviram & Eshet-Alkalai, 2006). Technology can be utilized in education in several ways. This continuum starts from information delivery and ends with cognitive tools. Information delivery means that technology is used primarily to access and deliver information that is categorized and stored into digital format. For example, a library system may be considered as an information delivery system. Cognitive tools refer to adaptive technology or systems that are developed to support and improve the learning process (Sirkemaa, 2001). ICT is viewed, in this context, as a powerful tool for change, it is not only responsible for social change, it is also attributed powers beyond any other technology in the past (Sasseville, 2004). On the one hand, there have been huge investments by the educational sector on the establishment and maintenance of educational media for students. On the other hand, there has been very little and sporadic knowledge about the usage of such media in education (Arulchelvan & Viswanathan, 2006).

III. ETEACHING

In politics, furthermore, there is hardly any doubt about the future necessity of specific ICT knowledge that a teacher has to possess in order to function in his profession. Instruction should be compulsory if a teacher lacks this knowledge (Jager & Lokman, 1999). Technology is much more than computers in the classroom. There are two types

of eLearning: asynchronous or self-paced, and synchronous or instructor-led. The degree of interactivity, sophistication and expense is different in each of the types. E-learning is not traditional computer based learning (CBL). Neither is it downloaded to a hard drive like CBL; rather, it is stored on a server and accessed over a network by a web browser. E-learning programs are saved on the internet/intranet and can be accessed any time, anywhere, regardless of the computer platform, as long as the user has subscribed to an internet service provider (ISP) (Manochehr, 2007). ICTs have affected our life profoundly – one can work, do shopping and keep in touch with far-away relatives with an inexpensive personal computer. In education, ICTs have highlighted the importance of continuous IT education that makes it possible to use changing technology. Secondly, IT has introduced new tools for educators and students to be used in the learning process. Thirdly, there has been an explosion in teaching and learning with new technology. The pace of technological change continues as ever smaller, portable computers are being introduced that make it possible to connect anywhere and anytime. However, it can be argued whether technology is being utilized so that it facilitates learning in the best possible way (Sirkemaa, 2001). Lecturers are able to break away from professional isolation. With ICTs, they can easily connect with lecturers from other countries and with sources of teaching materials.

- 1) With information more readily available learners are not dependent on lecturers and librarians for information.
- 2) ICTs are altering the functions of libraries and changing the role of librarians.
- 3) Researchers are no longer faced with a lack of information but a glut of information (Beebe, 2004).

ICT is generally perceived as a welcome addition to the arsenal of pedagogical tools and approaches in the classroom. Learning with technology is considered important because it is quickly becoming a common way of acquiring knowledge, but technology is always subservient to the learning goals set by the teacher (Sasseville, 2004). Over the years, educational technology is playing an important role in the innovation of education, providing both teachers and students with more options and flexibility in their teaching practices. With the Internet and computer technology available to most teachers, educational technology becomes increasingly indispensable in the field of education (Oh & Russell, 2004). Internet-based educational technology can contribute to substantial improvements in education. Digital content and networked applications will transform teaching and learning. The role technology (e.g., email or conferencing) plays in facilitating organizational learning is by enabling improved forms of communication and sharing (Laffey & Musser, 2006). ETeaching and eLearning has gone through several stages of development (Gray et al., 2003), for example:

1. In the 1970s and 1980s, it was referred to as Computer Assisted Learning, Computer Based Training or Technology Based Training. Pedagogically, early program

often involved electronic page turning and were didactic in approach – a form of transmitted knowledge.

2. By the 1990s this form of learning was beginning to be supplemented by the use of other media, particularly e-mail and discussion groups. Although courseware continued to be used, this was accompanied by a discussion forum where participants could read and post messages, and involve in mutual support and debate. In a sense, this is a negotiated knowledge.

3. Modern VLEs comprise both course materials as well as the interaction through a range of communication tools. There are important changes taking place in web development that will affect the way in which it is used for teaching and learning. It is growing and now includes millions of pages, sites archives, portals and databases. Likewise, social software has emerged and making virtual learning a king of social and networked learning (Klamma et al., (2007). The new learning environment differs from the one we are familiar with; the teacher has to cope with many more uncertainties. The teacher cannot create new learning environments completely independently. He has to depend on all kinds of things like the technical infrastructure, timetables and the activities of other teachers. In doing so, the teacher loses a part of his autonomy and therefore, he is forced to collaborate with his colleagues in a totally different manner (Jager & Lokman, 1999). The new learning process brings up the following shifts:

- 1) from linear to hypermedia learning,
- 2) from instruction to construction and discovery,
- 3) from teacher-centered to learner-centered education,
- 4) from absorbing material to learning how to navigate and how to learn,
- 5) from school to lifelong learning,
- 6) from one-size-fits-all to customized learning,
- 7) from learning as torture to learning as fun, and,
- 8) from the teacher as transmitter to the teacher as facilitator (Dinevski & Kokol, 2005).

IV. THREATS & OPPORTUNITIES FOR TEACHERS

New things are intimidating and are causing resistance (Jager & Lokman, 1999). Designing and delivering e-learning is not simply a matter of selecting a tutoring team with subject matter expertise and/or technical skills, but is also choosing educationalists with pedagogical, information and communication skills that are required to manage and facilitate online learning (McPherson & Nunes, 2004). Many teacher educators and teacher education programs have been experimenting with the use of technology over the years. Despite their efforts, there are still challenges and concerns regarding teacher's ability to integrate technology into teaching and learning activities and their comfort in doing so (Oh & Russell, 2004). It can be also said that teachers are still in the process of evaluating the proper way of using information technology for teaching and learning and that this technology has not yet been completely

integrated into their craft as other more traditional tools (Sasseville, 2004). Rapid advances in ICTs demand changes to our education systems (Knight et al., 2006). Technology is by nature disruptive, and so, demands new investments of time, money, space, changes in the way people do things, new skills and so on (Aaron et al, 2004). Thus, the marriage between education and technology has often been rocky (Buzhardt & Linda, 2005). While most educators appear to acknowledge the importance and relevance of Information and Communication Technologies within teaching, difficulties nevertheless continue to be experienced within the processes of adopting these technologies. Significantly, there is a gap between the valuing and relevance of 'new skills' and the extent to which they are practiced (Knight et al., 2006). It is apparent from this study that the availability of the technology itself will not instigate the aspired goals. Cultural and pedagogic change should occur for the technology to be implemented to its full effectiveness and achieve the goals it was designed to fulfil (Allan, 2007). ICT is not neutral but supported by an ideological complex that borrows ideas to present currents of thought as diverse as the globalization of the economy, the new information society, the end of national policy and the advent of world government (Sasseville, 2004). There is also great uncertainty among decision-makers and managers as well as among developers, trainers and learners: instructors find themselves confronted with a new role in which they are tutors and facilitators for learning processes. Software developers more and more have to go beyond the paradigms of their own discipline when designing and implementing learning software; they are in need to seek interdisciplinary exchange with teachers, authors and learners (Ehlers, 2005). Despite the best of intentions, many of these projects ultimately fail. There are many reasons for this: technology may not be the appropriate solution in the first place, projects may be poorly-implemented, equipment may be improperly used, there may be a lack of follow-up, stakeholders may not receive adequate training to support the program, or it may simply be difficult to create and sustain a project within a shifting social and political context (Wells, 2007). Teaching technologies offer pedagogical advantages which vary with specific contexts (Aaron et al, 2004). The research shows that teachers are not opposed to ICT integration; they're interested in effective ways to implement learning. The organizational context into which ICT is integrated is also a major impediment when it comes to changing the teacher's practice (Sasseville, 2004). There are documented differences between the success and failure factors in the developed and developing countries with regard to the development and use of eLearning in higher education institutions (HEIs). These differences are widely attributed to the demographic variations in the context of eLearning development and use. Unless these differences are skillfully identified and accommodated as such into the development and use models, eLearning efforts are reported to be caught in problems in the construction, use and progress of the eLearning environments in the institutions for teaching, learning and administrative purposes (Nawaz & Kundi, 2010).

1) *Major Threats*

Integrating technology into the classroom is not unanimously accepted among scholars and teachers and, according to some, it entails many dangers. For instance, computerizing education could limit the diversity of pedagogical approaches to the only model of academic efficiency and performance implicitly promoted by technology (Sasseville, 2004). Low collaborative activities and the significant preference of print over other forms of presentation indicate the prevalence of traditional dynamics of teacher-centered learning contexts where communication is uni-directional flowing from the teacher to the learner and learning materials are disseminated to the students in a print format (Allan, 2007). There are a number of challenges that face universities in developing countries as they seek to implement the e-learning systems. African universities which should be in the forefront of ensuring Africa's participation in the ICT revolution, they are themselves unable and ill-prepared to play such a leadership role. This is because of the information infrastructure of African universities which is poorly developed and inequitably distributed (Sife et al., 2007). Our world's culture is no longer only literary and artistic, it is also technologic and scientific. ICT is at the crossroads of these two aspects. Refusing this is condemning yourself to illiteracy, not being able to integrate yourself into today's world (Sasseville, 2004). It is important to acknowledge that quality of a learning process is not something that is delivered to a learner by an e-learning provider but rather constitutes a process of co-production between the learner and the learning-environment (Ehlers, 2005). However, despite the potential benefits of using technology in the classroom, some teachers were found to shy away from using it effectively or at all, which may bring into focus the role of teacher training programs not only in helping teachers use technology effectively but also to change some of their practices and attitudes towards teaching and learning (Bataineh et al., 2006). A researcher reports that investments in infrastructure and increased access to technology did not lead to increased integration, instead, most teachers remained "occasional" or "non-users" of classroom technology (p. 813). They state that limited time to learn and implement new technology was considered a serious barrier as well as poorly implemented professional development and defects in the technology itself (Cagiltay et al., 2006). In India, a survey revealed that new age technology teaching was partly intimidating. A large population found it easier to prepare lectures on transparencies rather than use the computer (Mehra & Mital, 2007). Technological change is not perceived as a collective experience - or an experiment in social change - but more of a personal challenge. Solutions to the problem of integrating technological innovations into the classroom are more related to the individual teaching practice. Teachers were reluctant to integrate technological innovations into their daily scholarly activities and, at least in Quebec, this situation has not really changed over the past few years (Sasseville, 2004). In spite of a unanimous agreement on the benefits of instructional

technology there were doubts with respect to matching of their own personal teaching style with instructional technology (Mehra & Mital, 2007). There is a continuum of perceptions and attitudes of eLearning-users, with those who dislike information and communication technologies (ICTs) on one extreme and those who are their promoters on the other end while many groups can be located at different points between the two extremes. There is both difference of kind as well as difference of degree between the conceptions and behavior of users about the nature and role of ICTs in higher education. The research reveals that these differences of attitudes stem from the contextual factors relating to individual, group and organizational characteristics (Nawaz & Kundi, 2010).

2) *Opportunities to Improve*

Universities are now expected to contribute to society by widening access to higher education, continuing professional development, applied research, contributing to local economic impact, and improving social inclusion (Beebe, 2004). Instructors are feeling increasing pressure to use IT, but they commonly face several obstacles when attempting to use technological teaching techniques. Institutions of higher education must strategically develop IT integration plans that help overcome these obstacles, addressing the needs of diverse pedagogical agendas and multiple levels of comfort with technology. Barriers can make technology use frustrating for the technologically perceptive, let alone the many teachers who may be somewhat techno-phobic (Ezziane, 2007). The expanded use of computers in education continues despite research having failed to accrue definite benefits in learner's performance. The main reason for finding no significant difference between the traditional education system and the system using technology is the instructional methods (Cagiltay et al., 2006). A large body of literature supports the idea that technology training is the major factor that could help teachers develop positive attitudes toward technology and integrating technology into curriculum (Zhao & LeAnna-Bryant, 2006). People acquire their technology literacy in two ways: formally through school programs or in the workplace, and informally, whether at home, from friends, or by themselves (Ezziane, 2007). Teachers are adapting their practice to the use of information technology but only to a certain extent. They are not willing to put aside or throw away years of precious experience simply to adopt a tool that is generally perceived as ill-fitted to the framework of their craft. Teachers are also refusing the very popular conception of professional merit by technological means. They do not want their competence as educational professionals evaluated merely by their ability to use the technology in the classroom (Sasseville, 2004). Teachers need training in environments that support technology integration in curriculum areas that can be replicated in their own classrooms not training that focuses on software applications and skill development. Teachers should possess and draw on a rich knowledge base of content, pedagogy, and technology to provide relevant and meaningful learning

experiences for all students. Teachers need to identify needs, plan, implement, and assess classroom instruction through the collaborative use of technology and other resources. Teachers are moving beyond administrative uses of technology to instructional uses that enhance teaching and student learning (Willis, 2006). Understanding teachers' perceptions of technology integration training and its impact on their instructional practice will help both the technology training programs and social studies (Zhao & LeAnna-Bryant, 2006). Developing and implementing a strategic plan that includes educational technology is often a difficult and complex process (Ford, 1996). A strategic plan for educational technology refers to both the technological infrastructure and the manner that educational technology will be adopted in the teaching and learning environment (Stockley, 2004). Taken together, our studies demonstrate that planning for the integration of teaching technologies can become more systematic through a variety of tools and techniques. As an intensely interdisciplinary activity, this sort of planning involves many players and processes acting simultaneously, interdependently. Any attempt to model it must envision a dynamic, even cyclical process of planning, implementation, evaluation and revision. This should not surprise us, because it mirrors education itself (Aaron et al, 2004). Technology integration training is effective at a basic level, but it alone cannot lead to higher levels of technology integration (Zhao & LeAnna-Bryant, 2006). ICT can be seen as a means to define oneself professionally. Teachers are seeing themselves, whether they like it or not, at the forefront of a new wave of teaching. The use of ICT, even minimally, is helping them build a positive self-image as professionals (Sasseville, 2004). Many exciting applications of information technology in classrooms validate that new technology-based models of teaching and learning have the power to dramatically improve educational outcomes. But, classroom computers that are acquired as panaceas end up as doorstops. Unless other simultaneous innovations in pedagogy, curriculum, assessment, and school organization are coupled to the usage of instructional technology, the time and effort expended on implementing these devices produces few improvements in educational outcomes - and reinforces many educators' cynicism about fads based on magical machines (Mehra & Mital, 2007).

3) *Digital Literacy of Teachers*

The rapid development of digital technologies in the digital era presents individuals in the emerging information society with situations that require them to employ a growing assortment of cognitive skills in order to perform and solve problems in digital environments. These skills are often referred to as "digital literacy", which is presented as a special kind of mindset that enables users to perform intuitively in digital environments, and to easily and effectively access the wide range of knowledge embedded in these environments (Aviram & Eshet-Alkalai, 2006). There is no agreement among scholars on the definition and measurement of computer literacy. While some researchers define and measure computer literacy in terms of the

number of computer courses completed, the amount of time spent on the computer, and having a computer at home, others consider the familiarity with computer terms, experiences, and ability. Computer literacy is also defined as understanding computer characteristics, capabilities, and applications as well as the ability to implement this knowledge in the skillful, productive use of computer applications to individual roles in society (Ezziane, 2007). In the same way that basic literacy has long been promoted as the key to closing the development gap between rich and poor, proponents of social inclusion through ICTs propose a focus on electronic literacy as a key to overcoming the digital divide. This reflects the argument that access to physical hardware is of little use if you don't have the means to use it effectively and meaningfully (Macleod, 2005). Educators need to recognize the need to constantly update skills and knowledge, not only of their students but their own skills as well. These ICTs have the potential to significantly influence teaching practice, students' learning and engagement in the learning process (Knight et al., 2006). Most teachers do not learn to use computers through coursework which seems to have little or no effect on pre-service teachers' beliefs about their abilities or use of what they have learned in their actual teaching practice. Teachers use technology most frequently to prepare or supplement instruction rather than for purposes of instructional delivery (Bataneh et al., 2006). A number of communities have an interest in and perspectives on the relationship between people and ICTs. These include industry, academia, designers, policy makers and other institutions (COST Action 298, 2007). The functions attributed to the e-teacher, considered as a mentor, coach or facilitator, are multiple as others have previously identified). These can be outlined as follows:

1. Management Function: The teacher plans the teaching program, which includes objectives, timetable, rules and procedures, content development and establishment of the practical work and interactive activities.
2. Intellectual Function: This is the traditional teaching function. The teacher should know the syllabus and the particular subject which will inform the learning content.
3. Social Function: This is considered as the fundamental function in e-training; the teacher should create a comfortable learning atmosphere, interact with the students and follow their activities. The teacher should animate, motivate and facilitate feed-back. In order to fulfill this dynamic role, the teacher should design activities specifically for each objective and content, as well as motivating and encouraging the students.
4. In order to perform these functions, teacher training should focus on the development of skills like: Professional: knowing the material, the contents, activities, didactic methods and teaching plan, etc; Technical: although it is not necessary for them to be as expert as the support personnel, they should have basic skills which allow them to carry out their function appropriately, etc; and Personal: interacting, giving feedback, receptive capacity, initiative, creativity, empathy etc (Blázquez & Díaz, 2006).

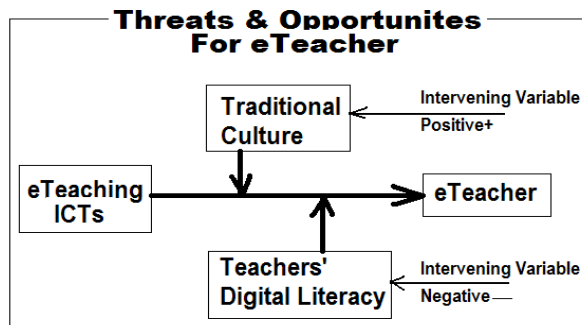
Digital literacy is usually conceived of as a combination of technical-procedural, cognitive and emotional-social skills. For instance, using a computer program is conceived as involving procedural skills, as well as cognitive skills (i.e., the ability to intuitively decipher or "read" visual messages embedded in graphic user interfaces). With the increasing exposure to digital working and learning environments, digital literacy has become a 'survival skill' (Aviram & Eshet-Alkalai, 2006). eTeacher is required to perform computer-based mentoring, coaching and facilitating. Mentoring is a one-to-one relationship between a teacher and student in which the expert guides the novice by behavioral and cognitive modeling, academic and career counseling, emotional and scholarly support, advice, professional networking, and assessment. Coaching is observing learners' performance and providing encouragement, diagnosis, directions, feedback, motivational prompts, monitoring and regulating learner performance, provoking reflection, and perturbing learners' models. Facilitating is providing technical, pedagogical, managerial, and social activities that maintain sustained and authentic communication between and among instructors and students (Blázquez & Díaz, 2006).

V. DISCUSSIONS

Pedagogical or intellectual roles are some of the most important for the e-Learning process (McPherson & Nunes, 2004). In ICTs, unlike most other subjects, teachers have to be prepared for the fact that some of their students may know more about the subject than they do (Cawson, 2005). Even though they will never replace teachers, computers can provide excellent and fairly inexpensive supplementary materials to enhance classroom instruction. Furthermore, computers have been found not only to promote visual, verbal and kinesthetic learning, higher-level thinking, and problem solving but also to offer immediate feedback, hands-on learning, and collaborative instruction (Bataneh et al., 2006). Education systems need to draw on the collective intellectual capital of educators (Knight et al., 2006). In times of mass education, when the old ideal of research-based teaching (mind you: own research) is not always upheld, networked preparation of teaching is an appropriate and practical way of navigating the rocks of protected knowledge and sailing the vast seas of Internet information; although this collaborative approach requires new views on organisational behaviour and communication, in particular in cross-cultural settings (Aviram & Eshet-Alkalai, 2006). Over the past 25 years, models and approaches of computer and information literacy have started to merge. Looking back chronologically (over the literature), it is obvious that technology paradigm shifts changed not only the way of computing but also how the technology itself is perceived by society. Universities and even smaller departments within organizations found themselves able to afford dedicated computing power. Computer literacy emerged then as a means of making people aware of this technology (Ezziane, 2007). Teachers still believe that what really defines them is the ability to establish a bond between teacher and student;

teaching is, first and foremost, the ability to use that bond to create a positive and productive way of learning. Human relations still remain at the core of their craft (Sasseville, 2004). However, the burden of bridging this gap between technology and teachers is placed squarely in the laps of teachers. They face the daunting task of not only using the technology, but also showing the expected benefits of its use. Thus, teachers "fear of technology" or lack of technological expertise is often linked to teachers' use of technology in their classroom/instructional practices. Another barrier often cited is the contextual restraints of school settings which tend to hinder the implementation of any significant change. However, we rarely look to the specific technology itself and its usability as contributing to the lack of technology integration in classroom practices and instruction (Buzhardt & Linda, 2005). Teachers play a crucial role in the adoption and implementation of ICT in education; however, studies show that teachers lack the necessary ICT knowledge and skills (Allan, 2007). Thus, the transition from traditional instruction to online teaching is best accomplished by systematically addressing the needs of faculty (Phillips et al., 2008). A strategic plan that focuses on educational technology should be connected to both the institutional mission and vision, and that the plan should fit into the overall institutional information strategy, culture, values, and history (Stockley, 2004). Likewise, project management, instructional design, team-based course development and other academic and administrative techniques perfected in distance education environments, are crucial to the success of technology integration in a broader institutional context (Aaron et al, 2004). Moreover, having faculty and technology staff in constant communication about practices that result in less-than-desirable experiences has greatly improved the likelihood of having adequate lead-time to effectively adapt to new technological tools (Ezziane, 2007). Allowing for the above discussion it can be postulated that ICTs have to be absorbed by a teacher to become an eTeacher. This relationship between eTeaching and teacher is mediated by the traditional culture which hinders in adopting ICTs. However, this situation can be turned around by working on the programs for the digital literacy of the teachers using training and continuous technical support as the major tools for computer literacy. A Theoretical model of the digital threats and opportunities is given in figure 1 below.

Figure.1 A Conceptual Model of the Threats & Opportunities for eTeacher



VI. CONCLUSIONS

Given that most students almost anytime, anywhere can access various forms of information technology - MP3, cell phones, PDAs - it does not make sense to exclude this part of their experience and ability from the educational part. Together, these challenges to the instructor's monopoly on sources of learning can serve as a catalyst for an examination of pedagogy, perhaps moving practice from a didactic to a more collaborative approach (Aaron et al, 2004). Furthermore, teachers are constantly advocated and pushed to use technology by various agencies including media, educational government, professional associations, and parents (Zhao & LeAnna-Bryant, 2006). Thus, personal usage of ICT within student teachers own learning will form their models of teaching practices (Allan, 2007). The rapid growth of e-learning is occurring without our understanding the differences between how students learn in an online environment and in the more traditional setting" (Luck & Norton, 2005). However, technology training alone did not necessarily ensure that these teachers would infuse technology into their routine instruction and a radical change in their instructional practices would occur. However, they need to get technical and human resource support for continuous technology integration after the training (Zhao & LeAnna-Bryant, 2006). There is a need to equip pre-service teachers with not only the technology skills, but also the knowledge and skills needed to integrate the technology into the classroom (Moursund & Bielefeldt, 1999; Price & Herrera, 2002; Graham, Culatta, Pratt, & West, 2004). Otherwise, the result would be curricula that "teach people how to use specific types of technology, not how to solve educational problems using technology when needed and appropriate" (Chan & Lee, 2007). Teachers believe that they can control recent changes in education with knowledge accumulated over the years from their professional experiences. They perceive professional knowledge as a way to steer technological change in a direction they can understand and which they feel is beneficial to their students. Cost-effectiveness may be

imperative, but the student is expected to be at the center of any kind of change, not technology. Choices are restricted to the classroom community (Sasseville, 2004). To effectively infuse technology into the curriculum, teachers need to

participate in intensive curriculum-based technology training that move them beyond the attainment of basic computer skills to activities that teach them how to seamlessly integrate technology into the curriculum (Zhao & LeAnna-Bryant, 2006). The design and development principles need to be provided that align with teacher and instructors understanding of student requirements (Young, 2003). Successfully integrating them depends on identifying pedagogical goals and then planning for many decisions demanded by technological change (Aaron et al, 2004). Culture is another highly influential mediator where pedagogical model is also a part of the culture of the organization. It is thus expected that new tools and a new practice supports problem oriented project pedagogy or at least doesn't contradict it. The most prominent and most difficult challenge is probably the need for a broad ownership of the implementation and its results. Without broad ownership among the potential participants in the implementation they are likely to ignore implementation of ICT or engage in opposing these projects (Nyvang, 2006). It should however, be noted that much more research is needed regarding teaching orientations, personal traits and the construction of online learning environments (Phillips et al., 2008).

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Sustained Technical Support: Issue & Prospects for E-Learning In Heis

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Abstract-E-Learning tools in Higher Education Institution's HEIs are sophisticated therefore demand technical expertise for their effective use. The university constituents (teachers, students and administrators) are given eTraining but this is not enough. Every eLearning system establishes a basic 'infrastructure' of computers, networks, communications and a technical department filled with ICT professionals to consistently maintain and upgrade the infrastructure, train the users and continuously provide technical support as and when required by them. Given the non-stop nature of technical support for eLearning, HEIs are facing issues in creating robust infrastructural facilities that are both competitive with the external environment and compatible with the internal user requirements. This article is a compendium of the touchy aspects in sustained technical support for eLearning in HEIs. 120Words.

Keywords- ICTs, Educational Technologies, eTeaching, ePedagogy, eLearning, eEducation, eReadiness, eMaturity, LMS, LCMS, ERP, CMS.

I. INTRODUCTION

Given the global availability of educational technologies, researchers are reporting that instructional technologies have staged a platform of opportunities for all the HEIs in the world (Tinio, 2002) and these are more profitable for the developing countries in terms of solving their long standing education issues along with other economic and political problems. For example, online education facilities are helping the developing nations to solve their problems of accessing masses for execution, which has not been possible through providing physical education facilities at that large scale (Hvorecký et al., 2005). Similarly, ICTs are helping less advanced countries to reduce their sense of isolation in the world by connecting the world community online through internet facilities to learn, enjoy and do business and politics (Sife et al., 2007). The success of the eLearning projects is "often dependent on the skills and quality of technical support provided to end-users (Gray et al., 2003)." Without proper technology support and maintenance of even the most current and sophisticated hardware and software, the ability of teachers and students to access and use technology is severely compromised (Valdez et al., 2004). Furthermore, there is communication and knowledge-gap between developers and users in adopting the new systems (Nawaz et al., 2007). In a study of four institutions, the successful development of online programs was attributed to providing adequate levels of pedagogical guidance and technical support. Though institutional variations exist, defining technical support is a rather straightforward proposition (Phillips et al., 2008). The need for assistance and support in using technology is most important in the

beginning of studies therefore, it is important to create an environment which helps students to "learn how to learn" effectively (Sirkemaa, 2001). However, educational technologies do not start working just as they are purchased and possessed by the users or organizations. They have to be harnessed and tamed (Stephenson, 2006) in accordance with the requirements of the user and environment where they are supposed to work. There is along array of such technologies and all are not good for every institution rather there needs to be a rational choice of relevant hardware, software and networking facilities (Nyvang, 2006). Furthermore, there is the problem of 'leading-edge-syndrome' around the world (Tinio, 2002). It refers to the selection of cutting-edge technologies for eLearning projects. Although research suggests again and again that 'tested technologies' are better than the new and untested options, most of the institutions are opting for latest technologies, which are not only sophisticated, complicated but also expensive. The research suggests that most of the time these 'leading-edge technologies turn into bleeding-edge technologies because of over costs, problems of learning and issues of their integration with the existing traditional systems effectively (Ezziane, 2007). However, this is a big problem for the developed states and not the developing countries. In the developing states, educational technologies are not the problem in themselves rather their availability and then their taming for the individual and organizational requirements is challenge for both the developers and users. The biggest technological issue for the countries like Pakistan is the creation of country wide digital infrastructure, facilities and services at every HEI level (ADB, 2002; Hameed, 2007). At the institutional level, the widely reported technological problems relate to the existence and support of technical unit in the institute. Users need continuous and timely help from the technical department, which is reportedly mostly unavailable (Moolman & Bignaut, 2008). Thus the dependence on the technical department and staff is a big issue for the eLearning users.

II. EDUCATIONAL TECHNOLOGIES IN HEIS

As a major consumer of software applications and web services, educators should join this movement by taking a stronger interest in learning about the usability of the technology they purchase (Buzhardt & Heitzman-Powell, 2005). High-quality IT literacy teaching requires the administration to provide support for faculty by adequately funding the staffing of IT services personnel to levels that can accommodate the demands placed upon them (Ezziane, 2007). Information Technology is currently being used effectively in management education for information access

and delivery in libraries, research and development, as a communication medium, and for teaching and learning. Increased access to and use of the Internet is making a unique contribution to the teaching and learning process and will be an important part of future strategies to provide services to increased number of students in very diverse locations (Mehra & Mital, 2007). At the broader level, an eLearning solution for any HEI consists of three elements: Content, Technology and Services (Dinevski & Kokol, 2005).

1. Content: In the eLearning environment, the new forms of educational content (radio programs, Web-based courses, interactive multimedia on CDs or DVDs, etc.) are developed, existing contents are adapted and print-based content are converted into digital media (Tinio, 2002). Beside the classroom and published content the generic eLearning education and learning content (courses, events, resources, mentoring, etc.) is gaining momentum in the eLearning solutions. The trend of the learning content development is its interactivity and to serve the learners with different background knowledge (Dinevski & Kokol, 2005). In the eLearning environments, learning-contents are delivered via internet, intranet, extranet, satellite TV, and CDs, using web-based learning, virtual classrooms and digital collaboration (Manochehr, 2007).

2. Technology: Technology comprises the: 1 Infrastructure (Internet, Intranet or hybrid delivery platforms), facilities for offline and remote access, user interfaces and personalization and customization capabilities; 2 Learning content management systems (LCMS) (management of learning offerings - options for delivery, tracking, management and reporting of online content); 3 Learning management systems (LMS) (capabilities for skills dictionaries, competency definition and mapping, performance management, employee development plans, financial and activity tracking/reporting, integration with other systems); 4 Learning technologies (mentoring, chatting and discussion forums, Web seminars, online meeting and classroom sessions (Pfeffer, 2004; Dinevski & Kokol, 2005; Dalsgaard, 2006; Barnes et al., 2007).

3. Services: Services include:

a. Consulting (Strategy and design of the eLearning program);

b. Support (assistance with implementation of the eLearning program (launch, marketing and promotion, technology platforms and infrastructure, management feedback and reporting, technical and implementation support); Design and build services (build of custom content for the specific education, transfer existing materials to online format, tailoring and customization of the eLearning platform and delivery environment, and integration with other applications (Dinevski & Kokol, 2005).

III. TECHNICAL SUPPORT FOR E-LEARNING IN HEIs

Technical support is essential both for the teachers and students (Sirkemaa, 2001). For teachers, technical support is needed to ensure that teacher has the resources and skills necessary for technology-integration into the class practices. For students, technical support helps in the acquisition of knowledge and skills necessary to fulfill their unique curriculum requirements (Valdez et al., 2004). Technical support includes "installation, operation, maintenance, network administration and security (Sife et al., 2007)." The ICT support covers resolving hardware problems, implementing software installations and helping users in common applications of ICTs in eTeaching, eLearning and eEducation (Mokhtar et al., 2007). Technological sustainability involves choosing technology that will be effective over the long term (Tinio, 2002). Gray et al., (2003) report, after studying a group of universities running successful eLearning projects, that "the success of the project was often dependent on the skills and quality of technical support provided to end-users." Similarly, researchers suggest that the university constituents "need to get technical and human resource support for continuous technology integration after the training (Zhao & Bryant, 2006)." This support includes the technical-infrastructure manned with technical talent such as network managers, web administrators, security specialists etc., but universities are facing challenges in preparing IT-workers for new digital environments (Ezziane, 2007). Despite help from the IT centre most problems need to be solved at teachers or students level. Interestingly, student survival in the digital age seems to depend on how well one knows people who can help with different problems (Sirkemaa, 2001). Because, support to eLearning does not simply refer to bridging the hardware-divide rather the access to infrastructure and services should help users in getting knowledge, skills, and consistent support of organizational structures to achieve broader social and community objectives (Macleod, 2005; Ågerfalk et al., 2006). Technical support is an important part of the implementation and integration of ICT in education however, often technical support is not available requiring the teachers and students to command some basic troubleshooting skills to overcome technical problems when using ICTs (Sife et al., 2007).

1) *Infrastructure And Facilities*

According to which new technologies will be adopted in the teaching and learning practices (Stockley, 2004). For this purpose, it is necessary to establish an infrastructure, which is reliable and loaded with interoperable repositories, publishing support services and quality control mechanisms (Pfeffer, 2004). Likewise, there is need to invest significantly in the central support like helpdesk, training, documentation, registration, authentication etc (Valcke, 2004). Because high-quality digital literacy requires the HEIs to provide support to the faculty by adequately funding the IT department and professionals so that they can

accommodate the demands placed upon them (Ezziane, 2007) thereby showing eMaturity in using ICT tools and techniques (Moolman & Blignaut, 2008). In the digital age technology is changing fast. The result is that compatibility and flexibility to adapt to different devices and platforms are important issues in infrastructure (Sirkemaa, 2001) because reliability of equipment means that technical support staff can spend less time on maintenance and much more time for training teachers and students in the use of software (Lewis & Goodison, 2004). Furthermore, the adoption and maintenance of educational technologies is also expensive. The capital cost of the entire infrastructure needed to initiate the process is quite obvious. A little less obvious is the high level of recurrent costs associated with the effective use of ICT (Ezziane, 2007).

2) *ICT Division & Professional Staff*

Whether provided by inside technical staff or external service providers, or both, technical support specialists are essential to the continued viability of ICT use in a given school. General competencies that are required for eLearning technical experts are installation, operation, and maintenance of technical equipment (including software), network administration, and network security. Without on-site technical support, much time and money may be lost due to technical breakdowns (Tinio, 2002). The success of an eLearning project is often dependent on the skills and quality of technical support provided to end-users (Gray et al., 2003) by "IT division (Juniu, 2005)." In the universities, eLearning environment requires technical staff like network managers, web administrators, e-commerce developers, and security specialists. The number of graduates in computer science and information systems is inadequate to meet worldwide demand of professionals (Ezziane, 2007). Technical staff would assist lecturers in preparing material, and they would also maintain and develop the system. They are also responsible for the high-level architecture of the environment (Sirkemaa, 2001). The effectiveness of technology support staff is measured by the degree to which end-users detect their presence. In other words, when systems and resources operate seamlessly, users tend to take the staff supporting their technology use for granted. In many cases, the only interaction users have with such staff occurs at times when technology gives problems (Valdez et al., 2004). The current teaching force needs to be better supported through provision of technology integration specialists who can support classroom technology integration via mentoring and/or team teaching (Zhao & Bryant, 2006).

IV. ISSUES FOR HEIS

Getting computers into the classroom is relatively easy but keeping them working is a greater challenge (Hawkins, 2002) because developing and implementing a strategic plan that includes educational technology is often a difficult and complex process (Stockley, 2004). HEIs are also very preoccupied with the rate of technological change and its

increasing cost over time (Sasseville, 2004). In most of the developing countries there insufficient technical support and services (Mokhtar et al., 2007) with very few technical experts (Sife et al., 2007). Across the literature, certain issues surface over and over in all the surveys of HEIs in developed and developing countries such as, changing technologies, leading-edge syndrome, professional-user communication and users' digital literacy (Hawkins, 2002; Klonoski, 2005; Mokhtar et al., 2007). An information system is not just built and thereafter operates without any interruption rather research has unfolded several technology-centric attitudes, human problems, cultural conflicts, and political maneuvering in the success and failure of an information system (Nawaz et al., 2007)

1) *Changing Technologies*

In the digital age technology is changing fast therefore compatibility and flexibility to adapt to different devices and platforms are important issues in infrastructure (Sirkemaa, 2001). Given the rapid changes in ICTs, this becomes indispensable for professionals to fight the "threat of technological obsolescence (Tinio, 2002)." Likewise, in a developing country, a list of problems (relating to electrical spikes, viruses, dust, heat, and normal wear-and-tear) can bring "the computer lab to a screeching halt (Hawkins, 2002)." Having said that, in developing countries HEIs have to be in the forefront of ensuring ICT revolution, but they are unable and ill-prepared to play such a leadership role because of having poorly developed infrastructure (Sife et al., 2007). A system needs to be capable of being changed throughout its life (Nawaz et al., 2007).

2) *Leading-Edge Syndrome*

Furthermore, while developing and/or updating, most of the HEIs opt for cutting-edge technologies however, experience shows that mostly these 'leading-edge technologies turn into bleeding-edge technologies' by eating up budgets and delivering nothing special. Therefore researchers suggest that "go with tried and tested systems (Tinio, 2002)." At the same time latest digital options are expensive while, "the time is right for collaborative action because the time is wrong for any approach other than cost-sensitive, resource-smart deployments (Klonoski, 2005)." An effective technical support also means that users are not only trained in using technologies but continuously updated about the user and possibilities created by these gadgets (Kopyc, 2007).

3) *Users' Digital-Literacy*

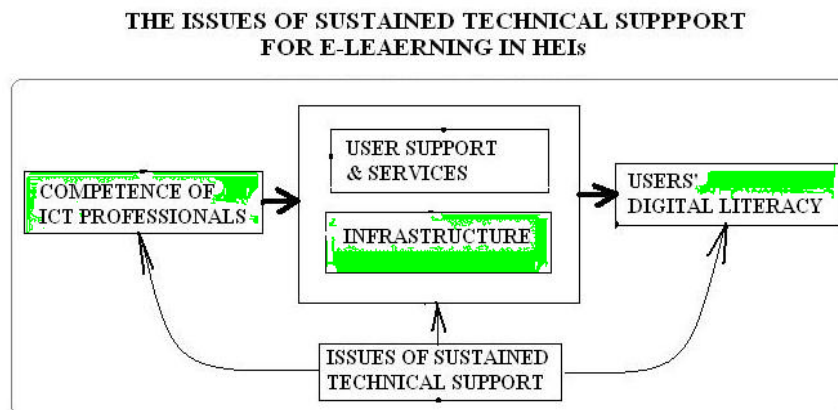
The demand for a universal computer-literacy stems from the ways in which ICTs are dominating different aspects of the contemporary life and work (Oliver, 2002). The advocates of social inclusion through ICTs propose a focus on electronic literacy as a key to overcoming the digital divide (Macleod, 2005). Different groups of people: students, teachers, and employers--have different ideas about what computer literacy means (Johnson et al., 2006). During the last 25 years, several models and approaches of

computer and information literacy have started to merge (Ezziane, 2007). Now, digital literacy skills are considered necessary for effective and mindful learning in the emerging digital environments (Aviram & Eshet-Alkalai, 2006). People acquire their technology literacy in two ways: formally through school programs or in the workplace, and informally, whether at home, from friends, or by themselves (Ezziane, 2007). The implementation of ICT can also be interpreted as redesign of an infrastructure with significant impact on both the work of the individual teacher and his or her surroundings (Nyvang, 2003). The emergence of Web services technologies enhances the possibility of bringing divergent participants together; these technologies make the ad-hoc integration of data and computer applications invisible to users so that they can enjoy a more user-specific experience (LaCour, 2005). In this environment and in order to perform new teaching functions, the teachers' "eTraining" should focus on the development of specific abilities and skills: 1 Professional: knowing the material, the contents, activities, didactic methods and teaching plan, etc; 2 Technical: although it is not necessary for them to be as expert as the support personnel, they should have basic skills which allow them to carry out their function appropriately, etc; and 3 Personal: interacting, giving feedback, receptive capacity, initiative, creativity, empathy etc. (Blázquez & Díaz, 2006).

V. PROSPECTS

Without proper support and maintenance of even the most current and sophisticated hardware and software, the ability of teachers and students to access and use technology is severely compromised (Valdez et al., 2004). The degree of dependence on technical support is defined and determined by the degree of users' digital literacy. Research shows that pragmatically, there is too much dependence of eLearning users on the support and services of technical help-desk and which is sometimes frustrating for the teachers and students therefore the issue has to be resolved both at the users IT department/professional levels. "University constituents: teachers, students & staff (Juniu, 2005)" or "campus constituents (Carey & Gleason, 2006)" have to be trained again and again to become self-sufficient in handling the digital devices. Furthermore, if technical section and professionals are well-prepared, there will be least complaints from users and thus, reduced calls for help. If the infrastructures are skillfully maintained, the problems are less likely to occur. However, given the issues of user-training and weaknesses in infrastructure, technical department services and professionals, dependence of users on developers is proving a big issue.

Figure 5.1 Technical Support & Issues of eLearning in HEIs



Furthermore, although the prices of computers are falling and the developing countries are finding a variety of technologies with low budgets however, new and advanced technologies and their availability in abundance requires a lot of finances. At the same time, governments are reducing the funding of public universities therefore affording an expensive eLearning infrastructure is becoming an uphill task for the HEIs in public sector. To resolve this issue, Carey & Gleason (2006) argue that since it is not possible for the individual universities to duplicate leading edge technologies at every institute level, therefore, universities are relying on third-party solutions to meet student demands more economically and on a level that cannot be duplicated by an individual institution. Thus, outsourcing is the collaboration with the outsiders who are specialized in a particular eLearning technology or service, for example:

1. Applications: HEIs have to control costs, reduce the burden on their technical staff, and improve services. Enterprise resource planning (ERP) and campus management systems (CMS) applications and more importantly, the existence of free and open source systems (FOSS), an open architecture can enable partial outsourcing of the application-base, and HEIs will easily be able to switch from one third-party service provider to another if they are dissatisfied with the services.

2. Integration-services: A big issue for HEIs in adopting eLearning solutions is the integration or interfaces of a multitude of software applications. This integration layer can be outsourced to a third-party service provider. The interfaces within and outside the institutions must conform to the higher education industry standards for messaging, security and privacy.

3. Outsourcing the processing layer: Every HEI generally performs the same administrative functions and similar processes to support those functions. This work can be outsourced easily and cheaply to an agency that performs the same tasks for multiple institutions.

Effective technology support is concerned with planning, development, and maintenance of technology systems and resources; providing immediate support for the use of those systems on an as-needed basis; and enhancing teacher and student competency in technology integration through long-term development courses and programs (Valdez et al., 2004). So far most of the HEIs in developing countries have basic ICT infrastructure such as Local Area Network (LAN), internet, computers, video, audio, CDs and DVDs, and mobile technology facilities that form the basis for the establishment of e-learning (Sife et al., 2007). Normally it is expected that as the institute builds up its infrastructure over the years and the faculty gains experience the pedagogy followed shifts from pure lecture method to instructional technology (Mehra & Mital, 2007). There is also great uncertainty among decision-makers and managers as well as among developers, trainers and learners: instructors find themselves confronted with a new role in which they are tutors and facilitators for learning processes (Ehlers, 2005). Technology training alone cannot necessarily ensure that these teachers would infuse technology into their routine

instruction and a radical change in their instructional practices would occur. However, they need to get technical and human resource support for continuous technology integration after the training (Zhao & Bryant, 2006). Given the premise that IS development is a learning process, it requires an open environment wherein all the participants have the opportunity to make sense of the new technological work environment (Nawaz et al., 2007).

VI. CONCLUSIONS

The research shows that ICT professionals in universities have no knowledge of what is common practice elsewhere (Gray et al., 2003) and most of the university administrators and information technology departments provide services to the classroom in isolation from the educators (Juniu, 2005). Similarly, developers rarely report errors to the users apprehending that it may emphasize the shortcomings of their products (Buzhardt & Heitzman-Powell, 2005). The weaknesses in communication between developers and users can run into many problems like confusions, misunderstandings and conflicts leading the projects towards information system failure (Nawaz et al., 2007). Although the digital era has bridged some of the digital divide but it has also created unequal distribution and access to technological knowledge. For example, one of the key problems that higher education faces today is that the use of sophisticated technologies brings the need to rely on IT department technological expertise, an uneven relationship (Juniu, 2005). Researchers are identifying problems “such as user dissatisfaction with newly introduced systems, mismatches between a new technology and the existing work practices, underestimating the technological complexity for employees, and inefficient end-user support (Bondarouk, 2006).” Furthermore, ICT has penetrated education, but its more impact is on administrative services like admissions, registration, fee payment, purchasing rather than on the pedagogy in the classroom (Dalsgaard, 2006). Thus, there needs to be a level of “eReadiness” to go for “eMaturity” of HEIs, which is the ability to utilize ICTs (Moolman & Blignaut, 2008). Without proper support and maintenance of even the most current and sophisticated hardware and software, the ability of teachers and students to access and use technology is severely compromised (Valdez et al., 2004). The IT division would contribute technical support and knowledge of new applications according to theories and strategies established by the pedagogues. Such a process of communication between teachers and the technical staff will help providing sustainable technical support for ePedagogy, eLearning and digital education administration in the information society (Juniu, 2005) because learning cannot be managed rather facilitated by technologies (Dalsgaard, 2006). Although success of eLearning in HEIs depends on the human element rather than technological sophistication (Sirkemaa, 2001) however, there is need for the existence of a supportive and responsive technical and/or teaching and learning unit, which is able to respond to the needs of individual staff (Lewis & Goodison, 2004). All the

successful eLearning projects are reported to have “organizational support provided through allocation of resources and symbolic support reflected in an institution’s systems, policies and processes (Lynch et al., 2005).” Furthermore, “because system start-up costs and scalability issues weigh heavily on system sustainability, we needed to design a technology-based model within the context of the existing support and resource infrastructures (Tran et al., 2005).” Furthermore, the implementation of ICT is not just about the individual teacher but about an organization that affects and is affected by the process (Nyvang, 2003). Therefore, when designing and implementing learning software, software developers have to look beyond the paradigms of their own discipline through an interdisciplinary exchange with teachers, authors and learners (Ehlers, 2005). Similarly, research suggests that for a successful eProject of eLearning, people are the most important asset thus project managers must possess soft skills such as, communication, conflict resolution, motivation, getting along with others, and leadership (Jewels and Ford, 2006). For example, despite the availability of the technical infrastructure, support staff, and training facilities, there is low use of technology, which suggests that there are peculiarities to the academic digital divide that need to be identified before it can be dismantled (Kopyc, 2007).

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Service Marketing Mix Expectation Gap (An Empirical Study of Stock Exchange Market in Iran)

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{ GJMBR-B Classification (FOR)
R5 }

Abstract-In today's competitive world, it is inevitable to have expertise, knowledge, and marketing experience for financial market activators, especially the brokerage firms. This is essential along with performing the marketing operations and beside intermediary and carrying on the daily transactions of shares in stock exchange market. The objective of the study is investigating gap expectation between two groups of activators in stock exchange market in Iran. The first group is about brokerage firms, while the second one is the investors in the capital market. The research methodology used in this study is based on both survey and description methods. So far accurate answer to the research questions, the authors design and developed a questionnaire which it is the most suitable for this study. A survey questionnaire was completed by two groups of brokerage firms and investors those who are activating in Iranian stock exchange market at the end of 2009 and in the mid of 2010. The finding of this research state that there are gap between brokerage firms and investor's point of view in case of application the service marketing mix to attract investors to the Iranian capital market.

Keywords: Service marketing mix, Gap expectation, Brokerage firms, investors.

I. INTRODUCTION

Over the last two to three decades, service quality, customer satisfaction, customer perceived value and loyalty have been ongoing research areas in worldwide marketing literature (Boulding et al., 1993; Caruana and Msida, 2002; Durvasula et al., 2003/2004; Ladhari, 2008; Tam, 2004; Rust and Oliver, 1994). Compared to the focus of much of the literature, financial services, including stock broking, are more complex than other services and deserve more in-depth attention. This study addresses a substantive topic of high significance to customers (financial services) which has been almost "completely neglected in marketing research" (Martenson, 2008, p. 142). Financial marketing like the traditional one tries to seek the new customers for the financial product. The more strong the process of the financial marketing, the larger the number of the customers are found, and accordingly the capital market is more developed in every country. Many researchers on this subject have been performed in developed countries, but not in the developing countries. The main goal of this

more developed in every country. Many researchers on this subject have been performed in developed countries, but not in the developing countries. The main goal of this research is to enlighten the academic opinions in marketing tools of financial sector. As Srinivasan Joshi and Hanssense (2009) have stated, the track of marketing is very little in financial marketing.

1) History Of Tehran Stocks Exchange

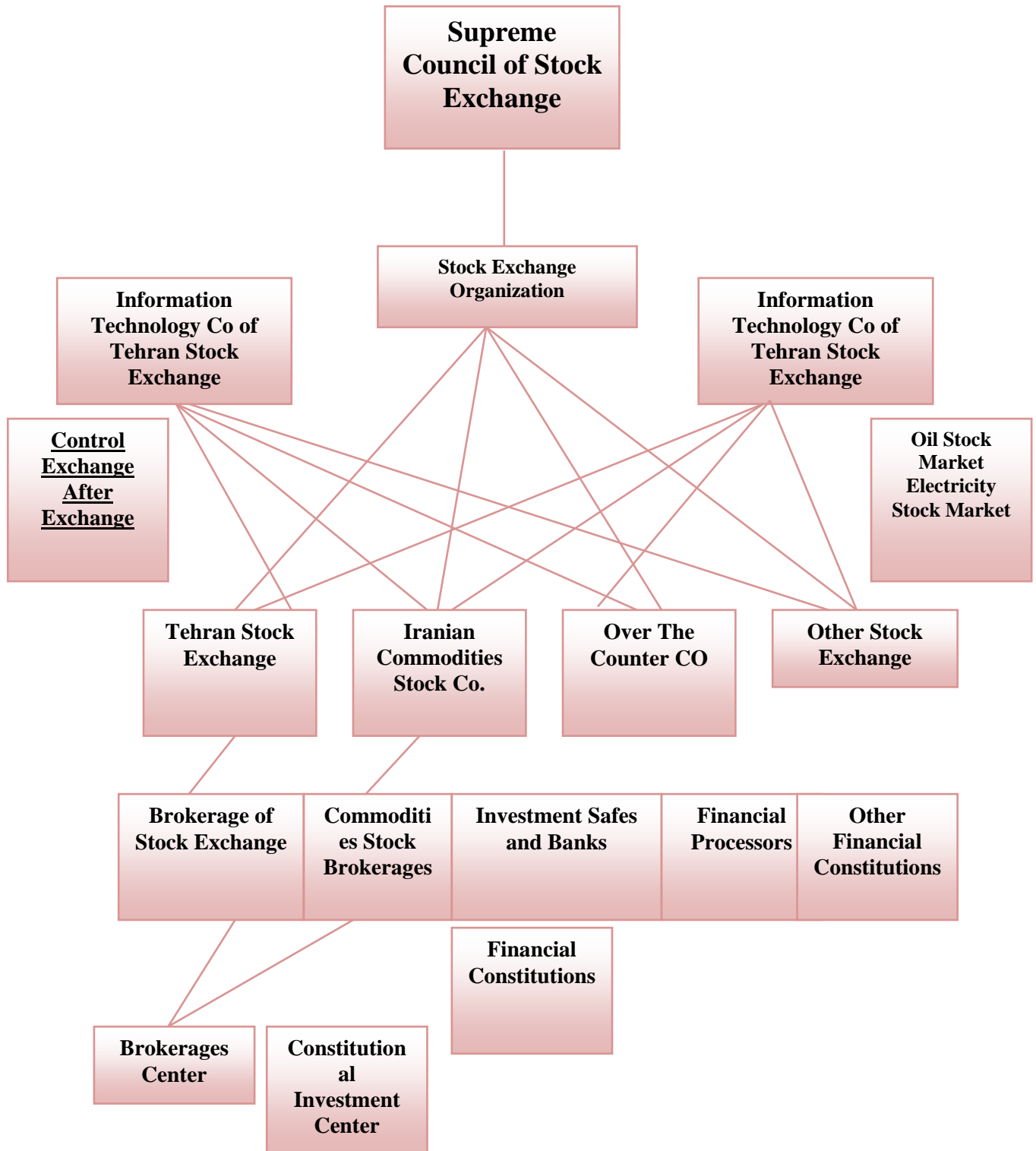
TSE opened in February 1967. During its first year of activity, only six companies were listed in TSE. Then Government bonds and certain State-baked certificate were traded in the market. The Tehran Stock Exchange has come a long way. Today TSE has evolved into an exciting and growing marketplace where individual and institutional investor trade securities of over 420 companies. TSE activities process could be divided into three periods: A) Since the beginning of TSE activity until revolution (1967-1978) In the period of 1967 to 1978 the number of listed companies and their capital raised from 6 with IRRs 6.2 b to 105 (22 private banks, 2 insurance companies, and 81 industrial corporations) with IRRs 240 b. In 1967 the value of shares and bonds traded in the TSE, was IR 15 m, which increased to IRRs 34.2 b in 1978. Actually, most of this development activity was due to the ratification of ownership development of manufacturing units' stocks and tax exemption for the listed companies' laws. B) Since revolution until the end of imposed war:(1979-1988) In the second period of TSE activities, two important events i.e. the Islamic revolution and Iraq's invasion were reduced exchange activities severely and exiting number of listed companies from TSE. In 1978 the value of shares traded was reduced to IRRs 4.1 b and this trend continued to 1982 and reached IRRs 9 m. From 1982 the trend of shares value increased and finally at the end of the period reached IRRs 9.9 b.

c) Since the end of imposed war until now (1989-2006) In fact, TSE was taken into account as one of the most important executive mechanisms for national economy optimization in order to facilitate the equipment and active contribution of the private sector in the productive activities through transferring some of the state duties to the private sector, gathering and errant savings, all to be directed toward investment. In 1989, economic authorities' attention to restarting of TSE activities increased the number of listed companies from 56 in 1988 to 422 in 2006. Furthermore, in 1988 the annual value of shares traded in the TSE, was IRRs 9.9 b, which increased

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Figure No.1: Structure of stock exchange marked in Iran



to IRRs 44.8 b in 2006. During this period, especially between 2001 -2004, return of TSE investments grown up considerably and in 2003 reached to 131.4% which on that year was the highest return between WFE's members.

2) *Structure of stock exchange marked in Iran*

The structure of stock exchange marked in Iran illustrated in figure No.1, which shows, there is no any concept and position for marketing. T here for we need to clarify the application of the marketing in stock exchange Market which named financial marketing.

II. REVIEW OF LITERATURE

The has indicated the moderating effect of customer expertise on service performance expectations (Jamal and Naser, 2002). Increases in customer familiarity will increase customer expertise (Alba and Hutchinson, 1987). Expert customers have higher expectations (Jamal and Naser, 2002). Customer perceived value has been of research interest in the marketing field over the last decade (Eggert and Ulaga, 2002). There are many definitions of perceived value. Researchers have not reached consensus on a single definition (Day, 2002). In parallel with the Gaps Model of service quality, Woodruff (1997) suggested that customer perceived value was the difference between desired value and perceived value.

Stock trading in Singapore is governed by the Securities and Futures Act (Singapore Monetary Authority, 2006). Stock broking services refer to those provided by self-employed commission-based brokers with a fundamental role of buying and selling stock for investors (Chan et al., 1991). The marketing of financial products is a major enterprise, as indicated by the size of brokerage firms' payrolls. Stoll (1993) reports that in 1989, compensation to registered representatives (i.e., brokers) exceeded \$9 billion. Clerical and administrative employee expenses added another \$10 billion. The market for stocks, however, is hardly saturated. Mankiw and Zeldes (1991) report that only 27% of households own stocks (including mutual funds), and even among households with liquid assets of \$100,000 or more, the proportion is only 48%.

(1) investors tend to identify stocks of high-quality companies as stocks with

(2) institutional investors prefer high-quality companies to comply with their fiduciary responsibility for prudent investing.

The reason we have chosen to focus on these three issues is because they are some of the financial marketing subject areas where one of the authors of this article has published numerous commentaries about, predominantly due to the fact that they have been debated within boardrooms of the major financial institutions for a number of years. Financial institutions have been grappling with these issues for a while now and have found it hard to institute the necessary mechanisms that might help manage them more effectively. In those commentaries the author has made certain assertions that we believe might make sense in theory but that are quite

difficult to implement in practice. The aim of this article is to critically appraise their viability in practice. By choosing the areas that our co-author has focused on, we hope that we can avoid being accused of using this article to criticize assertions made by our peers. Our aim is to bring honesty and objectivity into this debate. (Shahin Shojai) The people and management factor in Stock Exchange includes:

- Training, specialized skills development of employees;
- Rewards/incentives policy relative to relationship building and customer retention;
- Focus on change management when required (user involvement, communication, and re-training);
- Deployment of an internal marketing plan to establish a (service marketing Department) consciousness; and

Although respective researchers have conducted empirical investigations involving the concept of marketing effectiveness, few conceptual measures of the construct exist. However, Kotler's (1977; 1997) operationalisation has been cited as one of the best known measures of marketing effectiveness (Webster, 1995). According to Kotler, the marketing effectiveness of a firm entails an amalgam of five components, notably: customer philosophy; integrated marketing organization; adequate marketing information; strategic orientation; and operational efficiency. First, it is imperative to identify the importance of studying the market, recognizing the numerous opportunities, selecting the most appropriate segments of the market to operate in and endeavoring to offer superior value to meet the selected customers' needs and wants. Furthermore, the firm must be suitably staffed to enable it to perform marketing analysis, planning and implementation. Subsequently, marketing effectiveness calls for managers to have sufficient information for the purposes of planning and effective resource allocation to varying markets, products and territories. Marketing effectiveness is also contingent upon the adeptness of managers to deliver profitable strategies from its philosophy, organization and information resources. Ultimately, marketing effectiveness depends upon the ability to implement marketing plans successfully at various levels of the organization. The real problem with quantitative measures, however, is the difficulty in knowing what is to be measured, and how this is to be defined. The measurement of attitudes, perceptions, and beliefs is extremely complicated. In this case, it is necessary to understand these attributes over time, as the securities house salesman is trying to create a relationship with the buyer over a long time period. The dyads are managing a continuous process, or continuously "shooting at a moving target" in the words of one research participant The relationship is continuously changing. Therefore, any mechanical, quantitative method, such as administering a questionnaire, would only capture an instant "snapshot" of the process, and,

additionally, one which would be incapable of precise definition. (Katherine Tyler).

1) *The Marketing Orientation In Iran Financial Services*

The IRAN financial services sector is perceived as having been highly undeveloped and reluctant to adopt the marketing concept (Morgan, N. and Piercy). It has been characterized as supply orientated – principally concerned with operational, risk and financial issues and, in marketing terms, product led. A range of well established products would be sold, “hard” in some areas such as life assurance, or left to be “bought” in others (Ennew, C.T., Watkins, T. and Wright, M). Relatedly, marketing activities, ideas and departments within companies were limited in their scope and afforded low status in relation to other business “disciplines” such as accounting and actuarial work [18]. An early exception to this generalization was the retail banks which, according to Clarke, were by 1988 entering the “final” evolutionary stage of marketing development – the “marketing control” era – where the marketing concept drives the whole organization.

2) *The Concept Of “Need”*

The concept of “need” has a long history within the field of industrial psychology where it was originally seen to fill the conceptual gap between stimulus and response in behaviorist theory. The stimulus was seen to elicit a response if the individual had a need that could be satisfied by such a response. It was particularly adopted in motivation theory when the presumed causal relationship between job satisfaction and work productivity/performance failed to be confirmed in several empirical studies (Vroom, V.H). Mc Carthy (1964), offered 4ps as marketing mix and introduced that to the scientific centers. He introduced four main factors as an effective factors in the marketing of products. These factors were product, price, place and promotion. According to his point of view, all activities in the field of product and service marketing can perform in the frame of four main factors (Mc carthy and others, 2003). The above perspective did not consider the vary of activities in different businesses, and offering same alternative for all marketing dimensions (Bennett, A.R, 2000). The service marketing mix is a set of controllable and predictable tools that an organization makes use to produce the response it wants and needs from its different target market. It consists of everything that the brokerages can do to influence the demand for the services that it offers. The product is what is being sold (Jonathan Ivy, 2008). It is more than simple set of tangible features; it is the complex bundle of benefits that satisfy customer needs. In the case of brokerage firms, what is being sold is widely debates. Some state that the package of shares offered by brokerage for attract the investors and large enterprises are the raw material and also entry of new and large enterprises will go to this variable. The kinds of share offered are ultimate procedure for element of products.

The price factor of the service marketing mix is character by being charged for the brokerage firms as a commission and the total price of each share made by the stock exchange market. This factor not only affects the revenues the stock exchange market (brokerages) derives from its purchase, but also effects investors and financial market activators as well. Place consists, distribution in both channel and physical models that the brokerages adjusted to provide profitable shares of large enterprises to its market for responsiveness to the financial market activators. Providing another channel to distribute shares to the customers even at out of the regular system. Promotion involves all the tools that brokerage firms can use to provide the market through information and its service offering: advertising, publicity, public relation and sales promotional endeavors. Different above elements are used for different publics. In fact some publics, like prospective large enterprises, are too important that a number of promotional tools will be aimed at them for benefit and reputation purposes. The people element of the service marketing mix consists all the personnel of the brokerage firms that interact with prospective financial market activators and in fact once they are purchased as customers of stock exchange market. Thus at the level of financial activators perceptions of advising personnel of brokerage firms will play an important role in choice process, which influence on LSEs perception to entry the stock exchange market. Physical evidence and process are the latest to the service marketing mix. Physical evidence is the tangible assets and component of the service offering. A variety of tangible aspects will evaluate by brokerage firms target marketed, ranging from the shares material to the appearance of the place and advising facilities at the brokerage firms. While process are the administrative and bureaucratic functions of the brokerage firms and formally of entry to stock exchange market, the evaluating the marketing knowledge will be key role at the both brokerage firms and stock exchange organization. Service marketing differs from goods marketing cause of existence of necessities of different decisions. Therefore, they differentiated service marketing from goods marketing (Booms & Bitner). For the goods and products with tangibility nature have traditionally used a 4Ps model, on the other hand the same model will use for the products with the services nature as 7Ps approach in order to satisfy the needs of the service provider’s customer: product, price, place, promotion, people, physical facilities, and process. Three more p, were added to previous 4p, as personnel, physical assets and process, can finally introduced a new mix marketing (7p_s) for services as well (Rafiq, 1995) Early researchers stated that the implementation of marketing was dependent upon managerial philosophy and organizational marketing culture rather than marketing structures (carson, 1968; pearson and Wilson, 1967; Ames, 1970; Webster, 1981). McCarthy and perreault, 1984; Boone and Kurtz, 2002) are discussed with focusing assumption that the CME is able to control or at least strongly influence organization

decisions about products, price, promotion, and place of sale. Greyser (1997) discussed that, as long as the formal function of marketing may well decline, the emergence and importance of the marketing knowledge within the company on the whole will increase. Achrol (1997) and moor man and Rust (1999) also address to anecdotal evidence to indicate that disintegration of the formal marketing function is occurring with activities being outsourced Terrill, c. (1992) pointed out that the new services performance is essentially the task which bring about two components, the first is to be efficient to develop a strength point to respond to the needs of customers and, the second is to consider the present conditions of the capital market for offering the shares in developmental process.

III. OBJECTIVES AND RESEARCH APPROACH

The purpose of this study was to determine if the service marketing mix is used by investors when selecting shares to purchase through brokerage firms in stock exchange market of Iran recognize whether the service mix is used by brokerage firms in stock exchange. The research methodology used in this study is based on both survey and description methods. So far accurate answer to the research questions, the authors design and developed a questionnaire which it is the most suitable for this study. A survey questionnaire was completed by two groups of brokerage firms and investors those who are activating in Iranian stock exchange market at the end of 2009 and in the mid of 2010. Five-Point Likert Scale questionnaire was employed in this research. The Five-Point Likert's scale having the ratings of "strongly disagree" (1) and "strongly agree" (5) were used. Keeping in view the hypotheses of the study, the questionnaire was prepared with 37 questions. Questionnaire was drawn for the two groups it aimed professional information and data relating to existing variables, product, price, place, promotion, peoples, physical assets and facilities, marketing process and performance as well as development of Iranian stock exchange market. In order to measure the qualitative groups such as opinion, attitude, perception and etc, the qualitative scale was converted to quantitative one, If any of two groups (respondents) ranked on attribute in place of The Five-Point Likert's scale having the ratings of "strongly disagree" (1) and "strongly agree" (5) were used. Further the questionnaire is sub-divided into two parts in this section, part one the actual application of service marketing mix which renders by Brokerage firms to the investors and second part show the expected level of service marketing mix which renders by the brokerage firms. The statistical tools used in the study included mean value, standard deviation, and Mann-Whitney U Test for the purpose of analysis and interpretation. The sample for this study has been selected from the investors those who are activating in capital market and recognized brokerage firms from Iranian stock exchange market. The simple random techniques have been used for selecting people as a sample which 70 of brokerage firms and 40

from well-known investors of the Iranian stock exchange market were the final samples for this research. The universe in this research is all of the brokerage firms and investors of Iranian stock exchange market.

IV. HYPOTHESES OF THE STUDY

- 1) There is a gap between actual and expected situation in case of package of service offered from brokerage firms and investors point of view in Iranian stock exchange market
- 2) There is a gap between actual and expected situation in case of share pricing method from brokerage firms and investor's point of views in Iranian stock exchange market.
- 3) There is a gap between actual and expected situation in case of distribution channels from brokerage firms and investor's point of view in Iranian stock exchange market.
- 4) There is a gap between actual and expected situation in case of promotion methods from brokerage firms and investor's point of views in Iranian stock exchange market.
- 5) There is a gap between actual and expected situation in case of brokerage firms' staff from two group's point of views in Iranian stock exchange market.
- 6) There is a gap between actual and expected situation in case of physical assets and facilities from brokerage firms and investor's point of views in Iranian stock exchange market.
- 7) There is a gap between actual and expected situation in case of marketing process and performance from brokerage firms and investor's point of views in Iranian stock exchange market.

V. DATA ANALYSIS

To review existence difference between brokerage and investor attitudes in order to offered services through stock exchange market to attract the large scale enterprises. According to the nature of the data which is ordinal and for comparing the data of two groups the Mann-Whitney U test have employed. According to P-value result, all hypotheses at the level of 1% Alfa are accepted. Furthermore, the different exist between grade of mean in brokerage firms and investors are significantly accepted. Thus, we can state that there is huge gap between the actual and expected situation of brokerages and investors in financial market of Iran. Also, the results of statistical test in the table.1 shows that, the greatest gap in between two groups is about physical assets and facilities, (Fifth hypothesis) while the least gap is about personnel of the stock exchange market of Iran.

Hypotheses Description	First Hypothesis	Second Hypothesis	Third Hypothesis	Fourth Hypothesis	Fifth Hypothesis	Sixth Hypothesis	Seventh Hypothesis
No. of Brokerages	70	70	70	70	70	70	70
No. of Investor	40	40	40	40	40	40	40
Mean of Brokerages	3.2159	3.3650	2.8048	2.5827	2.6771	3.7262	2.4667
Mean of investors	2.2278	2.6056	2.5389	2.5839	2.6771	2.3250	2.5208
Standard Deviation (Brokerage)	0.4017	0.3277	0.3500	0.3530	0.570	0.4857	0.4483
Standard Deviation (Investors)	0.9656	0.2662	0.7372	0.2893	0.4695	0.3658	0.4436
Mean Rank of Brokerages	70.06	74.25	68.21	73.59	66.29	75.24	73.00
Mean Rank of Investors	30.01	22.69	33.26	23.84	36.63	20.96	24.88
Difference between mane ranks	40.05	51.56	34.95	49.75	29.66	54.28	48.12
Mann-Whitney U	380.5	87.5	510.5	133.5	645	18.5	175
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Result	Accept	Accept	Accept	Accept	Accept	Accept	Accept

Table No,1 Description of Statistical Result

VI CONCLUSION

The finding of this research state that there are gap between brokerage firms and investor's point of view in case of application the service marketing mix to attract investors to the Iranian capital market. Also the result of foundation hypotheses support that the existence of huge gap in physical

assets and facilities at the level of brokerage firms, while the existence of small gap in staff of brokerage firms in Iranian stock exchange market. Many researches in the field of knowledge and service marketing believe that, marketing is one of the sciences that have usage in all disciplines. This sciences has

entered into the new fields such as the service and financial market as the communities have advanced. (Rosta, 2006, p.31) Greyser (1997) discussed that, as long as formal function of marketing may well decline, the emergence and importance of the marketing knowledge within the company on the whole will increase. Taking into account that all seven hypotheses were accepted which the result of the study gives intense alarm to the brokerage firms for not using the marketing knowledge to data with investors of stock exchange market in Iran. so for the authors believe, be case of existence of traditional structure which employed years ago, marketing theories have no any place on that. So many problems are going to rise in this market. Thus to cover such problems the Iranian stock exchange market should make such decision to introduce the marketing knowledge, at least, service marketing into the atmosphere of this market, as well as activating brokerage firms. Finally the authors of this research suggest that the service marketing mix should enter to the organizational structure of stock exchange market in Iran.

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JIT Expectation Gap (An Empirical Study of Iranian Companies)

GJMBR-B Classification (JEL)
H83

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Abstract-The JIT production approach have specific tools and necessities in such environments based on production philosophy. The tools and facilities should able to adopt with all of the needs and to have appropriate mechanism to provide the achievement to the JIT objectives. This article is studying the optimum application of and measurement of the JIT system. The research methods are based on both survey and descriptive study. the tools of gathering information are questionnaire and interview which collected from Iranian industrials experts. The sample size was 70 experts of which is 23 from public and 47 from private companies to recognize the difference significant between private and public companies. The Mann Whitnee U has employed, while the Wilcoxon test has supported the gap exception between Iranian companies to use JIT in their production process. **Keywords-** Just In Time, public, private, application, measurement, Iranian Companies.

I. INTRODUCTION

The production technology principle Japan contributed to the world in the latter half of the 20th century was the Japanese-style production system typified by the Toyota Production System (TPS). This system was enhanced by the quality management technology principle generally referred to as Just In Time (JIT). Today, however, improvements in the quality of Japanese-style management technology principles are strongly desired in the face of unexpected quality-related recall problems breaking out among industrial leaders, while at the same time delays in technical development cause enterprises to experience crises of existence (Goto, 1999). To realize manufacturing of the best quality for the customer in a rapidly changing technical environment, it is essential to create a core principle capable of changing the technical development work processes of development and design divisions. Similarly, it is important for the production division to develop a new production technology principle and establish new process management principles to enable global production² (Hayes and Wheelwright, 1984). The globalization and intense competitiveness of the current marketplace has forced firms to reexamine their methods of doing business. Despite an abundance of both natural and economic resources, the US manufacturers have struggled with growing trade deficits and outsourced operations. With fewer available natural resources, strong market competitors have emerged,

specifically in the Pacific Rim, using superior manufacturing practices in the form of just-in-time (JIT) and continuous process improvement (CPI) (Cammarano, 1996). JIT is a manufacturing philosophy that emphasizes achieving excellence through the principles of continuous improvement and waste reduction. Some of its purported benefits include higher quality production, lower inventory levels, improved throughput times, and shortened customer response times. In the US, JIT has been both praised and criticized for its effectiveness, accounting, in part, for its relatively conservative adoption rate (Bowman, 1998; Clode, 1993; Milligan, 1999; White et al., 1999). This study has two principal objectives: first, it investigates the benefits received from the implementation of JIT; second, it examines the dependence of these benefits upon the level of commitment in adopting specific JIT practices. The competitive benefits of just-in-time (JIT) manufacturing, including the key elements of cellular production along with empowered teams, are well documented in both academic and trade literature, such as in Costanza (1994), Deming (1982), Lahidji (1997), and Richardson (1997). Studies on these topics typically focus on benefits, management theories, and technical aspects of JIT. But to maximize success one must also consider the individual person who works in the newly modified environment.

II. JIT OBJECTIVES

JIT looks beyond the short run to the long-term optimization of the entire production/distribution network (Jones, 1991). Successful JIT implementation should accomplish two major objectives: improve quality and control the timeliness of the production and delivery of products (Davy et al., 1992; Monden, 1981; Walleigh, 1986). By concentrating on quality, companies should experience less scrap and rework and more effective communication among departments and employees. In addition, long-term commitments with fewer suppliers should result in fewer inspections. The achievement of these results requires an even production flow of small lot size, schedule stability, product quality, short setup times, preventive maintenance, and efficient process layout (Chapman and Carter, 1990).

III. THEORY OF JIT PRODUCTION

JIT Based Quality management is combination of inventory control. Quality control and production management function that make sincere efforts for quality improvement by mo ways. First, it concentrates on philosophical aspect of quality improvement by making the quality everyone's responsibility. and then focused on effective implementation of quality control techniques (Vikas Kimiar. Dixit Gar and

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N.P. Meliti. 2001). It recognized that most valuable resource, of an organization is its workers, and workers work best when they are motivated. Valued, encouraged to contribute, and allowed to make their own decisions. Under this approach, workers inspect the product quality after each successive operation. They are trained along with managers in preparation and interpretation of process control charts. Managers motivate the workers, to think quality first and production rate second. The workers have authority to halt the production line or cell. If quality problems are uncovered thus, this concept not only gives the quality responsibility to workers but also match that responsibility with authority to shire the quality, control functions so that quality problems can be uncovered and solved quickly (Ebrahillipour. M. and Schonberger R. J., 1984). Also, JIT production system demands to buy parts in small lots. Small lots require less space and time. Less space and Lillie require less peoples and facilities to complete the same job. Besides, small lots easy to inspect, and defects call immediately detected. Thus, the parts that are purchased steadily in small lot sizes with frequent deliveries contribute to v higher quality and productivity through lower lei of nib and scrap, lower inspection costs for incoming parts, and early detection of defects (Gang. D. 199-7). In short, JIT based approaches has potential to improve the product quality and Productivity to significant level but organizations must adopt its principles in way that meet their own organizational structure, design and processes.

IV. JIT IMPLEMENTATIONS

Implementations of JIT in US manufacturers often involve adopting just a few of the management practices associated with JIT (Goyal SK, Deshmukh SG, 1992 and Golhar DY, Stamm CL, 1991). As a result of this selective process the frequencies of JIT practices implemented by US manufacturers often differ among the various JIT practices (Im JH, Lee SM, 1989 and Baldwin RE, Gagnon R 1989). In addition, researchers suggest the practices implemented are typically the ones easiest to implement, but not necessarily the ones that provide the greatest benefits (Im JH, Lee SM, 1989 and, Gilbert JP, 1990). The piece-meal approach to adopting JIT used by US manufacturers occurs despite research findings that suggest the synergic benefits desired by US manufacturers cannot be fully realized until all JIT practices are integrated into a holistic management system (Sakakibara S, Flynn BB, Schroeder RG, Morris WT, 1997).

V. US PRODUCTION SYSTEMS

The framework for understanding JIT implementations in US manufacturers draws from Thompson's (Thompson JD. Organizations in action, 1967) concept of traditional US organizations and Hayes and Wheelwright's (Hayes RH, Wheelwright SC, 1984) continuum of production processes. Thompson (1967) posits that US manufacturers have traditionally used buffers or inventories to reduce the effects of uncertainties on the organization's internal core (technological activities). Buffers between the internal core and the external core (input and output activities) allow for

developing greater efficiencies among the activities within the internal core; this is achieved by increasing the level of interdependence across the activities in the internal core. A reclassification of the ends of Hayes and Wheelwright's (1984) continuum of production processes (project/job shop and assembly line/continuous flow) provides a clearer distinction of processes and associated characteristics that support Thompson's (1967) concept. For example, with movement from one end of Hayes and Wheelwright's (1984) continuum (project/job shop) to the other end (assembly line/continuous flow) increasingly higher levels of raw materials and finished goods exist to protect the in internal core and increasing lower levels of work-in-process inventories exist among the activities of the internal core At the project/job shop end, high levels of work-in-process inventories exist to buffer among the technological activities and lower levels of inventories exist to buffer the internal core from the input and output activities . Batch, the production process that falls in the middle, in a sense, is a hybrid of the revised processes on the ends of the continuum. Since batch does not provide a clear distinction for differentiating from either of the ends, it is not included as a classification of production processes in this study. Traditional no repetitive production systems (project/job shop) are capable of producing a high variety of products; however, the high levels of WIP inventories.

VI. MEASURING JIT SUCCESS

This investigation seeks to identify factors that lead to successful JIT implementation in manufacturing and service operational environments. We recognize, however, that JIT evaluations encompass activities and attitudes that were not previously subjected to objective measurement. Traditionally, evaluation methods focused on easily quantifiable metrics such as cost, price, quality, and delivery. However, recent performance evaluation systems place emphasis on a wider variety of measures including worker and management attitudes and buyer-supplier collaboration, thus, placing greater emphasis on data that is less easy to quantify (Huson M, Nanda D, 1995 and Billesbach TJ, Harrison A, 1991). We believe that firm performance on some of these less traditional measures must be gauged to enable a more holistic assessment of JIT performance. In general, it has been shown that JIT does promote efficient, effective and flexible utilization of productive resources. Many potential benefits of JIT, which are oftentimes just as relevant to service as they are to manufacturing, are cited in the literature. JIT tends to eliminate material waste and waste in production or in the delivery of services (Tsfay B, 1990). JIT also has the potential to reduce purchasing cost which is a major cost to both manufacturing and service organizations (Gargeya VB, Thompson JP, 1994). In addition, JIT is instrumental in reducing lead-time, decreasing throughput time, improving production or service quality, increasing productivity and enhancing responsiveness to customers (Green FB, Amenkhienan F, Johnson G, 1991 and Cook RL, 1996). Service operations have often been distinguished from

manufacturing operations on the basis of the higher labor content of service jobs. As such, minimizing worker grievances and improving worker safety are of paramount importance to firms in the service sector. In this regard, JIT has also been credited with the ability to improve the practice of safety in service organizations (Pierce FD, 1997). Moreover, switching to JIT operations has encouraged some service firms to use their human resources more effectively. For example, Eisenhower Memorial Hospital has reorganized their materials management function by assigning their materials coordinators to user departments on a full-time basis. While these workers still perform their materials management duties, they are physically located in the user departments (DeJohn P, 1998).

VII. SOME IMPORTANT FEATURES OF JIT BASED QUALITY MANAGEMENT

This section explains the some unique features of this concept that play a vital role to achieve its objectives of continuous quality improvement, waste elimination and cost reduction.

- One most outstanding feature of TIT is that it generates great number of scarification by worker's involvement in centimes improvement. Management works hard to implement these suggestions. The number of suggestions is regarded as all important Criteria in reviewing the performance of a worker. Thus, management recognizes Worker's efforts for quality improvement. Quality circles are also act as group oriented suggestion system for making improvement. In short. JIT requires efficient suggestion System to involve employees in manufacturing actives.
- JIT emphasizes awareness, and provides clues for identified, problems. Once problem identified, it must be solved. Therefore, this concept requires training for using various problem-solving, tools.
- Improvement reaches new heights with every problem that is solved. In order to consolidate new levels, improvement must be standardized. Thus. JIT also requires standardization of methods and procedures,
- Often, the heterogeneous composition of workforce and adverse relation between labor and management mikes difficult to introduce changes for improve productivity and quality control. Therefore, high motivation, employee empowerment, and an Open Organizational culture ire essential for efficient implementation of JIT.
- JIT requires the habit of working with hard data. It therefore put more emphasize on the use and analysis of statistical data for quality control and problem solving.
- Because workers work on many different types machines at once, this system leads to significant expansion of worker responsibilities, and skills. Therefore, effective training programs are primary requirements of JIT to develop the multiplicity of skills, in the workers.
- JIT encourages the suppliers to make commitment to supply the excellent quality products. To fulfill this commitment, a permanent quality program is required for

supplier's operations, with constant communication between buyer and supplier.

VIII. THE RESEARCH METHODOLOGY

The research methodology used in this study is based on both survey and descriptive methods. So far accurate answer to the research questions, the authors design and developed a questionnaire which it is the most suitable for this study. A survey questionnaire was completed by the industrial expert of Iran. The research implemented at the end of 2009 and in the mid. Five-Point Likert Scale questionnaire was employed in this research. The Five-Point Likert's scale having the ratings of "strongly disagree" (1) and "strongly agree" (5) were used. Keeping in view the hypotheses of the study, the questionnaire was prepared with 37 questions. Questionnaires were drawn for two public and private companies. The questionnaire (A) was designed with 22 questions for application of JIT and the questionnaire (B) was designed with 40 questions to test the performance measurement of JIT. Existing variables, application and performance measurement of JIT as well as gap expectation. In order to measure the qualitative groups such as opinion, attitude, perception and etc, the qualitative scale was converted to quantitative one, If any of two groups (respondents) ranked on attribute in place of The Five-Point Likert's scale having the ratings of "strongly disagree" (1) and "strongly agree" (5) were used. Further the questionnaire is sub-divided into two parts in this section, part one the actual application of JIT which renders by experts and second part shows the expected level of application of JIT which renders by the Iranian industrial experts. The statistical tools used in the study included mean value, standard deviation, and Mann-Whitney U and Wilcoxon test for the purpose of analysis and interpretation. The sample fat this study has been selected from the experts and consultants were those who activating in capital industrial environment. The simple random techniques have been used for selecting people as a sample which 70 of them from well-known experts and consultants of the Iranian industrial environment from two private and public companies were the final samples for this research. The universe in this research is all of the Iranian industrial experts and consultants.

IX. THE HYPOTHESIS RESEARCH

There are four hypotheses as follows:

1. There is difference significant between public and private firms in case of optimum application of JIT!
2. There is difference significant between public and private companies in case of performance measurement of JIT!
3. There is gap between actual and expected situations in case of optimum application of JIT in Iranian companies!
4. There is a gap between actual and expected situation in case of performance measurement of JIT in Iranian companies!

XI RESULT AND ANALYSIS

There are two types of hypotheses. In the first one the difference significant is going to test for hypotheses No. 1 & 2. In the second type the gap expectation between actual and expected situation for hypotheses No, 3 & 4. Will be tested respectively.

1) Testing Of First Hypothesis

According to the amount of mean ranked in table No, 1. Which are 25.57 and 40.36 for public and private companies, also the amount of ranks are 588 and 1897 for public and private companies respectively. According to the amount of p-value with the 1% Alfa, and above results we can state that there is difference significant between two type of companies in case of optimum application of JIT in about Companies. So the optimum use of JIT in Iranian companies is not as expected as actual one.

2) Testing Of Second Hypothesis

According to the amount of mean ranked in the table No. 1 Which are 23.72 and 41.27 for public and private companies , also the amount of rank are 545 and 1939.5 for public and

private companies respectively. According to the amount of p-value with the 1% Alfa, and above results we can state that there is difference significant between two types of companies in case of performance measurement of JIT in about Companies. So the performance measurement of JIT in Iranian companies is not as expected as actual one.

3) Testing Of Third Hypothesis

According to the table No.2 which shows that the amount of $Z=-4.356$ so the result of Wilcoxon ranks are as follow: with the amount of p-value=0.000 there is a gap between two situation and the researchers' assumption is accepted by obvious difference between them and the mean of expected situation is less them actual one at the level of 1% Alfa.

4) Testing of Fourth Hypothesis

According to the table No.2 which shows that the amount of $Z=-3.814$ so the result of Wilcoxon ranks are as follow: with the amount of p-value=0.000 there is a gap between two situation and the researchers' assumption is accepted by obvious difference between them and the mean of expected situation is less them actual one at the level of 1% Alfa

Table No.1,

Description Hypotheses	N		Mean		Sum Rank		Mann – Whitney U	Z	P - Value	Result
	Public	Private	Public	Private	Public	Private				
First Hypothesis	23	47	25.57	40.36	588	1897	312	-2.882	0.004	Accept
Second Hypothesis	23	47	23.72	41.27	545	1939.5	269.5	-3.423	0.001	Accept

Table No.2, Wilcoxon Ranks

Description Hypotheses	N			Mean Rank		Z	P - value	Result
	Negative	Positive	Ties	Negative	Positive			
Third Hypothesis	43	19	8	37.12	18.79	-4.357	0.000	Accept
Fourth Hypothesis	61	9	0	31	66	-3.814	0.000	Accept

Table No.3, Descriptive Statistics

Description Hypotheses	N		Mean		Std. Deviation	
	Actual Situation	Expected Situation	Actual Situation	Expected Situation	Actual Situation	Expected Situation
Third Hypothesis	70	70	2.99	2.75	0.479	0.727
Fourth Hypothesis	70	70	2.609	2.537	0.317	0.297

XI. CONCLUSION

The use of JIT is one of the important reasons in order to implement of this research. As the results stated there are difference significant between application and performance measurement of JIT in public and private companies in Iran. Also there is considerable gap expectation in application and performance measurement at the Iranian public and private companies. The JIT based production quality makes outstanding improvement in area of cost and quality through best use of that and to get feedback, the performance measurement of JIT is necessary for Iranian companies. the results stated that, the situation of private companies to use optimum JIT is much better than public companies in Iran of course we cannot expect that, the JIT program has to be run very fast. Therefore, we have to enter such technical knowledge of production slowly and logically. In this way the companies have to equality themselves and organized the resources. The attitude of both management and employees has to shift on the advantages of using JIT for the production of the company. At first they have to allocate appropriate resources for implementing of JIT is a long-lasting and need expensive process. JIT is one of the parts in the value chain that bring the satisfaction to the customers. Thus for JIT we need hierarchy of employees and drawing all workflow processes in the companies. In the bottom line, the concept of true JIT is the first step to start producing based on JIT.

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Impact of Rising Prices of Fertilizers on Crops Production in Pakistan

GJMBR-A Classification (FOR)
860702

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Abstract-Agriculture plays an important and vital role in any economy especially for a country like Pakistan. Basically Pakistan is an agricultural country with the world's sixth largest population. The current population of Pakistan is more than 160 million which is growing at the rate of almost two percent annually. The major portion of population (67%) lives in rural areas and depends totally on agriculture. Approximately 32% of the population lives below the poverty line. GDP growth depends upon crops production. Industrial sector of Pakistan is also agricultural based. Thus the improvement in industrial sector also depends upon the improvement of agriculture sector. So, if the agricultural production is not satisfactory, the foreign investors shift their capital to other countries where they can get better inputs for their industries. The use of fertilizer in Pakistan has been increased during last five decades. The government of Pakistan imposed a 15 percent GST (general sales tax) on all fertilizers in 2001, thus prices increased. Now prices of major fertilizers, Urea and DAP are 3500 and 700 per 50Kg bag respectively. The main objective of fertilizer use is to improve the efficiency of land and to increase the crop productivity. The overall aim is sustainability and growth in agricultural sector that should match the growing population for food security and the promotion of economic growth. The average farm size in Pakistan is quite small. Farmers have become so dependent on fertilizers for their crop production that they have been left with no other choice without the balance use of fertilizer. With increasing prices the farmers cannot afford to purchase these inputs.

KeyWords: Agriculture; Fertilizers; Price of Fertilizers
Crop Production.

I. INTRODUCTION

Agriculture plays an important and vital role in any economy. It is directly and indirectly linked with the economic activity, growth and development. The rate of agriculture in economic development has been viewed as passive and supportive. Based on the historical experience of western countries, economic development was seen as requiring a rapid structural transformation of the economy from one predominantly focused on agriculture activities to

a more complex modern industrial and service sector. As a result, the primary role of agriculture was to provide sufficient low priced food and man power to the expanding industrial economy, which was thought to be the dynamic "leading sector" in any overall strategy of economic development. Agriculture sector plays an indispensable part in any strategy of economic progress, especially for the 61 low income developing countries. There are several constraints on agriculture which causes low productivity, these are soil degradation (soil salinity, alkalinity, erosion and soil fertility depletion), depletion of water resources, mismanagement of irrigation system, the distribution of the land in small parts and poor farming practices. With all these, the use of agriculture inputs, particularly of fertilizer is insufficient and inadequate. The availability of quality seed and pesticides is limited. Fertilizer plays a vital role in helping farmers to achieve their high level of production. The major problem which is being faced by our farmers is the declining land productivity with reduced crop yields. The major factors contributing to the reduced land productivity is poor soil caused by continuous cropping without using sufficient mineral fertilizers and manures. Sustained, high level of agricultural production can be assured with the adequate use of agricultural inputs. Crop fertilization is the main tool available. Fertilizers are chemical compounds given to plants to promote growth; they are usually applied either through the soil or through leaves. There are two types of fertilizer called organic and inorganic. Both are called "manure". Fertilizers provide essential plant nutrients like Nitrogen(N), Phosphorus(P), Zink(Zn), Boron(B) and Sulphur (S). Nitrogen gives immediately the green impact which the farmer thinks the real impact of any good fertilizer, While Phosphorus plays major role in root growth, energy transfer activities within the plant and finally in crop yield. Balanced fertilization is one of the most important tools to achieve maximum output from land. Balanced fertilization is defined as the rational use of fertilizers and other inputs for best possible supply of all essential nutrients for maximum crop yield. Fertilizers are not cheap and therefore, it is essential that they should be efficiently and effectively used to produce maximum output so that farmers receive the best possible results from their expenses. Balanced fertilization does not mean to add a certain proportion of agricultural inputs (nitrogen, Phosphorus and Potassium or other nutrients) in the form of fertilizer, but it has to take into account the availability of nutrients already present in the soil, crop requirement and other factors. It should take into account the crop removal of nutrients, the economics of fertilizers and profitability, farmers' ability to invest, agro-techniques, soil moisture

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regime, weed control, plant protection, seed rate, sowing time, soil salinity, alkalinity, physical environment, microbiological condition of the soil, cropping sequence, etc. Fertilizers are used when the soil fails to supply the basic nutrients required for adequate growth. According to a (NFDC;1999) report, balanced use of fertilizers increased the yield of wheat by 77%, sugar cane by 100%, rice by 25-100% and cotton by 400%. The use of fertilizer in Pakistan has been increased during last five decades. The government of Pakistan recognized the importance of fertilizer as a major input in 1952 and first introduced it in 1953/54, when it sold 72000 tons. The focus was on introducing and encouraging the use of fertilizers through simple fertilizer trial and demonstration on farmers' fields and also by subsidizing its prices. First prices were fixed by the government since then the use of fertilizer has been rapidly increased day by day. In 1968/69 this demand increased twenty times than that of 1953/54. With the increasing use of fertilizer the emphasis changed to a more balanced use of fertilizer nutrients. However, as the subsidy burden increased, the government started to phase out the subsidy under the SAP (structural adjustment program) and economic reforms, so in 1986 all subsidies were removed on Nitrogenous fertilizer (urea) followed by Phosphate fertilizers (DAP) in 1995 and Potassium fertilizers (NPK) in 1997. The government of Pakistan imposed a 15 percent GST (general sales tax) on all fertilizers in 2001, thus prices increased. Now prices of major fertilizers, Urea and DAP are 3500 and 700 per 50Kg bag respectively. The main objective of fertilizer use is to improve the efficiency of land and to increase the crop productivity. The overall aim is sustainability and growth in agricultural sector that should match the growing population for food security and the promotion of economic growth. The supply sources of fertilizer in Pakistan are domestic production and imports. Those manufactured locally include Urea, Calcium Ammonium Nitrate (CAN), Ammonium Sulphate (AS), Single Super Phosphate (SSP) and Nitrophos (NP). All other fertilizers are imported. Recently the production of SSP and AS has been stopped due to high cost of production. Basically Pakistan is an agricultural country with the world's sixth largest population. The current population of Pakistan is more than 160 million which is growing at the rate of almost two percent annually. The major portion of population (67%) lives in rural areas and depends totally on agriculture. Approximately 32% of the population lives below the poverty line. GDP growth depends upon crops production. Industrial sector of Pakistan is also agricultural based. Thus the improvement in industrial sector also depends upon the improvement of agriculture sector. So, if the agricultural production is not satisfactory, the foreign investors shift their capital to other countries where they can get better inputs for their industries. The average farm size in Pakistan is quite small. Farmers have become so dependent on fertilizers for their crop production that they have been left with no other choice without the balance use of fertilizer. With increasing prices the farmers cannot afford to purchase these inputs. In this way they move to the banks or to other financial institutions in order to get loans

to overcome their expenditures. The farmer has limited assets to the agricultural credit and on the other hand increasing prices of agricultural inputs exert pressure on our farmer that they use inputs less than optimal level. Most of the poor farmers get loans from landlords who charge high interest rate. As a result, production is reduced. In the further study we will see the impact of rising prices of fertilizer on production and also the factors behind this which increase the prices of fertilizer. We will also compare the prices of fertilizer in Pakistan with other countries.

II. PURPOSE OF THE STUDY

Mainly the purpose of our study is to look at the various economic aspects related to prices of fertilizer in Pakistan and to find out the solution of the soaring cost of agricultural inputs, particularly fertilizer, further more Sustainable productivity in our agricultural sector is an important objective.

III. THEORETICAL FRAMEWORK

Sustainable agricultural growth depends upon a whole-system approach whose overall goal is related to the maintenance of the continuing health of the land and people. Therefore it concentrates on long term solutions of the problems instead of short term treatment. For our analysis we use secondary data of last twenty years of Pakistan because in these years prices of fertilizer increased very rapidly. The methodology we will use here is tabulation. The paper is divided into four sections. Results of theoretical analysis is reported in section II. The problems of data collection and sampling procedure are described in section III, while in section IV we conclude the discussion.

IV. LITERATURE REVIEW

Farmers take more from their land than nature even intended. So if you want to see your land more fertile then you must get back extra yield. When we wish to increase the production, this can be realized by using efficient inputs and in the case of crop production fertilizer nutrients for crops is major input. There are two methods of getting fertilizers, organic methods and inorganic methods. It is important to understand the difference between manures and fertilizers. MANURES are largely materials such as garden composts or animal wastes, which usually contains straw type bedding. Manures have some nutrients but these are not available in large quantities. They play a very important role in soil fertility. We can look upon as soil conditioners. They are organic and slow acting methods; they provide plants with nutrients (mostly nitrogen) over a long period. Fertilizers contain plant's food in concentrated form; they can classify into two types ORGANIC and Inorganic. Organic fertilizers are often slow acting and inorganic usually faster. They come either as a compound fertilizer that have a mixture of nutrients. Organic fertilizers are safer in use as compare to inorganic fertilizers. They do not harm the soil natural organism. In fact they positively help and they can be spread freely around plants. Inorganic or artificial fertilizers are minerals extracted from the earth or

completely manufactured. It is recognized that they can damage the soil organism. They need a very good care while using any fertilizer. Using too much fertilizer can upset the soil balance and damage plants by burning them, besides which, it is unnecessary waste of money. Nutrients both natural and man made fertilizers are measured by three major nutrients. Nitrogen (N) it assists the plants in leaf and stem growth. Phosphorus (P) it is commonly called as phosphate assists young plants and root crops to develop good root system. Potassium (K) it is more commonly referred as potash assist plant to produce flowers and fruit. Fertilizers also contain secondary nutrients, which are - Calcium (CA) - most fruit, flowers, and vegetables need some calcium. Magnesium (Mg) - Roses and Tomatoes need these most. Sulphur (S) - most plants. Fertilizers also contain trace elements, which various plants need. These trace elements are usually in such minute quantities in everyday fertilizers that they are of little benefit. If soil is kept in good condition these Trace elements are usually present in sufficient quantity for most needs. If a plant needs more of a specific trace element, it is usually applied as a specialist fertilizer. For reference the trace elements are: - Zinc (Zn) - fruit and vegetables. Copper (Cu) - Fruit and vegetables. Humans, animals and plants rely on a safe, healthy supply of food and nutrients like nitrogen (N), phosphorus (P) and potassium (K) for proper growth and development. Fertilizer is the 'food' that plants need to produce a healthy and bountiful crop. Experts estimate that without commercial fertilizers, the world would be without one-third of its food supply. The objective of use of fertilizer is to improve the efficiency, increase crop productivity and minimization of the impact on the environment. The overall aim is the sustainability in agricultural growth should match the growing population for food security and the promotion of economic growth.

V. CONSUMPTION OF FERTILIZERS IN PAKISTAN

During the early stage in the 1950s, the purpose was introducing and encouraging the use of fertilizers in farms by subsidizing fertilizer prices. Research on fertilizer use in Pakistan started in 1909, with the establishment of the Punjab Agriculture College and Research Institute at Faisalabad (then Lyallpur), followed by the establishment of various research stations in the country. The response of various crops to nitrogen containing fertilizers was published in 1934. Phosphorus shortage reported for the first time in 1952. A Soil Fertility Research and Fertilizer Popularizing Organization established under FAO support in 1958, with the order to conduct applied fertilizer research and promote fertilizer use. In Pakistan a variety of fertilizers, are in use, and some of them are locally manufactured and others are imported. In our country, most of the fertilizers are in use on irrigated wheat, cotton, sugarcane and rice crops. Any shortage of fertilizers in these crops and the consequent fall in their yield would lower agricultural growth. According to (Khaskheli) on these crops, nitrogen application rate is close to 75-80 percent of

the recommendations, compared with about 20-40 percent, depending on the crop, in the case of phosphate. Hardly 1-2 percent of farmers apply potash; that usually applied to fruit, vegetable, and sugarcane crops only. Micronutrient deficiencies are common but less than five percent of the farmers apply micronutrient fertilizers. This shows us that urea is found in Pakistan but other as (DAP) and (MAP) are imported. Pakistan is self sufficient in urea. The price of DAP which is the second largest fertilizer product used after urea, is very expensive and is dependent on international trends. Price disparities lead to high use of urea, and thus to imbalanced fertilizer use at farm level, ultimately results in low production of crops if the prices are high. In recent few years, a sharp increase comes in the price of imported fertilizer and a gap between demand and supply of locally made urea. Both affected the food grain as well as productivity of other crops.

VI. PRICING STRATEGIES

Retail prices were fixed and kept consistent by the Government throughout the country at initial stage and after that increase in the level of fertilizer use, the importance changed to a more balanced use of fertilizer nutrients. However, as the subsidy burden increased, the Government started to phase out the subsidy under the SAP (Structural Adjustment Program) and economic reforms. In 1986, all subsidies on nitrogenous fertilizers were removed followed by phosphate fertilizers in 1995 and potassium fertilizers in 1997. Import controls were lifted, the government stopped importing and the private sector took over. Although the prices of fertilizer have been deregulated partially since 1986 and completely since 1993, frequent price rises have attracted a lot of attention. Urea, sold in 50 kg bags, was priced at Rs 290 per bag in 1995 and was raised to Rs 305 in 1996. Moreover, in May 1996 the two companies, Fauji Fertilizer and Dawood Hercules increased urea prices to Rs 330 per bag. Engro chemical, a major player, did not increase their prices; probably because they have a lower incidence of fixed charges. Their expansion cost was lower because they had purchased a second-hand plant and had added surplus ammonia capacity; in fact, even further expansion will be cheaper. Urea costs Rs 340 in the black market and Rs 371 for the imported variety, DAP prices are at Rs 560 per bag up from Rs 410 end 1994, and they increase in accordance with international prices. Then the government changed the policy and imposed a 15 percent general sales tax on all fertilizers in 2001, thus a sharp increase came in existence in recent years especially in the price of (DAP) 670rs per 50kg bag to 1000rs in 2004 and urea 363rs per 50kg bag in 2001/02 to 450 in 2003/04. In recent year (DAP and UERA) prices increased as 3150rs and 730rs per 50kg bag respectively which causes fall in production of crops. Why prices of fertilizer rising to answer this question there are many reason as for example a gap between demand and supply, rising oil prices, problem in energy sector has raised the cost. "That makes the farmers quite uneasy, not knowing how to keep them afloat". According to a recent Wall Street Journal article, in 2004 in

U.S. natural gas was the most expensive in the industrialized world, averaging \$5.50 per million BTU for the year 2003. At this level, natural gas represents nearly 80 percent of the cost of manufacturing a ton of ammonia. While natural gas is essential to the production of anhydrous ammonia, the starting point for production of most commercial nitrogen fertilizers. What is interesting is that not only are the higher prices for natural gas affecting fertilizer prices, but also national and international factors are influencing the prices of other key fertilizer components like phosphate and potassium. In Pakistan fertilizer industry for nitrogen also using natural gas for production and in past few years it had seen a large increase in the consumption of natural gas in whole country that brought raise in gas prices which directly impact on the production cost of fertilizers which resulted in increase in prices of all kinds of urea fertilizers. Although government of Pakistan providing subsidy but farmers are not much agree with the amount. It was decided in 2002 that government will give 5 percent subsidy and will increase until 15 percent in 2006. Prices of fertilizers also rose because of limited shipping transportation that increased the cost.

VII. METHODOLOGY

Secondary data has been used in this study. We take Urea, DAP and SSP (Single Super Phosphate) as variables. Then we will take four different crops like wheat, cotton, rice and sugarcane as variables in order to check the impact of prices of fertilizer on these crops production.

VIII. SOURCES

National fertilizer development centre (NFDC), Islamabad Record of National Fertilizer Development Centre, Planning and Development Division, Islamabad Federal Bureau of Statistics, Karachi Census of Agriculture, 2000

IX. DATA ORGANIZATION

The data for this study is taken from year 1990 to 2007. The data of fertilizer prices has been taken from 1990 to 2007 but the data of crops production is available from 1995 to 2007. It is secondary data which is collected from the resources given above. This data is designed to evaluate the impact of the rising prices on crops production and to see how much effect on production it shows with the increase in prices.

1) Type of Data

- Prices of major fertilizer
- Various crops production

2) Data Analysis

Prices of Major Fertilizers in Pakistan:

The retail prices of major fertilizer products during last 18 years are given in the above table. The total prices of fertilizer increased in all these years. The main increase was in the DAP price due to a high price on the international

market. The total price of fertilizer in year 1990-91 was 537. In those years price of Urea was 195, DAP 249 and SSP was 93. In 1991-92-93 the prices of Urea and SSP remain same approximately but total fertilizer prices changed due to change in DAP price. It increased from 249 to 264. Then in 1995-96 all fertilizer prices increased which raised total price to up to 764. The price of Urea increased up to 340, DAP and SSP also increased but with slow rate during 1996-97. In 2000-01 prices of Urea and DAP increased up to 363 and 669, respectively, but price of SSP decreased. In 2002-03 again prices of Urea and DAP increased but price of SSP decreased from 280 to 249. So that total price increased in that year but not same as in the previous years. In 2005-06 all prices of fertilizer increased to higher level as Urea 509, DAP 1079 and SSP 269. The total price was 1857 in that year. It was the first time that the prices increased at higher level in the country. Then in 2006-07 total price was 1899 according to table, but it was the first time that price of DAP decreased more than 85 in the last fifteen years. In the light of above table it is clear that total price of fertilizer increased every year. Some variable decreased in some years but their effect on total price is negligible.

3) Change in Growth

We calculate percentage change in growth from total price. We also calculate average price in this table. The formula used for percentage change is given below:

$$\text{Growth in percentage} = \frac{P_c - P_0}{P_0} * 100$$

$$P_c = \text{total price of current year}$$

$$P_0 = \text{total price of last year}$$

This is the secondary data from 1990 to 2007. This table shows the rate of change in fertilizer prices and average prices as well. We see from the table that the total prices of fertilizer increased substantially throughout the sample years. The total and average prices of fertilizer increased steadily, but percent change in prices fluctuated during this period. In 1991-92 prices increased by 4.28 percent while in 1992-93 the prices increased by only 0.36 % which is very low as compare to previous year. During 1993-94 price increased but at a low rate as 2.30, however the prices boom up at a higher rate during next three years as 32.89, 21.60, and 18.84 percent respectively but next year 1997-98 price increased a little bit only as 0.91 percent. In 1998-99 again price increased by 11.76 percent, a high rate. In next two years price increased at a low rate as 2.33 and 0.86 percent respectively. During 2001-02 and 2002-03 price increased as 7.70 and 2.96 percent respectively and in 2004, 05, 06 and 07 price changed upward at the rate of 12.70, 7.91, 7.16 and 2.26 percent respectively. We conclude that price increased in sample years but with high and low rates.

(Rs. per bag of 50 kg)

<i>Year</i>	<i>Total price</i>	<i>Average price</i>	<i>Growth in percentage</i>
1990-91	537	179	-
1991-92	560	186.67	4.28
1992-93	562	187.34	0.36
1993-94	574.9	191.63	2.295
1994-95	764	254.67	32.89
1995-96	929	309.67	21.60
1996-97	1104	368	18.84
1997-98	1114	371.33	0.91
1998-99	1245	415	11.76
1999-00	1274	424.67	2.33
2000-01	1285	428.33	0.86
2001-02	1384	428	7.70
2002-03	1425	475	2.96
2003-04	1606	535.33	12.70
2004-05	1733	577.67	7.91
2005-06	1857	619	7.16
2006-07	1899	633	2.26

Production of Major Crops in Pakistan:

In this table we take the data of production of major crops (wheat, rice, cotton and sugarcane) from 1995 to 2007. From the above figures in the table we see that in 1995-96 total production was 76,699 thousand tons. In these years

fertilizer increased alarmingly in 1996-97 and this clearly shows that production decreased with the rise in prices of fertilizer in this year. From 1997 to 2000 production approximately remained the same. In this 2000-01 total output

<i>Year</i>	<i>Wheat</i>	<i>Rice</i>	<i>cotton</i>	<i>Sugarcane</i>	<i>Total production</i>
1995-96	16,907	3,967	10,595	45,230	76,699
1996-97	16,651	4,305	9,374	41,998	72,328
1997-98	18,694	4,333	9,184	53,104	85,315
1998-99	17,858	4,674	8,790	55,191	86,513
1999-00	21,079	5,156	11,240	46,333	83,808
2000-01	19,024	4,803	10,732	43,606	78,165
2001-02	18,227	3,882	10,613	48,042	80,764
2002-03	19,183	4,479	10,211	52,056	85,929
2003-04	19,500	4,848	10,048	53,419	87,815
2004-05	21,611	5,025	14,265	47,246	88,147
2005-06	21,277	5,547	13,019	44,666	84,509
2006-07	23,295	5,439	12,856	45,742	87,332

the major contribution to enhance total production was of sugarcane with 45,230 thousand tons production. In the next year the total production decreased to 72,328 thousand tons. This decline in the production was due to decrease in cotton and sugarcane production. With the reference of table 1, prices of declined due to increase in prices of fertilizer as shown in table 1.

Production increased from 78,165 to 88,147 thousand tons in the year from 2001-05 because in that period prices of fertilizer did not rapidly increase. This clearly shows that decrease in prices of fertilizer increases the production. Again in 2005-06 prices of fertilizer rose so crops production declined as we see in the table above. In 2006-07

production began to increase and rose to 87,332 thousand tons. In these years rice and cotton were produced in lesser amount because of higher prices of fertilizer, the main contribution in increased production was of wheat and sugarcane.

4) *Change in Production*

We calculate percentage change in growth of production from total production. We also calculate average production in this table. The formula used for percentage change in production is given below:

$$\text{Growth in percentage} = \frac{Y_c - Y_0}{Y_0} * 100$$

Y_c = total production of crops in current year

Y_0 = total production of crops in last year

In the above table the percentage change is shown in crops production taking a sample size of 12 years from 1995-96 to 2006-07. During 1995-96 total production was 76,699 and next year it went down to 72,328, with decreasing rate as 5.70 percent while in 1997-98 production was increased at a high rate as 17.96 percent but next year, production was also increased with a low rate as 1.40 percent. In 1999-00 and 2000-01 the production was decreased with the rate of 3.13 and 6.73 respectively but in 2001-02 and 2002-03 production was increased same as decreased in previous two years.

In 2003-04 production was also increased but at a low rate 2.19 percent, however in 2004-5 production was increased a little bit as only 0.38 but next in 2005-06 production decreased as 4.13. In 2006-07 production increased again by 3.34 percent. We conclude that production fluctuated during all years with decreasing and increasing rates. From the above table, it is clear that the years in which prices of fertilizer were high, crops production decreased or increased with decreasing rate. If we compare total price of fertilizer and total production of crops, we see if the prices increased the production decreased. As in 1996-97 prices of fertilizer increased the total production decreased by more than 4000 tons. Again in 1998-02 production decreased from 86,513 to 78,165 thousand tons. In 2004-05 production remain constant due to increase in prices of fertilizer. In 2005-07 production again decreased from 2004-05. If we see average price and average production this also shows that with average increase in price either production decreased or approximately remained same and the same result we get from percentage growth.

<i>Year</i>	<i>Total Production</i>	<i>Average Production</i>	<i>Growth in percentage</i>
1995-96	76,699	19,175	-
1996-97	72,328	18,082	-5.70
1997-98	85,315	21,329	17.96
1998-99	86,513	21,628	1.40
1999-00	83,808	20,952	-3.13
2000-01	78,165	19,541	-6.73
2001-02	80,764	20,191	3.32
2002-03	85,929	21,482	6.39
2003-04	87,815	21,954	2.19
2004-05	88,147	22,037	0.38
2005-06	84,509	21,127	-4.13
2006-07	87,332	21,833	3.34

X. CONCLUSION

Using the secondary data, we have analyzed the productivity behavior, adoption of fertilizer and the impact of its prices on the production of different crops. It can be said that the farms in which fertilizer is used, yield higher productivity than the other farms. A part of the gains in productivity is attributed to a more balanced and efficient use of fertilizers. We have taken the secondary data and a sample size of 18 years from 1990 to 2007 which shows that the agricultural production is highly dependent on the use of fertilizer and balanced use of fertilizer depends on its prices. The data shows that as the prices of agricultural inputs increased, the

productivity also declined because our farmer can not afford these inputs at higher prices. The fertilizers are highly energy and gas intensive, whose prices have increased in recent years and have shown an upward trend. This trend is likely to continue steadily in the future. At the same time, the use of such inputs is critical in agricultural development and is likely to become even more critical in the future. As a result, the cost of production will increase because the fertilizer becomes expensive due to increase in prices. Production function analysis also supported the findings that crops productivity tends to be higher in those farms in which fertilizer is efficiently used. Other things keeping constant the crops productivity will increase due to the balanced use of fertilizers. From our analysis it is shown that prices of fertilizer increased rapidly through all the sample years from 1990 to 2007, which decreased the crops

productivity. The prices of almost all agricultural inputs and outputs substantially increased in these years. Fertilizer prices and crops production are inversely related to each

other. From these results it seems that fertilizer facilitates the agricultural development by increasing crops productivity.

Years	Total price	Average Price	% change in Price	Total production	Average Production	% change in Production
1995-96	929	309.67	-	76,699	19,175	-
1996-97	1104	368	18.84	72,328	18,082	-5.70
1997-98	1114	371.33	0.91	85,315	21,329	17.96
1998-99	1245	415	11.76	86,513	21,628	1.40
1999-00	1274	424.67	2.33	83,808	20,952	-3.13
2000-01	1285	428.33	0.86	78,165	19,541	-6.73
2001-02	1384	428	7.70	80,764	20,191	3.32
2002-03	1425	475	2.96	85,929	21,482	6.39
2003-04	1606	535.33	12.70	87,815	21,954	2.19
2004-05	1733	577.67	7.91	88,147	22,037	0.38
2005-06	1857	619	7.16	84,509	21,127	-4.13
2006-07	1899	633	2.26	87,332	21,833	3.34

XI. POLICY RECOMMENDATION

The following suggestions would be fruitful in promoting the balance use and proper management of fertilizers and increasing crop yields and soil fertility

- Establishing the technical support fund to help the enthusiastic farmers having difficulties to form the key farmer class at the grassroots units

The chemical fertilizers are very expensive therefore, should be used judiciously and use manures along with chemical fertilizers for improving the crop yield and soil productivity in a sustainable way. Many more activities are being planned to promote the balanced use of fertilizers. And it is hoped that all these efforts would lead to desired awareness and as a result balanced fertilizer use would become a reality in near future.

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Why is eBay the Most Successful Online Auction?

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{ *GJMBR-B Classification (FOR)*

350213 }

Abstract-The use of the World Wide Web has become one of the inevitable ways in obtaining and gathering relevant information regarding a myriad of subject matters and issues. Its use is most popular among the society, most especially the younger generation, who perceive the Internet as one of the most helpful tools in terms of education and communication. In addition, its use is being maximized and utilized in terms of business and marketing, such as being done by the eBay company, with their online auction. Through online auctions, individuals are able to obtain and purchase their needed and wanted items directly, without the hassle of travelling and physically looking for the products. With this, this paper discusses success in terms of online auctioning, and investigates how eBay has become the largest online auction house.

I. INTRODUCTION

Pierre Omidyar, a computer programmer, founded the eBay site on September 3, 1995 as Auction Web, as part of a larger personal site (2007), and since then, the eBay juggernaut has been rolling its way. It is really very astonishing to think that this website was created to sell Pez dispensers and other kinds of collectibles, and would become the leader in the market of e-commerce (2002). In addition, many observers, who have seen eBay grow to the position that it has attained now, commented that there is no force able to stop it from becoming the world's most successful online auction site. Its business process creates a business model, which does not require the carrying on of any inventory, but rather has its share of the profit margin from every transaction that it does. The operation of the company is done by the means of its market mechanism. With this business process, eBay is able to sell anything and everything that is legal, and which does not violate its policy regarding restricted items. Thus, this research project will introduce and demonstrate that eBay is the most successful website that highlight online auction, and that no existing competitors will be able to compete against this eminent online auction house.

II. FEATURES

The breadth and depth of eBay's website can seem daunting to users who have recently joined eBay, but eBay's website is actually not difficult to navigate once you consider its basic functions. At the simplest level, eBay is composed of following eight basic website areas:

- The front page at www.ebay.com.
- Lists of the categories in which sale items can be found.
- Search or browse results that list items for sale within a category or based on your keyword searches.

- Individual item listings giving price, description, and (usually) a photo of the item.
- Selling tools used to list your own items for sale.
- My eBay, the page used to manage your own account, purchases, and items for sale.
- eBay Help, where you'll find instructions, rules, policies, and answers to common questions.
- eBay Community, where you can interact with other eBay users.

Safety features of ebay are as follows:

1) *Feedback*

As previously mentioned eBay has a unique feedback system, allowing buyers and sellers to post comments and feedback on their recent auction experience. Each transaction allows you to give a single rating to your trading partner – positive, negative, or neutral. You may also make comments (no foul language, abuse, racial comments, etc are allowed). Each user has a feedback score that serves as an indicator of their quality as buyers and sellers. It is effectively your online reputation. The more positive feedback you get, the higher your score, which also eventually is visually identifiable with a star system so experienced eBuyers can tell something about you at a glance. Negative feedback lowers your score. There are also a running percentage of positive feedbacks. Some sellers will not allow buyers below a certain feedback level, as new, or fake, buyers who will generally have little or negative feedback ratings commit most fraud.

2) *Buyer Protection*

Currently eBay offers buyers protection. Online payment service users, such as PayPal are assured a Buyer Protection shield covered up to \$500 (subject to change) at no additional cost. For users who are not using PayPal as their mode of transaction there is the eBay Standard Purchase Protection Program which provides up to \$200 coverage (less \$25 processing cost) for either items that are not received or items that are not as described in the listing. The resolution process can be slow and on many transactions that fee makes it not worth doing, so it is better to caveat emptor up front than hope to get money back on a bad deal later.

3) *Fraud Protection*

There are a number of ways eBay works to minimize fraud, some of which are automatic. The website feature of eBay allows the users to keep a constant track of which sites they

visit. Whenever a user leaves eBay by clicking on a link, or when are transacting on PayPal, the system warns them of potential frauds. In addition, eBay helps users prevent and combat fraud by conducting online tutorials on fraud emails such as those requesting personal or financial data no legitimate company would request and educating members on how to report such issues to the eBay authorities.

4) *Business Model*

eBay has built an online person-to-person trading community on the Internet, using the World Wide Web. Buyers and sellers are brought together in a manner where sellers are permitted to list items for sale, buyers to bid on items of interest and all eBay users to browse through listed items in a fully automated way. The items are arranged by topics, where each type of auction has its own category. eBay has both streamlined and globalized traditional person-to-person trading, which has traditionally been conducted through such forms as garage sales, collectibles shows, flea markets and more, with their web interface. This facilitates easy exploration for buyers and enables the sellers to immediately list an item for sale within minutes of registering. Browsing and bidding on auctions is free of charge, but sellers are charged two kinds of charges:

- When an item is listed on eBay a non refundable Insertion Fee is charged, which ranges between 30 cents and \$3.30, depending on the seller's opening bid on the item.
- A fee is charged for additional listing options to promote the item, such as highlighted or bold listing.
- A Final Value (final sale price) fee is charged at the end of the seller's auction. This fee generally ranges from 1.25% to 5% of the final sale price.

eBay notifies the buyer and seller via e-mail at the end of the auction if a bid exceeds the seller's minimum price, and the seller and buyer finish the transaction independently of eBay. The binding contract of the auction is between the winning bidder and the seller only.

5) *Literature review*

It has been reported that electronic commerce or e-commerce is becoming increasingly important to consumers, sellers, and entire communities (2005). As a proof of this, during 2003, approximately 40 million households in the United States made at least a single purchase from the Internet (2005). With this, online marketing has become and will continue to become a full and complete business model for other companies (2005). The increasing importance of e-commerce and the use of the Internet, led many online companies, such as eBay to engage in online auctioning. Ten aspects are attributed to the success of eBay, namely, commitment, well-spent funds, an effective and persistent marketing and public relations, great products or services to sell, not selling of junk, great customer service, efficient and pleasant facility, polished listings and photos, paying attention to details, and good recordkeeping (2006). These ten aspects are perceived to be contributory to the success of

eBay in the industry as the leading online auction house, and determine its edge over its competitors. The success of eBay has inspired other online companies to engage in the same business, of perceiving the same attention that it receives from consumers. With this, several competitors can be pointed out, which are also online companies that engage in the same services that eBay offers. Aside from Amazon.com, Yahoo! and Netscape (2005), several other online companies have also emerged, including Ubid.com, bid-alot.com, uauction.com, auctionfire.com (2005), and Google (2007). However, the competition against eBay is not only based on e-commerce and the use of the Internet, for many still use conventional methods in advertising and selling their products and services, thus, points out the indirect competitors of eBay. The indirect competitors of eBay include online stores, retail outlets, physical auctions such as galleries, shops, boutiques, and estate sales, newspaper classified ads, radio and television ads, bulletin boards in stores and offices, billboards, cable TV channels (2005), and other forms of media. From this, it can be seen that eBay has many direct and indirect competitors, which somehow lessens the amount of consumers that are being helped buy and sell their stuff. However, despite the presence of a number of competitors, eBay is still considered the largest online auction house that is being accessed by most consumers. This issue leads many researchers and analysts to recognize the importance and significance of e-commerce as a primary factor of generating an online community. Through online communities, such as those developed groups that access eBay, help introduce and promote specific brands of products and services. It has been reported that in the traditional brand relationship, communication flows between the vendor and the consumer, while with brand-based online communities, the potential dialogue flowing between consumers is achieved through real time „chat“ taking place in chat rooms, and through asynchronous discussions that play over days, weeks, and months in discussion forums or bulletin boards (2001). From this, it can be understood that word-of-mouth and online conversations contribute to the information of consumers, on where to access their needed products and services in the Internet.

III. METHODOLOGY

In order to complete an efficient study, it uses a descriptive research method, which uses observations and surveys. Specifically, a quantitative descriptive method was used, because it plainly and distinctively specifies both the independent and dependent variables under investigation. The questionnaire was designed to demonstrate the popularity of eBay against the popularity of other online auction sites. Through the questionnaire, it can conduct a survey of fifty (50) respondents, which includes family members, friends, and colleagues, with an age range of 18 and 50. The purpose of the age range is because this particular age range is the group of users who mostly have

access to the Internet, compared to the rest of the population. This indicates that the study uses a simple random sampling method. This study was carried out within a period of two weeks, with the assistance of friend, to help with data gathering and analysis. The sample size of the research study includes fifty respondents only, to show that eBay is already popular within this small number of respondents. It also shows that the popularity of eBay within the given age range is regardless of the number of respondents that will be included in the research study. In terms of data distribution and gathering, the survey questionnaire will be personally distributed to the residences of respondents, or sent through electronic mail. On the other hand, the secondary sources of data will come from published articles related to the topic, including books, related academic journals and magazines, and online sources. In addition, analysis and interpretation of the data will be done using graphs, charts and tables, and with the use of simple statistical computations.

IV. RESULTS AND FINDINGS

Among the number of respondents, majority belong the age range of 18 to 25 years old, having 18 respondents. Fifteen respondents belonged to the age range of under 18 years old, 9 respondents belonged to the age range of 25 to 45, and 8 respondents belonged to the age range of 45 years old or more. Along with the age of respondents is their gender. From the data obtained, 23 females and 27 males responded to the survey. Another aspect that must be given emphasis is the particular reasons respondents like eBay. Majority of respondents, with 17 responses, like eBay because of the number of products and finds that eBay provides. Twelve respondents like eBay because of rare finds, while respondents like eBay because of its shipping terms and insurance. All three aspects like the products are alphabetically arranged, the products have pictures and details, and its modes of payment, have 3 respondents each. Respondents also liked the fact that the website is easy to navigate and it's signing account, which had 2 respondents each. Lastly, only one respondent liked the fact that the products are placed in categories. In addition, the data as to why the respondents perceive eBay as successful is important. Majority of the respondents, with 10 respondents each, believe that the success of eBay is attributed to its large selection of items and the buyer's experience. Next in line is the image the website created, having 9 respondents. The next factor responsible for its success is the seller's feedback, having 8 respondents, while 6 respondents believe that its reputation is the attributable for its success. Five respondents believe that eBay is easy to use, while 2 respondents like the website being safe. In addition, no respondent perceived the aspect of fun, payment options, free registration, website design, website promotion, and others as contributory to its success. Another factor that determines the success of eBay in its industry is the satisfaction

that customers get from its services. According to the data collected, twenty of the respondents stated that they are satisfied with the service, while eight respondents are very satisfied with the service. Ten respondents said that they are dissatisfied, while seven are very dissatisfied with the service of eBay. Three respondents are undecided and two respondents said that the question is not applicable. This is shown in Appendix A. An important aspect to take note of is the attributes that affect the importance of selecting products on eBay, which includes quality, cost, quantity, brand name, and familiarity. The respondents ranked the five different attributes according to its importance to them, and according to the data collected, quality ranked the first, having a score of 18. Cost ranked second, which gave the score of 15, brand name ranked third, with the score of 10, and familiarity ranked fourth, with the score of 4. Among the five attributes, quantity ranked the last, which gave the score of 3. This data is shown in Appendix B.

V. DISCUSS

From the results, it can be emphasized that the popularity of eBay transcends age, occupation, nationality and race. This means that respondents in their early and mid 20s are the ones more exposed to the website compared to other respondents belonging to other age ranges. From this, it can be understood and correlated that respondents belonging to the specified age range purchase and visit eBay more often compared to other respondents. It is probable to also indicate that these respondents, being young and more determined to earn money from their employment; they are the ones who have the capacity to purchase items from eBay. This can be supported by the fact from recent surveys; 80 million US Internet users visit eBay (2006) and probably make some purchases. In the United Kingdom, survey indicates that eBay UK is one of the most visited websites of Internet users with the ages of 18 to 24 (2006). This just proves to show that eBay is more popular to the male gender compared to females, belonging in the age range of 18 to 25 years old. The results indicate that the success of eBay is attributed to the number of products listed in its website, followed by the fact that consumers can purchase more rare finds in eBay compared to other online auction websites. This result corresponds to the findings of (2006), which listed ten aspects that are attributed to the success of eBay, and "great products or services to sell", is one of them. This is further supported by the data gathered, which indicates that the presence of large selection of items is the aspect most liked by its consumers, which is also supported by the statement of (2006). In addition, the results also indicated that among the important attributes of purchasing a product from eBay, the quality and the costs of products received the highest rank from the respondents. These findings are further supported by the study done by Kim (2005), who found out that the top factors customers consider before choosing a product are price, quality, technology and features respectively. However, the study done by (2003)

indicates that not all Internet users purchase items or stuffs from online auction websites, such as eBay with the fear that online shopping may not be safe, and for not having the confidence of knowing how to do it. This study also suggests that only about 3.1 to 3.2% of online surfers who visit the website make a purchase (2003), which negates the observations of this study. Last aspect that must be given importance is the satisfaction that consumers get when purchasing from eBay. From the data, it can be observed that more respondents are satisfied with the services of eBay, compared to the not satisfied ones, which clearly indicates that the rate of use of the website is directly proportional to the satisfaction of its users. The satisfaction of the consumers of eBay is being focused upon by its services depending on the complaint of clients. This is done through eBay's Feedback system, which means establishing a user's reputation, its Independent Feedback Review, which allows evaluation of transaction, and through its Standard Purchase Protection Program Process (2006). Through these strategies, eBay is able to sustain and maintain its consumers, thus, aiming at their satisfaction and rendering effective and efficient service.

VI. CONCLUSIONS AND RECOMMENDATION

This research study was successful in addressing its goals and objectives of examining the success of eBay, of identifying its direct and indirect competitors, and of identifying the strategies of competitors in competing with eBay. The study shows that eBay is more popular to the male gender compared to females, belonging in the age range of 18 to 25 years old, that the number of products and services is its primary strength, and that quality and price are two of the most important aspects that consumers give importance to when purchasing a product or service. This aspect is thus, related to the satisfaction of consumers with the products and services offered and rendered in eBay. For the improvement of this research study in future endeavours, recommendations include the increase in the number of respondents that the study can consider, the consideration of other factors in the questionnaire, such as other online auction websites visited and used by consumers. This would enable the researcher to understand what aspects are lacking from eBay. as Markov Processes Industrial Technology

VII. APPENDICES

Appendix A. Table showing the rate of satisfaction of respondents on the services of eBay

Very Satisfied	Satisfied	Undecided	Dissatisfied	Very Dissatisfied	Not Applicable
8	20	3	10	7	2

Appendix B. Table showing the ranked importance of attributes in selecting products in eBay

Attributes	Quality	Cost	Quantity	Brand Name	Familiarity	Total
Rank	1	2	5	3	4	
Score	18	15	3	10	4	50

Mean Reversion in Share Price Dynamics: Evidence Through Transition Probabilities

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Abstract-Share price analysis and forecasting hitherto were carried out with traditional tools, like autocorrelation, run tests, regression through method of least squares and conventional charts. In this paper, we have attempted Markov chain as the tool to estimate the transition probabilities their steady state and the mean reversion time. The market prices stay in a state for sometime before moving to another state. Markov chain captures these movements through transition probabilities. To estimate the transition probabilities, we selected 81 companies from consumer industry and classified them into three groups depending on current market prices. Among the groups, the third group whose market prices are more than three Ringgit show a higher steady state probability with a lesser mean reversion time indicating greater chances of price increase. The transition probabilities are higher in three situations viz., market price increase followed by price decrease, stable market prices followed by stable prices and decrease in prices followed by increase in market price. The shares whose prices are more than three RM show lower mean reversion time and high steady state probabilities for increase state than price decrease state and decrease state. These results support the notion that higher priced shares normally are popular, liquid and active therefore the probabilities of price increase are higher.

Keywords- Markov Chain; Transition Probabilities; Steady State; Share Prices; MATLAB; Reversion Time; Transition Matrix.

I. INTRODUCTION

Modern empirically intensive analytical methods have changed completely the share price analysis which was done hitherto through traditional techniques like autocorrelation, regression and charts. They include Markowitz model which estimates mean and variance, while Capital Asset Pricing Model compares the share prices to market index points to compute beta to measure its return and variability. Advanced models like GARCH (Batchelor, 2003) and EGARCH apply the drift and diffusion framework as postulated by the Brownian movements to derive ex-ante share prices. All the above models assume that future share prices depend on the past share prices, trend, drift and volatility, hence they use past prices as the basis for estimating forward prices. The efficient market hypothesis claims that the current market price of a share reflects all information (Ross et al., 1999) and share price movement is independent (Bessent and Bessent, 1980) and stochastic

(Akinc and Meredith, 2006). In other words, there is no connection between the historic prices and current prices or the future prices. In contrast the Markov chain process (Barkman, 1981) postulates that the forward share price depends only on the current price and the share price does not have memory and it is not dependent on the historic price (McQueen, 1991). This could be compared to weather forecasting, where rain forecast depends only on the current weather conditions and not at all connected with the historic weather conditions. The weather, share price and many other economic variables have no memory of past meaning that they do not depend on the historical data. Their future states depend only on the current state. In this paper, Markov chain process is used to observe the movements in the share price (Ryan, 1973) by linking what had happened to share price the previous day (Dryden, 1969). A Markov process is deemed to have a finite number of states (Dent, 1967; Orlando and Matchar, 2004) whereby the next price movement depends only on the current price movement. The Markov model is founded on this premise (Heneman, 1977) and it argues that the forward share prices depend only on the current price and the share price has no memory, therefore the historical prices are meaningless (Fielitz, 1973). To find forward prices it is essential to get current state of the price and its chances of moving to another state next day (Ezzati, 1986). The chances of price movement under Markov chain, is specified as transition probabilities.

II. TRANSITION PROBABILITIES

Transition probabilities are explained through three stages (Betancourt, 1999; Kennedy, et al., 1999). First they are identified in which state they stand at present and after one time step (the next day) where would they move. A state denotes the current state of a variable which is the share price for this research paper. Step is the time element that changes from day one to day two, along with it the share price also moves. The future share prices depend on the number of steps the time moves (Assoce, 1998). When time moves from t_0 to t_1 , the share prices will also move in some direction. Either it may increase or remain at the same price level or it may decrease. The frequency of these changes when computed and converted into percentages, they give transition probability (Wise, 1999). The rate of change in share price from one state to another state is transition (Lahiri, 1994). These concepts are explained through transition matrix (Betancourt, 1999; Fielitz, 1975) and as well as matrix algebra as follows.

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$$\text{Historical share prices} = (P_i) = \begin{pmatrix} X_1 \\ X_2 \\ * \\ * \\ * \\ X_n \end{pmatrix} \text{ a column vector.}$$

Current share price may be 0 or a scalar and cannot be a negative figure.

$$\text{From / To} \begin{pmatrix} \mathbf{I} & \mathbf{S} & \mathbf{D} \\ \mathbf{I} & P_{ii} & P_{is} & P_{id} \\ \mathbf{S} & P_{si} & P_{ss} & P_{sd} \\ \mathbf{D} & P_{di} & P_{ds} & P_{dd} \end{pmatrix}$$

P_{ii} = Probability of increase in price followed by a price increase

P_{is} = Probability of Increase in price followed by stable price

P_{id} = Probability of increase in price followed by price decrease

P_{si} = Probability of stable in price followed by a price increase

P_{ss} = Probability of stable in price followed by stable price

P_{sd} = Probability of stable in price followed by price decrease

P_{di} = Probability of decrease in price followed by a price increase

P_{ds} = Probability of decrease in price followed by stable price

P_{dd} = Probability of decrease in price followed by price decrease

The above matrix is the first step transition matrix. To get the second step transition probability and up to n step probabilities the following procedure will be applied.

$$\begin{aligned} T_{p2} &= T_{p1} \times T_{p1} \text{ or } T_{p1}^2 \\ T_{p3} &= T_{p2} \times T_{p1} \text{ or } T_{p1}^3 \\ T_{p4} &= T_{p3} \times T_{p1} \text{ or } T_{p1}^4 \\ T_{p5} &= T_{p4} \times T_{p1} \text{ or } T_{p1}^5 \\ T_{p6} &= T_{p5} \times T_{p1} \text{ or } T_{p1}^6 \end{aligned}$$

III. STEADY STATE STATIONARY PROBABILITIES

When the time steps increase continuously normally the probabilities should increase. But the transition probabilities change at a slow motion for sometime and later it becomes stable or stationary (Betancourt, 1999; Bessent and Bessent, 1980). Thereafter any increase in time step does not change the probability. It is a steady state which explains the long run behaviour of the variable chosen.

Mathematically, $Tp^n = Tp^n * T_1$

Tp^n will be the same even after multiplying by the current state Probability matrix will be the same even if the t is increased to any number. This convergence of probabilities is known as steady state and it is useful to deduce the long-term behaviour of the variable and the time spent by the variable in one state before moving to another state, which is the mean reversion time. The mean reversion time (Poterba, 1988) or the time spent in a state by the variable before moving to another state could be found by the following process. The reciprocal of the steady state probabilities will give the mean reversion time.

$$MRT = 1/T^n$$

MRT= Mean Reversion Time

T^n = Steady State Probability

IV. SIGNIFICANCE

The transition probabilities are useful in evaluating portfolio decisions in terms of cost. The steady state probabilities show the long term behaviour of share prices. The portfolio manager can estimate, plan and control the share price movements and also he can plan in advance the man power requirements based on the number of transactions to be carried out in future. The transaction costs of dealing in shares and the opportunity cost of holding liquid cash can be minimized through this information. Mean reversion time is useful information, which could be used in finding efficiency and effectiveness of transactions.

Our interest is

- To investigate whether the transition probabilities and the steady state probabilities of share prices behave in similar way if the shares are grouped as low, medium and higher prices.
- At what time step transition probabilities attain steady state?
- What is the average time spent in each state before moving to another state by these share prices?

This information will add more insight in selecting shares for portfolio construction, also in estimating mean reversion time and the number of transactions to be carried out in making buy, hold and sell decisions.

V. METHODOLOGY

In Markov process, it is assumed that the probability of the share price moving from one state to another state solely depends on the state that existed just before and certainly it does not vary with time. Share price is independent of time. It is like dice through. First throw result is in no way connected with the second throw result. The time element has no role in dice throw. Similarly the share price movements are independent and do not depend on time. Future share price either will increase, decrease or will not change from the previous level. The share price follows a trinomial lattice. The share prices will have nine states in a time step depending on the current state. In the current state the share price may increase and in the next time step it may

increase or remain stable or may decrease. The second possibility is that the current state may be a decrease, followed by another decrease and so on. The share prices have nine states in their movements as follows. Mathematically it could be in any one of the following nine states.

- 1) Preceding day price increase in share price followed by:
 - a) next day price increase in (P_{ii})
 - b) next day price stable (P_{is})
 - c) next day price decrease in (P_{id})
- 2) Preceding day stable share price followed by:

- a) next day price increase in (P_{si})
- b) next day price stable (P_{ss})
- c) next day price decrease in (P_{sd})

- 3) Preceding day decrease in share price followed by:
 - a) next day price increase in (P_{di})
 - b) next day price stable (P_{ds})
 - c) next day price decrease in (P_{dd})

In general, the share price moves at random and therefore a probability term is attached to describe it. The table below shows the technique of calculation of the transition probabilities.

Table 1 Empirical example of transition probability

Day	Initial State	Increase	No change	Decrease	Total
t_0	$t_0 \longrightarrow t_1$ Increase	24 days	26 days	38 days	88 days
t_0	No change	31 days	29 days	23 days	83 days
t_0	Decrease	33 days	28 days	20 days	81 days
Transition Probability	Increase	0.273 P_{ii} (24/88)	0.295 P_{is} (26/88)	0.432 P_{id} (38/88)	1
	Decrease	0.373 P_{si} (31/83)	0.349 P_{ss} (29/83)	0.277 P_{sd} (23/83)	1
	No change	0.407 P_{di} (33/81)	0.346 P_{ds} (28/81)	0.247 P_{dd} (20/81)	1

To investigate the research questions we have selected the consumer industry companies. To compute the transition probabilities, the steady state probabilities and the average time taken by the share price to move from one state to another state we have selected consumer industry. The companies in consumer industry are growing fast in terms of sales and assets. They also expand geographically and establish centers even in semi-urban areas. These companies are more transparent in disseminating more information to investors and shareholders in the form of disclosure. Moreover, the consumer companies are directly deal with the public and practice business to consumer B₂C. The sample includes 81 consumer companies listed in the main board of Bursa Malaysia. Share prices of these 81 companies were downloaded from the Yahoo finance for the year 2009. First, we have calculated the transition probabilities individually through a self written MATLAB program, which is annexed at the end. The transition probabilities were classified in three different groups based on market share prices (Betancourt, 1999). The first group consists 34 companies whose market prices are less than RM 1 whereas the second group consists of 33 companies

Table2 Initial Average Transition Probabilities of Share Prices

FROM	TO
State i	State j
Increase	$\left(\begin{array}{ccc} \textit{Increase} & \textit{Stable} & \textit{Decrease} \\ \textbf{Market Price less than 1 RM} & & \\ 0.210 & 0.318 & 0.472 \\ 0.266 & 0.483 & 0.251 \\ 0.397 & 0.362 & 0.241 \end{array} \right)$
Stable	
Decrease	
Increase	$\left(\begin{array}{ccc} \textbf{Market Price between 1 and 3 RM} & & \\ 0.273 & 0.297 & 0.430 \\ 0.261 & 0.448 & 0.291 \\ 0.400 & 0.320 & 0.280 \end{array} \right)$
Stable	
Decrease	
Increase	$\left(\begin{array}{ccc} \textbf{Market Price more than 3 RM} & & \\ 0.323 & 0.297 & 0.380 \\ 0.301 & 0.392 & 0.307 \\ 0.408 & 0.350 & 0.241 \end{array} \right)$
Stable	
Decrease	
Increase	$\left(\begin{array}{ccc} \textbf{All Companies} & & \\ 0.255 & 0.306 & 0.439 \\ 0.270 & 0.453 & 0.277 \\ 0.400 & 0.343 & 0.257 \end{array} \right)$
Stable	
Decrease	

Group two and group three companies also show similar pattern. All anti principal diagonal probabilities are higher. When transition probabilities are combined for all companies they also show similar pattern. The non leading diagonal p_{id} , p_{ss} and p_{di} shows the maximum probabilities. It implies that when the previous state is increase there is a greater chance of price decrease. Similarly when the previous state is decrease there is a greater chance of price increase.

The stable state has more chances of stability in prices. These probabilities imply that the consumer companies' share prices do not change most of the days and they are moderately stable. They do not follow any conceivable trend, increase would not follow a consistent increase and similarly, a decrease will not follow a decrease, instead, most of the days they move in opposite directions.

Table 3 Two Step Transition Probabilities of Share Prices

Form	To											
	GROUP 1			GROUP 2			GROUP 3			ALL		
	I	S	D	I	S	D	I	S	D	I	S	D
I	0.316	0.391	0.293	0.324	0.352	0.324	0.349	0.345	0.306	0.323	0.367	0.310
S	0.284	0.409	0.307	0.304	0.372	0.324	0.341	0.350	0.309	0.302	0.383	0.315
D	0.275	0.388	0.336	0.305	0.352	0.343	0.336	0.343	0.321	0.298	0.366	0.337

The above table exhibits the transition probabilities in two time steps. A closer observation reveals that the first column and the third column in each group including all companies group, gain probability and the stable column shows a

reduction in probability. It implies that as time goes the stability in share price decreases and the prices become more volatile.

Table 4 Three Step Transition Probabilities of Share Prices

From	To											
	GROUP 1			GROUP 2			GROUP 3			ALL		
	I	S	D	I	S	D	I	S	D	I	S	D
I	0.287	0.395	0.318	0.324	0.310	0.358	0.341	0.346	0.312	0.305	0.371	0.323
S	0.290	0.399	0.311	0.304	0.310	0.361	0.342	0.347	0.312	0.307	0.374	0.320
D	0.295	0.397	0.309	0.305	0.312	0.358	0.343	0.347	0.310	0.309	0.372	0.319

Three time step probabilities of all three groups and all companies are given in the above table. The first columns of group one and group two companies show a reduction probabilities and the third column show an application in probabilities The middle column probabilities are more or

less stable. Group three and all companies increase column show probability increase and the decrease column probabilities show a reduction. This is quite contrast to the first two groups. As time increases these probabilities begin to converge to a stable level.

Table 5 Four Step Transition Probabilities of Share Prices

From	To											
	GROUP 1			GROUP 2			GROUP 3			ALL		
	I	S	D	I	S	D	I	S	D	I	S	D
I	0.292	0.397	0.311	0.311	0.359	0.330	0.342	0.346	0.311	0.308	0.372	0.320
S	0.290	0.397	0.312	0.310	0.359	0.330	0.342	0.347	0.312	0.307	0.373	0.320
D	0.290	0.397	0.313	0.310	0.359	0.331	0.342	0.346	0.312	0.307	0.372	0.321

The fourth time step transition probabilities are more or less stable in all columns. Group one, two and all company's increase column shows lesser probability while the third group's increase column shows higher probability. The first group

and all companies stable column (second) show higher probabilities (39.7% and 37.2%). Group two and group three middle columns (stable) show probabilities of 36% and 35% approximately, respectively.

Table 6 Five Step Transition Probabilities of Share Prices

		To											
		GROUP 1			GROUP 2			GROUP 3			ALL		
From		I	S	D	I	S	D	I	S	D	I	S	D
I		0.290	0.397	0.312	0.311	0.359	0.331	0.342	0.346	0.312	0.307	0.372	0.320
S		0.291	0.397	0.312	0.311	0.359	0.331	0.342	0.346	0.312	0.307	0.373	0.320
D		0.291	0.397	0.312	0.311	0.359	0.330	0.342	0.346	0.312	0.307	0.373	0.320

The five step time transition probabilities are almost converged and almost all columns show in each group equal

probabilities. A clear long term pattern is emerging though it is not perfectly converged yet

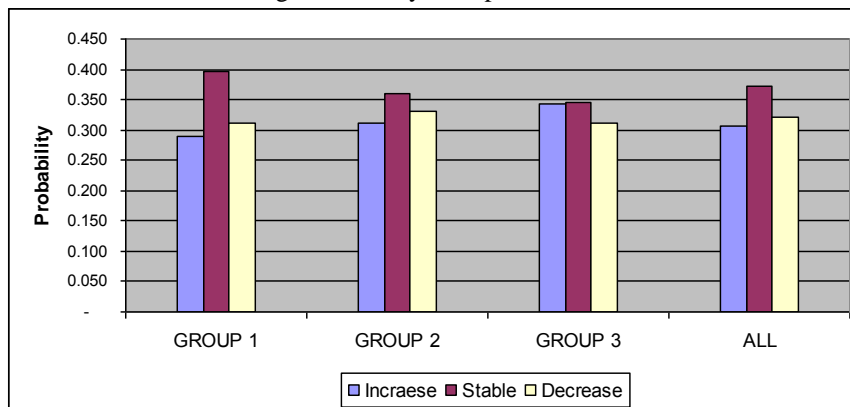
Table 7 Six Step Transition Probabilities of Share Prices

		To											
		GROUP 1			GROUP 2			GROUP 3			ALL		
From		I	S	D	I	S	D	I	S	D	I	S	D
I		0.291	0.397	0.312	0.311	0.359	0.331	0.342	0.346	0.312	0.307	0.373	0.320
S		0.291	0.397	0.312	0.311	0.359	0.331	0.342	0.346	0.312	0.307	0.373	0.320
D		0.291	0.397	0.312	0.311	0.359	0.331	0.342	0.346	0.312	0.307	0.373	0.320

At the sixth time step within each group the column probabilities are absolutely equal. In the later time steps these probabilities do not change. They reveal the long term behaviour of share price. If current share prices are given, then one can easily calculate the expected share price in the future. In low price companies in higher time steps the chances of price increase is not bright, the chances of stability is normal and the chances of share price fall is more. This may be due to the non popularity and illiquidity of these low priced shares. The second group i.e. companies whose share price is between RM1 and RM3, the chances of price increase is slim than the price decrease. As exhibited by group one this group's price stability is also fair. This could be attributed to the same causes of non popularity and illiquidity of these

medium priced shares. The group three companies results show a diametrically opposite pattern. The chances of price increase are more than the chances of price fall. The stable probabilities are lesser when compared to other the two groups. This could be due to the excitement, popularity and the liquidity provided by these companies' shares. The above results are on the expected lines. The low priced shares are normally illiquid and normally not active and therefore, the chances of the price increase will be slim. The medium price shares are also not so attractive to the investors for the same reasons stated above. The companies whose prices are higher will be popular among the investors. Normally these shares are highly liquid, active, and popular. Therefore, the chances of price increase are greater than the price decrease.

Figure 1 Steady state probabilities



The steady state stable probabilities are larger in the first two groups which show lesser volatility. The third group's increase and stable probabilities are almost equal. The decrease probabilities are more than the increase probabilities in the first two groups. The all companies group reveals more stable prices for consumer industry. The reciprocal of the steady state probabilities is the mean

time the share prices stay in one state before moving to another state on an average. Table 8 shows the average days the share prices stay in each state. The first group of shares whose share market prices are less than one RM stays for 3.44 mean days before moving to another state if it starts with an increase. If it starts with stability or decrease, then it stays for 2.52 mean days and 3.2 mean days before moving to another state respectively.

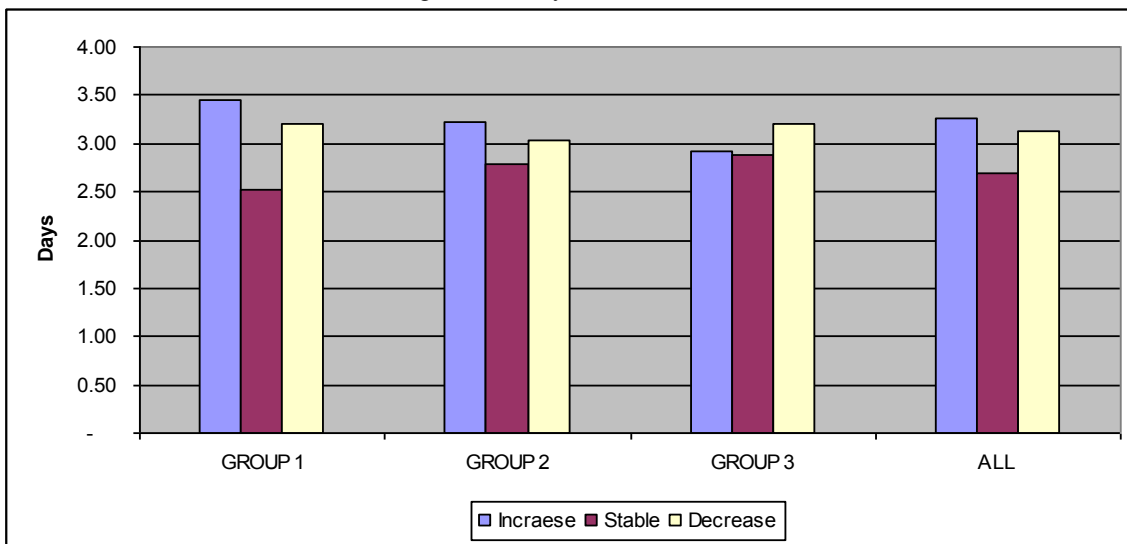
Table 8 Mean Reversion Time (Days)

FROM	GROUP 1			GROUP 2			GROUP 3			ALL		
	I	S	D	I	S	D	I	S	D	I	S	D
I	3.44	2.52	3.20	3.22	2.79	3.02	2.92	2.89	3.21	3.26	2.68	3.13
S	3.44	2.52	3.20	3.22	2.79	3.02	2.92	2.89	3.21	3.26	2.68	3.13
D	3.44	2.52	3.20	3.22	2.79	3.02	2.92	2.89	3.21	3.26	2.68	3.13

Similarly other columns could be interpreted. In the low priced share groups the first column shows more mean days than the third column. But in contrast the third group shows higher mean days of 3.21 in decrease first column's state and the mean days are 2.92. It implies that the third group companies share prices often increase than decrease, but in other two groups the price decreases is more often registered than price increase. The all companies group shows more mean days for price increase 3.26, than price decrease, 3.12 mean days. Yet another information the mean days convey is the rate of turnover. Share market operated for 254 days

in 2009. One can expect on 87 (254/2.92) occasions in 2009 price increase in shares while the chances of price decrease are 79 times only (254/3.21) in the same year. Similarly the group 2 companies whose share prices are between one RM and three RM stays for 3.22 mean days, 2.79 mean days and 3.03 mean days respectively in each state before moving to other state. The shares whose prices are more than three RM stays for 2.92 mean days, 2.89 mean days and 3.21 mean days in each stage. The lower share prices are staying longer in increase stage and in stable stage than the third group share prices.

Figure 2 Steady state stable time



The above graph exhibits the mean time a share stays in a particular state. The stable state takes less time in all groups which implies that the shares do not stay stable for long. They frequently move from one state to another. Similarly the time taken to move from increase is larger in almost all groups except the third group. This shows that these share prices quickly move to another state. The time taken in the

decrease state is high which implies that more often these prices do not change from decrease mode.

VII. CONCLUSION

Markov chain is another powerful tool to analyze and understand the share price behaviour. Transition probabilities and the current state determine the future

prices. The steady state probabilities not only give the long term behaviour of the share prices but also they are useful in estimating the mean reversion time. We applied Markov chain methodology and estimated the transition probabilities on three groups of consumer companies' share prices. The transition probabilities are lower for increase followed by increase state, and decrease followed by decrease state. The results further show robust probabilities for increase followed by decrease state, stable followed by stable state and decrease followed by increase state. These transition probabilities converge in six time steps and attain steady state. In steady state the group 3 (Share prices more than RM3) shows higher stable probabilities for increase rather than decrease. Moreover, the average reversion time is also lesser for this group implying that more chances of price increase rather than price decrease. The higher price shares are more active, highly liquid and enjoy reputation among investors and this is the reason for their higher transition probabilities.

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Appendix: MATLAB code for computing transition probabilities

```

Close all
clear all
clc
load co81
s=[];
for q=1:81
a=data(:,q);
b=diff(a);
x1=0;x2=0;x3=0;x4=0;x5=0;x6=0;x7=0;x8=0;x9=0;
% Dummy Matrix
% take companies one by one
% For finding shocks

```

```

for i=1:252
    p=b(i);
    p1=b(i+1);

    if (p>0)&(p1>0) % Increase followed by an increase
        x1=x1+1; % Number of days

    elseif (p>0)&(p1==0) % Increase followed by no change
        x2=x2+1;
    elseif (p>0)&(p1<0) % Increase followed by decrease
        x3=x3+1;
    elseif (p==0)&(p1>0) % No change followed by an increase
        x4=x4+1;
    elseif (p==0)&(p1==0) % No change followed by no change
        x5=x5+1;
    elseif (p==0)&(p1<0) % No change followed by decrease
        x6=x6+1;
    elseif (p<0)&(p1>0) % Decrease followed by an increase
        x7=x7+1;
    elseif (p<0)&(p1==0) % Decrease followed by no change
        x8=x8+1;
    else % Decrease followed by decrease
        x9=x9+1;
    end

    y1=x1+x2+x3; % Row total
    y2=x4+x5+x6;
    y3=x7+x8+x9;
    %Transition Matrix (days/total days)
    T0=[x1/y1 x2/y1 x3/y1 % Increase followed by I,S,D
        x4/y2 x5/y2 x6/y2 % Stable followed by I,S,D
        x7/y3 x8/y3 x9/y3]; % Decrease followed by I,S,D
    s=[s;T0]; % Store all data in matrix S
end

    trm1=[];trm2=[];trm3=[]; % Dummy Matrix
    for w=1:3:243
        trm1=[trm1;(s(w,:))]; % Take 3 rows at a time
        trm2=[trm2;(s(w+1,:))]; % All increase followed by I,S,D
        trm3=[trm3;(s(w+2,:))]; % All stable followed by I,S,D
        % All decrease followed by I,S,D
    end

    r1=sum(trm1)./81; %All companies row probability
    r2=sum(trm2)./81;
    r3=sum(trm3)./81;
    allcotrm=[r1;r2;r3]; %All companies transition Probability

    TR2=allcotrm^2; % Step 2 transition probabilities
    TR3=allcotrm^3; % Step 3 transition probabilities
    TR4=allcotrm^4; % Step 4 transition probabilities
    TR5=allcotrm^5; % Step 5 transition probabilities
    TR6=allcotrm^6; % Step 6 transition probabilities

    alltime=1./TR6; %Average time between switching states

f34r1=trm1(1:34,:); % First 34 companies price less than 1 RM
m33r1=trm1(35:67,:); % Next 33 companies price between 1&3 RM
l14r1=trm1(68:end,:); % Final 14 companies price more than 3 RM

```

```

f34r2=trm2(1:34,:);
m33r2=trm2(35:67,:);
l14r2=trm2(68:end,:);

f34r3=trm3(1:34,:);
m33r3=trm3(35:67,:);
l14r3=trm3(68:end,:);

af34r1=sum(f34r1)./34;           % Average group row probability
am33r1=sum(m33r1)./33; al14r1=sum(l14r1)./14;

af34r2=sum(f34r2)./34;
am33r2=sum(m33r2)./33;
al14r2=sum(l14r2)./14;

af34r3=sum(f34r3)./34;
am33r3=sum(m33r3)./33;
al14r3=sum(l14r3)./14;

g1=[af34r1;af34r2;af34r3];           % Transition probabilities of group 1
g2=[am33r1;am33r2;am33r3];         % Transition probabilities of group 2
g3=[al14r1;al14r2;al14r3];         % Transition probabilities of group 3

%Group one Transition Probabilities
G1TR2=g1^2;           % Step 2 transition probabilities
G1TR3=g1^3;           % Step 3 transition probabilities
G1TR4=g1^4;           % Step 4 transition probabilities
G1TR5=g1^5;           % Step 5 transition probabilities
G1TR6=g1^6;           % Step 6 transition probabilities

g1time=1./G1TR6;     % Average time between switching states

% Group two Transition Probabilities
G2TR2=g2^2;           % Step 2 transition probabilities
G2TR3=g2^3;           % Step 3 transition probabilities
G2TR4=g2^4;           % Step 4 transition probabilities
G2TR5=g2^5;           % Step 5 transition probabilities
G2TR6=g2^6;           % Step 6 transition probabilities

g2time=1./G2TR6;     % Average time between switching states

% Group three Transition Probabilities
G3TR2=g3^2;           % Step 2 transition probabilities
G3TR3=g3^3;           % Step 3 transition probabilities
G3TR4=g3^4;           % Step 4 transition probabilities
G3TR5=g3^5;           % Step 5 transition probabilities
G3TR6=g3^6;           % Step 6 transition probabilities

g3time=1./G3TR6;     % Average time between switching states

```

Demand for Money in Pakistan: an Ardle Approach

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E4, E41 }

Abstract-The paper estimates the demand for money in Pakistan using Autoregressive Distributed Lag (ARDL) approach to cointegration analysis. The empirical results show that there is a unique cointegrated long-run relationship among M2 monetary aggregate, income, inflation and exchange rate. The income elasticity and inflation coefficients are positive while the exchange rate elasticity is negative. Our results also, after incorporating the CUSUM and CUSUMSQ tests, reveal that the M2 money demand function is stable between 1973 and 2007.

Keywords-Money Demand, ARDL, Stability JEL Classification: E4, E41

I. INTRODUCTION

Empirically, demand for money estimations are used by monetary authorities as a main apparatus in designing policies to influence real and monetary balances of the economy. Since 1980's search for the determinants of monetary aggregates such as real GDP, foreign exchange rates and inflation gained importance in the literature. According to Friedman (1956), money demand function assumes that there are a stationary long-run equilibrium relationship between real money balances, real income, and the opportunity cost of holding real balances. The common understanding from the literature is that most of the studies on the demand for money function and its stability using autoregressive distributed lag (ARDL) approach have been paying attention on the advanced and industrialized countries. Not many studies using ARDL cointegration technique for money demand functions have been reported in Asian countries. In Pakistan, considerable effort has been made in estimating money demand functions, see for instance, Akhtar (1974), Mangla (1979), Khan (1980, 1982), Nisar and Aslam (1983), Ahmed and Khan (1990), Hossain (1994), Khan and Ali (1997), Qayyum (1998, 2005) and Zakir (2006). These studies have estimated money demand functions using different cointegration techniques. Some of these studies such as Ahmed and Khan (1990) and Qayyum (2005) have also examined the stability of their estimated money demand functions. In most of the studies the M2 is found to be stable money demand function. However, most of these studies have ignored the time series properties of the relevant variables and therefore may be prone to spurious regression. Further, not a single study has used the

Autoregressive distributed lag (ARDL) approach to estimate the money demand function in Pakistan. Present study fills this gap to some extent as it estimates the money demand function and checks its stability in Pakistan using ARDL approach. The rest of the paper is organized as follows. Section 2 shows literature review, section 3 presents the theoretical model. Section 4 provides the estimates of the model along with its interpretation. Final section concludes the paper.

II. LITERATURE REVIEW

Qayyum (2005), estimated the dynamic demand for money (M2) function in Pakistan by employing cointegration analysis and error correction mechanism. The parameters of preferred model were found to be super-exogenous for the relevant class of interventions. It was also found that the rate of inflation is significant determinant of money demand in Pakistan. The analysis reveals that the rates of interest, market rate, and bond yield are important for the long-run money demand performance. Ghatak (2001), applied the autoregressive distributed lag (ARDL) approach to cointegration analysis in estimating the virtual exchange rate (VER) for India. The VER would have prevailed if the unconstrained import demand was equal to the constraint imposed due to foreign exchange rationing and the VER is used to approximate the 'price' of rationed foreign exchange reserves. Rao (2009), estimated the demand for money (M1) for 11 Asian countries from 1970 to 2007. This method has advantages of which the most important one is its ability to minimize small sample bias with persistence in the variables. Results show that there is a well defined demand for money for these countries and there are no structural breaks. Renani (2007), estimated the demand for money in Iran using the autoregressive distributed lag (ARDL) approach to cointegration analysis. The empirical results showed that there is a unique cointegrated and stable long-run relationship among M1 monetary aggregate, income, inflation and exchange rate. Study also found that the income elasticity and exchange rate coefficient are positive while the inflation elasticity is negative. After incorporating the CUSUM and CUSUMSQ tests results reveal that the M1 money demand function is stable between 1985 and 2006. Qayyum (1998), concluded that in the long run money demand depends on income, rate of inflation and bond rate. The rate of Inflation and rate of interest on deposits emerged as important determinant of money demand in the short run. Moreover dynamic model remains stable through out the study period. Thornton (1996), used cointegration, error correction and the demand for money in Mexico and estimated of the long-run demand for narrow and broad definitions of the Mexican money supply over the period 1980Q1–1994Q1 suggested that a single cointegrating

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relationship exists for real money balances (M1 and M2), a scale variable (real GDP), and the 91-day treasury bill rate. The result from short-run dynamic equations favor M2 as the monetary aggregate to target and suggest that real GDP rather than real private consumption is a more appropriate scale variable in the demand for money function for Mexico. Hwang (2002), showed that there exists a long-run equilibrium relationship between M2 and its determinants, real income and the long-term interest rate, in Korea by using Johansen and Juselius maximum likelihood cointegration method. However, M1 does not have any meaningful cointegration relationships with its determinants. The long-term interest rate is a better proxy than the short-term rate to measure the opportunity cost of holding money. Based on the results, a broad definition of money is a better measure than a narrow definition of money in considering the long-run economic impacts of changes in monetary policy in Korea.

III. METHODOLOGY

This section models the linkages between money demand and its determinants using regression analysis. Here the hypothesis is that there is long run cointegration relationship between monetary aggregates and its determinants. In order to be consistent with previous studies, we use a conventional money demand function. In what follows we estimated the following model.

$$\ln M_t = \beta_1 + \beta_2 \ln Y_t + \beta_3 \ln INF_t + \beta_4 ER_t + \nu_t$$

where M_t is money demand (M1 or M2), Y_t is real income, INF_t is inflation rate and ER_t is exchange rate.

While ν_t is the stochastic disturbance term such that $\nu_t \sim N(0, \sigma^2)$. From the literature on transaction demand for money the sign of β_2 is expected to be positive. The sign of β_3 could be positive or negative. It is positive because when there is increase in inflation real value of money will decrease so people will need more money in hand to fulfill their needs. The sign of β_3 is negative if people decrease demand for money due to high inflation. Finally, the sign of β_4 may be positive or negative. Arango and Nadiri (1981) argue that the decrease in exchange rate or the depreciation of domestic currency (or appreciation of foreign currency) will increase the value of foreign assets or securities held by the domestic residents. If the residents perceived that there is increase in their wealth after depreciation of domestic currency they will increase their demand for domestic currency. In this case β_4 turns out to be positive. In turn, Bahmani-Oskooee and Pourheydari (1990) argue that when a currency depreciates, there could be expectation for further depreciation. This could instigate public to increase the holdings of foreign currency by drawing down to the domestic holdings. In this case β_4

turns out to be negative. To find long run cointegration among the variables it is necessary to check the stationarity properties of the variables. To hold cointegration all variables should be of the same order of integration. If all variables are not of same order of integration then we have to rely on Autoregressive Distributed Lag (ARDL) approach of Pesaren and Shin (1995), which was further elaborate by Pesaren *et al.* (2001). This method has also the advantage that it does not require unit root pre-testing. This approach is suitable for our money demand model because we have stationary variables like inflation along with non stationary variable like money demand (M1 or M2).¹ The error correction version of the ARDL model of equation 1 is as follows. From equation (2) we can check long run cointegration among the variables of money demand model. In this case the null hypothesis (H_0) is defined as $\alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = 0$

against the alternative hypothesis (H_1) that at least one of α is not equal to zero, by means of F-test. Pesaran *et al.* (2001) have tabulated two sets of appropriate critical values. One set is calculated when all variables are integrated of order one and another set of appropriate critical values when the variables are integrated of order zero. So these two sets of critical values cover all the possible classification of variables either they are integrated of order zero or one or even fractionally integrated. If the calculated value of F-statistics lies above the upper level of the band then the null hypothesis is rejected. It shows that there is cointegration. If the value of F-statistics lies below the lower level of the band then the null hypothesis cannot be rejected, which indicate that there is lack of cointegration. If the value of F-statistics falls within the band the results are inconclusive.

IV. MODEL ESTIMATION

The paper uses annual time series data for the period 1973 to 2007 to check long run cointegration among the variables of money demand model. Following Schwarz criterion lag length 1 is found to be optimal. Thus, we impose 1 lag on each first differenced variable in equation 2. The results of the F-test for cointegration are reported in Table 1. For M1 equation the calculated F-statistics (3.07) is less than upper critical value (4.35) therefore null hypothesis of no cointegration is accepted at 5 per cent level. It indicates the absence of cointegration among the variables of M1 money demand model. In turn, for M2 the calculated F statistics (5.93) is greater than upper critical value (4.35) therefore null hypothesis of no cointegration is rejected at 5 per cent level. It shows existence of long run cointegration among M2, income, inflation rate and exchange rate. Although the results do not show long run cointegration among the

We have applied ADF unit root test to check stationarity of the variables. The results show that some variables are stationary at levels and some are stationary at first differences. The results of ADF test are not reported here to conserve space. However, they are available from authors on request.

variables of M1 money demand function, for comparison the subsequent sections. purpose the results for both M1 and M2 will be provided in

$$\Delta \ln M_t = \beta_1 + \sum_{i=1}^n \beta_{2i} \Delta \ln M_{t-1} + \sum_{i=1}^n \beta_{3i} \Delta \ln Y_{t-1} + \sum_{i=1}^n \beta_{4i} \Delta \ln INF_{t-1} + \sum_{i=1}^n \beta_{5i} \Delta \ln ER_{t-1} + \alpha_1 \ln M_{t-1} + \alpha_2 \ln Y_{t-1} + \alpha_3 \ln INF_{t-1} + \alpha_4 \ln ER_{t-1} + v_t \quad (2)$$

Table 1: F-Statistic for Testing the Existence of Long-run Cointegration: (1971 – 2007)

Specifications	Order of Lag	F-statistics
M1	1	F (3, 24) = 3.074
M2	1	F (3, 24) = 5.931*

Notes: The relevant critical value bounds are given in Table CI (iii) (with an unrestricted intercept and no trend) in Pesaran *et al.* (2001). With four regressors the critical value bounds are 3.23 – 4.35 at the 5 % significance level.

* denotes that F-statistic falls above the 5 % upper bound.

Having established long run cointegration among the variables of M2 money demand function the results of the long-run coefficients of equation 1 are reported in Table 2. According to this table the income elasticity is 1.13 which is highly significant as reflected by a t-statistic of 8.98. The inflation rate elasticity is positive (0.513) and significantly supports our theoretical expectations. The coefficient of exchange rate is negative. It shows that depreciation of domestic currency decreases the demand for domestic currency, thereby supporting the view that domestic

Currency is expected to depreciate further, the argument provided in the previous section. To remove autocorrelation From the model MA (1) process is applied. The value of Durbin Watson (DW) is closed to desired value of 2, which indicates the absence of autocorrelation problem. High values of R square and adjusted R square indicate that the model fits the data well. The table also reports the results for M1 monetary aggregates. The results show that M1 is equally important monetary aggregate as M2 in terms of formulating monetary policy.

Table 2: Long-Run Coefficient Estimates and Diagnostics

	Dependent Variables			
	M2 Aggregates	Monetary	M1 Aggregates	Monetary
Constant	-2.228 (-2.315)*		-5.005 (-4.667)*	
Income	1.131 (8.989)*		1.521 (10.937)*	
Inflation	0.513 (1.684)**		0.610 (1.339)	
Exchange Rate	-0.008 (-0.083)		-0.525 (-4.817)*	
MA(1)	0.982 (57.503)*		0.519 (3.031)*	
R-squared	0.993		0.983	
Adjusted R-squared	0.992		0.981	
Durbin-Watson stat	1.936		1.904	
No. of Observations	35		35	

Note: Values in parentheses denote underlying student-*t* values. The *t* statistics significant at 5 % and 10 % levels of significance are indicated by * and ** respectively.

Since the existence of a stable and predictable relationship between the demand for money and its determinants is considered a necessary condition for the formulation of monetary policy strategies based on intermediate monetary targeting, the stability of the long-run coefficients is checked. As pointed by Laidler (1993) and noted by Bahmani-Oskooee (2001), some of the problems of instability could stem from inadequate modeling of the short-run dynamics characterizing departures from the long run relationship. Hence, it is expedient to incorporate the short run dynamics for constancy of long run parameters. In view of this we apply the CUSUM and CUSUMSQ tests proposed by Brown *et al.* (1975). The CUSUM test is based on the cumulative sum of recursive residuals based on the first set of n observations. It is updated recursively and is plotted against the break points. If the plot of CUSUM statistic stays within 5% significance level², then estimated coefficients are said to be stable. Similar procedure is used to carry out the CUSUMSQ test that is based on the squared recursive residuals. A graphical presentation of these two tests is provided in Figures 1 to 4

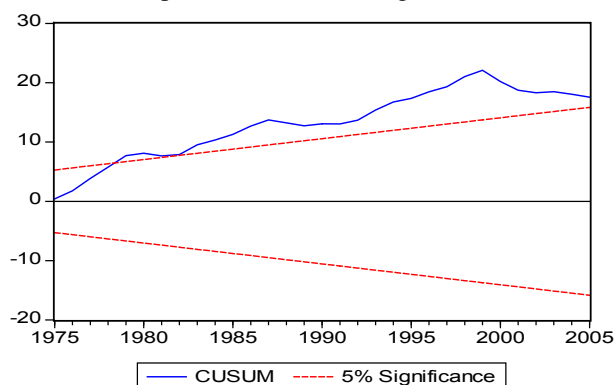


Figure 1: Cumulative Sum of Recursive Residuals (M2)

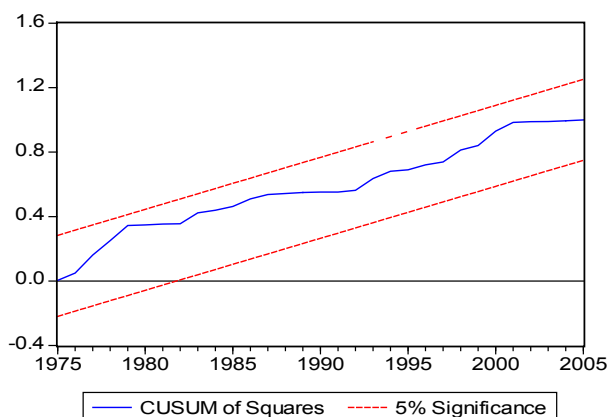


Figure 2: Cumulative Sum of Squares Recursive Residuals (M2)

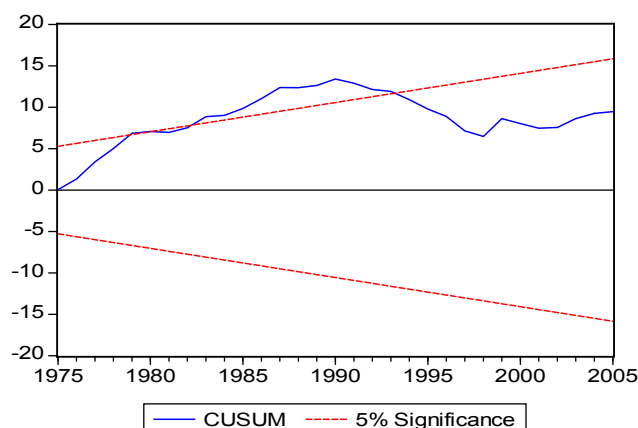


Figure 3: Cumulative Sum of Recursive Residuals (M1)

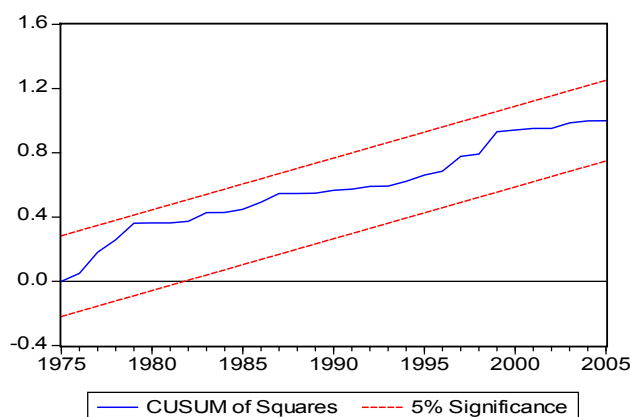


Figure 4: Cumulative Sum of Squares Recursive Residuals (M1)

The plots of CUSUM statistics for both M2 and M1 cross the critical value lines, indicating instability in M2 and M1 money demand functions. However, this instability is less in M1 money demand than M2. This finding could be an indication of the fact that M1 must be the monetary aggregate that central banks should control. However, the plot of CUSUMSQ statistic for both M2 and M1 do not cross the critical value lines, therefore, we are safe to conclude that both M2 and M1 money demand functions are stable.

V. CONCLUSIONS

In this paper money demand function has been estimated in Pakistan using ARDL approach to cointegration analysis using time series data for the period 1973 to 2007. The results show that income and inflation variables are positively associated with money demand while exchange rate negatively affects money demand. The negative effect of exchange rate on money demand supports our theoretical expectation that as domestic currency depreciates the demand for domestic currency declines, thereby supporting

² That is portrayed by two straight lines whose equations are given in Brown *et al.* (1975, Section 2.3).

the view that domestic currency is likely to depreciate further. Following recent trends in cointegration analysis, this paper demonstrates that cointegration does not imply stability. By incorporating CUSUM and CUSUMSQ tests into cointegration analysis, it is revealed that CUSUM statistics for monetary aggregates (for both M2 and M1) cross the critical value lines, indicating instability in money demand functions. However, the plot of CUSUMSQ statistics (for both M2 and M1) do not cross the critical value lines, therefore, we are safe to conclude that (both M2 and M1) money demand functions are stable. Thus, it is also concluded that M1 equally important monetary aggregate in terms of formulating monetary policy and central banks control as does M2 monetary aggregate.

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