ISSN: 2347-2839

International Journal of Applied Management Research

Vol. 1, No. 2, 2013

Department of Management
North- Eastern Hill University, Tura Campus- 794002

International Journal of Applied Management Research
Vol. 1(No.2), August- December, 2013

Published by:
Department of Management, North- Eastern Hill University, Tura Campus (India)

Printed at:
Thomson Press, Tura

ISSN: 2347-2839

International Journal of Applied Management Research

Journal of the Department of Management, NEHU, Tura Campus, Meghalaya (India)

Volume 1, Number 2

CONTENTS PAGE NO.

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December, 2013, Page: 1-9

Strategies for Developing Agripreneurship Among Farming Community in Uttar Pradesh, India

Amarendra Pratap Singh
Associate Professor, Department of Business Management, Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh

Abstract

A farmer to become successful agripreneurs needs to recognize appropriate market opportunities, manage existing resources for taking risk. In general, agripreneurs should be proactive, curious, determined, persistence, visionary, hard working, honest, integrity with strong management and organizational skills. Agripreneurship is greatly influenced mainly by the economic situation, education and culture. The critical analysis of agripreneurs and traditional farmers in selected districts of Uttar Pradesh in India clearly indicates that if the right environment is created and farmers are provided with good infrastructure, technological support, and timely availability of credit it can enhance food production and ensure food security as well as increase in income of the farmers and quality of life. Contrary to common belief, caste, farm size, and age of the farmers are not necessarily major constraints for the success of agripreneurship. Even less educated small farmers of old age can also become an agripreneur provided they are clearly informed about the right type of technologies and knowledge about their use. Hence, technology dissemination system is equally important than technology generation. The farm size **per se** is not a major constraint. At present, information has become another crucial input like land, labour, and capital for enhancing agricultural production and if right type of information and facilities/services are provided timely certainly a few of the farmers will become agripreneurs.

Keywords: *Agripreneurship, Innovation, Extension, New Technology*

Introduction

Entrepreneurship has a long history and has been defined in different ways. The term "entrepreneur" originated in France as early as the 17th and 18th centuries. As back as 19th century the word entrepreneurship was described as the venturesome individuals who stimulated economic progress by finding new and better ways of doing things (Say Baptiste Jean a French Economist). In the 20th century, the concept of entrepreneurship was further refined and described entrepreneurs as innovators who drive change in the economy by serving new markets or creating new ways of doing things. The function of entrepreneurs is to reform or revolutionize the pattern of production in many ways: by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on (Joseph Schumpeter, Professor at Harvard Business School). While both Say and Schumpter emphasize starting new, profit-seeking business ventures but starting a business is not the essence of entrepreneurship. Rather it is the role of entrepreneurs as the catalysts and innovators behind economic progress. Entrepreneurship is not bound by rigid concepts of age nor plagued by homogeneity but they are diverse, found in every culture, class, race, ethnicity, gender, sexual orientation, physical ability and age.

Entrepreneurs are those people who exhibit common traits such as single-mindedness, drive, ambition, creative, problem solving, practical, and goal-oriented. In common parlance, being an entrepreneur is associated with starting a business, but this is a very loose application of a term that has a rich history and a much more significant meaning (Dees, 1998). The notion of entrepreneurship was further extended by emphasizing opportunity(Drucker, 1985). Entrepreneurs are not required to cause change but exploit the opportunities that change creates in technology, consumer preferences, social norms, etc. Starting a business is neither necessary nor sufficient for entrepreneurship. Every new small business is not entrepreneurial or represents entrepreneurship. Later stage, another element of resourcefulness was added to the opportunity-oriented definition that distinguishes "entrepreneurial" management from more common forms of "administrative" management.

In brief, an entrepreneur is an individual who recognizes an opportunity or unmet need and takes the risk to pursue it. He needs to develop these abilities, managing productivity and seeking out new markets. Besides, there are few traits essential for successful entrepreneurs. These traits are: proactiveness, curiousity, determination, persistence, vision, hard working, honesty, integrity, strong drive to achieve, high levels of energy, goal oriented, independent, demanding, self-confident, high self-esteem, disciplined, strong management and organizational skills, internally motivated, tolerance for failure, positive attitude, positive thinking, sees opportunities where others see problems. Evidences indicate that for farmers to be successful as agripreneurs, they need to possess, most, if not all of these characteristics or qualities.

Personal Qualities of Agripreneurs

Personal qualities of an agri-entrepreneur/farmer significantly affect the agribusiness (Brockhaus and Horwitz, 1986; Verhaar and Hoeve, 1999; Elfring, 2000; Nandram and Samson, 2000; de Buck et al, 2000). Self criticism, leadership, market orientation and creativity are important for successful entrepreneurship (Nadram and Samson, 2000). Based on the field experience, twelve personal qualities of farmers were identified as the most important factors that influence agri-business (Cardien de Lauwere et al, 2000).

Market-orientation	Perseverance	Empathy	Leadership
Achievement-orientation	Inspiration	Flexibility	Creativity
Self-criticism	Laziness	Initiative	Passivity

In any country or region, strategies for improving agricultural productivity or income of the farmers, it is necessary to develop an entrepreneurial culture among farmers. This has been rightly indicated by Peter Drucker (1985) that "The essence of economic activity is the commitment of present resources to future expectations, and that means to uncertainty and risk". Hence, there is a need to create an entrepreneurial culture by putting systems in place to support and recognize entrepreneurship as a viable career choice. Entrepreneurship should not be looked as a second class career or just a hobby, but rather a wealth creating mechanism which requires critical thinking, astuteness and quick recognition of opportunities where others see problems.

One important factor that must be remembered is that creating an entrepreneurial culture is a long term goal because substantive results will not be seen immediately. But, the investment for the sustainability of agriculture must focus on to develop and strengthen the political will, social obligation and commitment by all stakeholders. This has been rightly stated by Best (2001) that it has to be focused and riveted on the breeding of local

agripreneurs, who are not just farmers, but are also thinkers, risk takers and business people. To make this approach successful all the aspects such as cultural, social and political situations must be addressed in a holistic way at the regional level. There are some differences in the qualities of adopters of new technologies and agripreneurs as Innovators. Some of the characteristics of these innovators and adopters have been described in Table 1.

Table 1: Characteristics of Adoptors and Innovators (Trend setters)

Adopter	Innovator
Efficient, thorough, adaptable, methodical, organized, precise, reliable, and dependable	Ingenious, original, independent, unconventional
Accepts problem definition	Challenges problem definition
Does things better	Does things differently
Concerned with resolving problems rather than finding them	Discovers problems and avenues for their solutions
Seeks solutions to problems in tried and understood ways	Manipulates problems by questioning existing assumptions
Reduces problems by improvement and greater efficiency, while aiming at continuity and stability	Catalyst to unsettled groups, irreverent of their consensual views
Seems impervious to boredom; able to maintain high accuracy in long spells of detailed work	Capable of routine work (system maintenance) for only short bursts; quick to delegate routine tasks
An authority within established structures	Tends to take control in unstructured situations

Source: *Kirton, M.J. Journal of Applied Psychology, 1980*

Sampling Methodology

This paper aims to address specifically the issue of entrepreneurship among farming community in Uttar Pradesh in India. The present study is based on the farm level data collected from 290 sample households (farmers) representing different farm size class and resource base in two contrasting agroclimatic regions of Uttar Pradesh. In the present study, the net income of a farmer from for all the activities (including crops, livestock, wage and trade, etc.) has been considered as the indicator of a successful entrepreneur/Manager. Higher net income of a farmer indicates the higher level of entrepreneurship. All the sample farmers were divided into two groups namely, (1) Traditional Farmers and (2) Agripreneurs. Traditional farmers consists of 210 farmers, who were still growing traditional crops and practicing old farm practices while Agripreneurs consists of 80 farmers, who adopted new technologies and farm practices. These are the farmers who earn handsome net income from various enterprises and have diversified their cropping system for higher net income. They are practicing many innovative technologies and are trendsetters for other farmers to use new technologies and improved farm practices.

Objective of the Paper

In the present paper, characteristics of these two categories of farmers have been analyzed in detail to examine the difference in their personal profile, resource base, and level of income. An attempt has been made to examine the effect of various factors influencing the net income from all the activities/enterprises separately for both the groups of farmers.

Personal Profile of Agripreneurs

As has been mentioned earlier that personal qualities of the farmers substantially affect the agribusiness, an attempt was made to quantify differences in a few of the personal qualities of both the types of farmers. The results in Table 2 shows that agripreneurs had higher scores for almost all the personal characteristics such as creativity, leadership, perseverance and initiative and a very low score for passive and laziness than traditional

farmers. Farmers with higher scores for passivity are less growth-oriented and more (financially) conservative. In general, agripreneurs were more market-oriented and achievement-oriented. Besides, they were more inspired through exposure visits and ready to take initiative for adoption of new technologies and farm practices. They were also more flexible to accept the changes but creative in thinking.

Table 2: Mean Score of Personal Qualities of Traditional Farmers and Agripreneurs

Personal Characteristics	Agripreneurs	Traditional farmers
Market-oriented	3.4	1.1
Achievement- oriented	3.8	1.3
Self-criticism	2.6	1.5
Creativity	4.2	0.5
Leadership	2.5	0.01
Perseverance	3.6	1.2
Flexibility	3.1	1.3
Empathy	4.0	1.5
Initiative	3.9	0.8
Inspired	3.5	1.5
Passive	-2.7	-0.5
Laziness	-2.9	-0.4

[1] Scores vary from –5 (totally disagree) to +5 (totally agree).

Demographic Profile of the Agripreneurs

Profile of the agripreneurs and traditional farmers clearly indicate that, on average, agripreneurs had relatively larger size of family but less number of earning members compared to traditional farmers. The heads of the family of agripreneurs were relatively more educated than their counterparts. Moreover, both the categories of farmers were not very old and there was no sharp difference in the age of the head of family of agripreneurs and traditional farmers. It was expected that age as a proxy of experience would play an important role in entrepreneurship but it seems that it was not found very important as both the group of farmers had more or less similar age/experience (Table 3).

Table 3
Demographic Profile of Traditional Farmers and Agripreneurs

Particular	Agripreneurs (80 farmers)	Traditional farmers (210 farmers)
Family size (Number)	7.3	6.7
Earning members (Number)	2.4	2.6
Age of the head of family (years)	50	53
Proportion of Illiterate heads of family (%)	30	60
Proportion of educated Head of the family up to primary (%)	55	30
Proportion of head of the family having more than high school of education (%)	15	10

Agricultural Profile of Agripreneurs

Table 4 shows that about half of the traditional farmers were small farmers (operating small holdings of less than 2 ha). While 20% of the agripreneurs were large farmers (operating more than 4 ha of land) compared to 15 percent of the traditional farmers. This indicates that entrepreneurship is not related to size of farm. Even half of the agripreneurs were small farmers and only 20 percent were large farmers. This is contrary to common belief that large farmers have more risk bearing ability compared to small farmers. The total area owned by agripreneurs and traditional farmers was almost same i.e. 3.50 ha

and 3.20 ha respectively but the net cultivated area was quite less in case of traditional farmers as they had leased out more land than agripreneurs. Moreover, agripreneurs cultivated land more intensively than traditional farmers as the cropping intensity of agripreneurs was 260 percent compared to traditional farmers 160 percent. The agripreneurs had access to irrigation in more than 85 percent of the total cropped area compared to traditional farmers (only 50 percent). This indicates that agripreneurs were able to take almost three crops a year while traditional farmers could cultivate their part of their land in both the seasons due to lack of irrigation facilities, inputs, credit, etc.

It was noted that not only the intensity of cropping was higher in case of agripreneurs but they had more diversified cropping and farming system than traditional farmers. The crop diversification[1] and income diversification both were quite high in case of agripreneurs compared to traditional farmers. It was interesting to note that agripreneurs had more diversified source of income as income diversification index was (0.865) compared to traditional farmers (0.362). This was mainly because agripreneurs have more diversified cropping system (crop diversification index being 0.732) compared to traditional farmers, who had low crop diversification index (0.345). In general, agripreneurs had more access to institutional credit compared to traditional farmers. This was mainly due to differences in the repaying capacity of farmers. Since the agripreneurs had higher income, they were able to repay back their loan to get fresh credit from banks. On an average, 75 percent of the agripreneurs had access to bank credit/loan compared to only 40 percent. However, it is also to be noted that most of the traditional farmers were dependent on private money lenders than institutional credit. Moreover, agripreneurs were not having more access to institutional credit but average amount of loan availed by them was also quite high (Rs 38730) compared to traditional farmers (Rs 12910). In general, agripreneurs had, on average, lesser number of milch animals (1.5) than traditional farmers (2.5).

Table 4: Agricultural Profile of Traditional Farmers and Agripreneurs

Particular	Agripreneurs	Traditional farmers
Proportion of small farmers (%)	55	55
Proportion of medium farmers (%)	25	30
Proportion of large farmers (%)	20	15
Total area (ha)	3.50	3.20
Net cultivated area (ha)	3.20	2.60
Gross cropped area (ha)	8.50	4.15
Proportion of gross cropped area irrigated (%)	85	50
Cropping intensity (%)	265	160
Crop diversification index*	0.732	0.345
Income diversification index*	0.865	0.362
Number of milch animals (No.)	1.5	2.5
Proportion of households availing bank loan (%)	75	40
Amount of loan (Rs/household actually availing credit)	38,730	12,910

Cropping Pattern

It is evident from Table 5 that agripreneurs had more diversified cropping system while the traditional farmers concentrated more on cereal based copping system ahs low diversification of cropping system. Moreover, diversified cropping system of agripreneurs was more devoted to high value crops. Agripreneurs devoted only 35.5 percent of their

[1] To measure the diversification[1] in income and crops, an index was developed using Simpson index method, which varies between zero and one. Zero value indicates no diversification as a framer receives all his income from single source while value of one indicates perfect diversification. But often value of index as one is not possible. Higher value of index indicates higher diversification.

cropped area for cereals against 66.5 percent by traditional farmers. However, there was little difference in the area devoted to pulses by both the groups of farmers. But, if we compare the area devoted to other high value crops like medicinal and aromatic plants, sugarcane and horticultural crops like fruits and vegetable, and oilseeds, etc. agripreneurs had substantially devoted more area to these crops compared to traditional farmers (Table 5).

Table 5: Cropping pattern (Proportion of gross cropped area under different crops) of Traditional Farmers and Agripreneurs

(Percentage)

Crops	Proportion of total cropped area (%)	
	Agripreneurs	Traditional Farmers
Cereal	35.5	66.3
Pulses	8.4	10.5
Oilseeds	15.4	6.7
Sugarcane	9.8	3.3
Horticulture	14.2	0.4
Others*	4.5	12.8
Aromatic and medicinal plants	12.2	-
Total	100.0	100.0

* includes coarse cereals and fruits, floriculture, medicinal and aromatic plants, etc.

Adoption of New technologies/Farm Practices

Area devoted to high value crops alone might not be sufficient to enhance income of the farmers unless it is fully supported by technological back up. An attempt was made to examine the adoption of a few important new/improved technologies by both the groups of farmers. It becomes clear from Table 6 that in general, agripreneurs used more high yielding varieties and had used extensively organic manures to supplement the plant nutrient and used balanced fertilizers. They had more soil testing to know the required doses of plant nutrients in the soil and also soil treatment to avoid any soil borne diseases. Besides, they had taken precautionary measure to treat the seeds before using in the field and various bio-control measures. Majority of the agripreneurs had seed treatment and used culture (Rhyzobium, Azotobacter, PSB, etc.) and Bio-control measures such as Neem cakes, Trichoderma, and Trichgramma, etc. They also focused on livestock development and used more green fodder and mineral bricks, etc for milch animals to increase mild yield (Table 6).

Table 6: Adoption of Various New Technologies/Farm Practices by Traditional Farmers and Agripreneurs

New Technology and Farm Practice	Proportion of farmers adopting new technologies/ farm practices (%)	
	Agripreneurs	Traditional farmers
Soil testing and soil treatment	40	15
Seed treatment	20	5
Organic manure (NADEP, Vermi compost, CPP, BGA, CHM, etc.)	30	16
Culture (Rhyzobium, Azotobacter, PSB, etc.)	25	5
Bio-control (Neem cakes/cake, Trichoderma, Trichgramma, Feromen trap, BT, Others)	15	5
Green manuring	20	-
High-yielding/Hybrid variety	60	10
Bee-keeping	10	4
Mineral mixture/bricks	10	5
Cultivation of green fodder	15	4
Total farmers using new technologies/farm practices (%)	70	20

Note: The total percentage might not add up to 100 percent because a few of the farmers in both categories adopt more than one new technologies and farm practices.

Household Income

It was also noticed that agripreneurs not only diversified their cropping system but diversified their income sources also. It is clear from Table 7 that there was sharp difference in the total income of traditional farmers and agripreneurs. On an average, total annual per household net income of an agri-entrepreneur was about 3.2 times more (Rs 5,26,600) than the total annual net income of traditional farmers (Rs 1,66,265). This comes out to Rs 72,140 per capita for agripreneurs and Rs 24,815 for traditional farmers. It is also clear from Table 7 that agripreneurs received more nearly one-fourth (22.9) percent income form growing horticultural crops while traditional farmers got only 12.4 percent. However, the share of cereals, pulses and oilseeds in the total households income was only 18.1 percent in case of agripreneurs compared to 21.6 percent in case of traditional farmers. As against this, agripreneurs received about 17.2 percent income from sugarcane as cash crop while traditional farmers got only 9.4 percent of total income from sugarcane. In case of agripreneurs, contribution of medicinal and aromatic plants was considerably high (16.8 percent) compared to traditional farmers (5.1 percent). However, traditional farmers received higher income from animal husbandry, which contributed about 15.3 percent to their total income while agripreneurs received only 8.6 percent income from livestock.

Similarly, traditional farmers participated in labour market and earned about 27.4 percent of total income from daily wages and salaries while agripreneurs relied less on salaries and received only 5.8 percent of their income from wages and salaries. The contribution of other sources of income such as petty trade, remittances, interest earned and gifts, etc. was also substantial in case of agripreneurs than the traditional farmers. Here, it is to be noted that agripreneurs, who had substantially higher income and were quite progressive farmers in the region they used to finance other farmers for their farming and other activities. This provided them additional income from interest earned on loan given to farmers in the villages. Besides, these agripreneurs had deposited extra income in the bank and since loan was easily available to them they had availed the facility of loan from the bank.

Table 7

Major Sources of Total Income of Traditional Farmers and Agripreneurs

Sources of income	Agripreneurs	Traditional farmers
Horticultural crops	120640	20560
	(22.9)	(12.4)
Cereal and pulses	95310	35940
	(18.1)	(21.6)
Sugarcane	90450	15650
	(17.2)	(9.4)
Medicinal and aromatic plants	88450	8450
	(16.8)	(5.1)
Animal husbandry	45375	25485
	(8.6)	(15.3)
Wages and salary	30540	45620
	(5.8)	(27.4)
Others*	55835	14560
	(10.6)	(8.8)
Total Income/household (Rs)	526600	166265
	(100.0)	(100.0)
Per capita annual net income (Rs)	72140	24815

* includes income from bee-keeping, petty trade, remittances, gifts, etc.
Figures in parentheses are percentage to total income.

Summary and Conclusion

The critical analysis of agripreneurs and traditional farmers in selected districts of Uttar Pradesh clearly indicates that if the right environment is created and farmers are provided adequate infrastructure support, agricultural production to ensure food security can be increased and many farmers can enhance their income and quality of life through adoption of new technologies and improved farm practices. Contrary to common belief, caste, farm size, and age of the farmers are not necessarily major constraints for the promotion of agripreneurship. Even less educated small farmers of old age can also become an agri-entrepreneur provided they are clearly informed about the right type of technologies and knowledge about their use. Hence, technology dissemination system is equally important than technology generation.

As has been observed that new technologies are neutral to scale/farm size but certainly not neutral to resources, even a small farmer operating 2 ha of land having higher access to irrigation facilities and improved farm practices with entrepreneurial ability can earn higher income than a small farmer with same size of holding without other facilities. Hence, the farm size *per se* is not a major constraint. In the present age, information has become another crucial input like land, labour, and capital for agricultural production. However, it does not mean that all the farmers in any region, irrespective of their caste, farm size, age and education will become agripreneurs if right type of information and facilities/services are provided at right time but certainly a few of the farmers will be agripreneurs. This will lead to transfer of new innovations and technologies through farmer-led extension system.

REFERENCES:

Anonymous (2004), Summary of Impact Results of Innovations in Technology Dissemination (ITD component) of National Agricultural Technology Project.

Bosma, N., M. van Praag and G.de Wit. (2000), Determinants of successful Entrepreneurship. Research Report 0002/E. EIM, Zoetermeer

Brockhaus, R.H. and P.S. Horwitz. (1986), The psychology of the entrepreneur (in D.L. Sexton and R.W. Smilor (eds.), The art and science of entrepreneurship, Ballinger publishing company, Cambridge, pp. 25-48.

Buch, A.J. de, I. Van Rijn, N.G. Roling, and G.A.A. Wossink, (2000), Farmers' reasons for changing or not changing to more sustainable practices: an exploratory study of arable farming in the Netherlands. In: A. de Buck, The role of production risks in the conversion to more sustainable arable farming (thesis), Wageningen University, Wageningen.

Drucker, P. (1985), Innovation and Entrepreneurship, Harper and Row, New York. Eenhoorn, H. www.worlconnectors.nl (www.fao.org.spfs)

Elfring,T. (2000), Innovative entrepreneurship Management briefing (in Dutch), Academic Services, Schoonhoven.

IIM Lucknow. (2003), Presentation on Entrepreneurial Ability, Economic Development Institute (Power point presentation), Indian Institute of Management , Lucknow., 2003.

Ketelaar-de Lauwere, C.C., J. Luttik, K.H. de Greef, P.W.G. Groot Koerkamp, J.W.A. Langeveld and G.B.C. Backus. (2000a), Turning point and future of the livestock industry, Wageningen University and Research Centre, Lelystad.

Kirton, M.J. (1980), Journal of Applied Psychology.

Kendall, P. & Marco, P. (2003), The Current State and Future of Caribbean Agriculture, (www.caribank.org)

Nandram, S.S. and K.J. Samson. (2000), Successful entrepreneurship: more a matter of character than of knowledge (in Dutch with English summary). Nyenrode Centre for Entrepreneurship, Breukelen, The Netherlands.

Praag, C.M. van. (1996), Determinants of successful entrepreneurship. Ph.D. thesis, University of Amsterdam, Thesis publishers Amsterdam.

P. de Wolf & H. Schoorlemmer, (2007), Exploring the Significance of Entrepreneurship in Agriculture, 2007 (eds) (www.esofarmers.org)

The E-Entrepreneur - www.ameinfo.com; www.entrepreneurship.ag.iastate.edu/docs

Verhaar, C.H.A. and A. Hoeve. (1999), Mega-enterprises in Dutch agriculture (in Dutch), Stoas Research Wageningen.

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December, 2013, Page: 10-22

Bridging Tourist Needs Gap Through Microenterprise: A Case Study of Cherrapunji Destination of Meghalaya, India

Benjamin F. Lyngdoh
Assistant Professor, Department of Tourism and Hotel Management, North-Eastern Hill University, Shillong, Meghalaya, India
&
Mac Oliver Rynjah
Lecturer, Department of Tourism and Travel Management, Lady Keane College, Shillong, Meghalaya, India

Abstract:

The deficiencies in meeting tourist needs leads to tourist needs gap and one of the means for bridging these gaps effectively is through microenterprise. Accordingly, the present study aims to examine the same by conducting a case study on the most popular tourist destination of Meghalaya, namely Cherrapunji through a focus on three objectives, namely, to scan the services and economic performance of tourism-related enterprise, to analyse the degree of tourist needs gap and to assess the perceived benefits of bridging such gaps through microenterprise. The tourism-related enterprise scanning encompasses nine popular tourism resources covering variables like nature of enterprise, market targeted, service offered, investment and so forth. Tourist needs gap analysis involves tourist interviews of 100 random samples during August-October, 2013 from the nine tourism resources covering variables like information search, experience, amount of money spent, quality of infrastructure, health and sanitary standards and so forth. Statistically, t-test, correlation and regression analysis is applied. The study portrays that retail and restaurant form of enterprise are more attractive prepositions in economic terms, the tourist needs gap are present across all the variables and the perceived benefits clearly indicate the feasibility of retail and restaurant as microenterprises for bridging the tourist needs gaps. Consequently, the policy implications concern a need for transforming the destination into a magnet for enticing tourist to have longer stays and sensitisation and training of stakeholders for tackling all the existing gaps.

Key Words: *Cherrapunji destination, Enterprise, Tourist needs gap, Microenterprise, Perceived benefits*

I. Introduction

The term 'tourist needs' is relative in nature as the type, structure and degree of such needs vary on the basis of the physical and psychological make-up of the tourist and destination visited. For example, the needs of a highly demanding tourist will normally be on the higher end and vice versa. Similarly, a high-end destination will predominantly attract higher end tourist needs and vice versa. Hence, taking note of this relativity and flexibility there cannot be a strict definition of the same. Nonetheless, tourist needs are generally expressed in terms of time, place, form and possession utilities (Pearce, 2008) and may be defined as 'the needs of the tourist in relation to travel and tourism with reference to a destination planned for or being visited'. Hence, tourist needs refers to the requirements of a tourist over the course of tourism activity and is different from expectations and

perception although it may be influenced by such. In recent times, tourists are becoming more independent in their purchasing decisions (World Tourism Organization [WTO], 2012) and have an increased expectation of the destination culminating from their positive perceptions. In reaction to this demand destinations need to analyse, gear-up, embrace and respond. Failure to do so results in gaps in terms of products and services offered - aptly nomenclature as 'tourist needs gap'. These gaps mainly appear because of the under-supply and/or poor service of a certain tourism component(s). These gaps are to be eliminated as the attractiveness of destinations is only useful if it serves to meet the real needs of the market like holiday, business, health, sports and so forth (WTO, 2012).

Globally, the tourism sector is dominated by microenterprises and the self-employed (Oldbell3, 2007). In India, the sector has a strong presence of medium, small and microenterprises (Indian Institute of Tourism and Travel Management [IITTM], 2010). This is understandable as the businesses engaged in tourism mainly involve providing services which can be handled by microenterprises (Tourism and Transport Consult International [TTCI], 2011). In general, microenterprise have been identified as the most viable business structures to fight poverty and kick-start development consistent with the sustainable livelihoods approach to rural poverty reduction (Shen, Hughey & Simmons, 2008) with the tourism sector being no exception (Manyara & Jones, 2007). As such, the mechanisms of sustainable tourism - eliminating poverty initiative of the WTO involves employment of the poor in tourism enterprises, supply for sector activities by the poor, microenterprises managed/owned by the poor and so forth (Koenig, 2010). Concurrently, the focus should be on the tourist segments being served or targeted and their specific needs (Pearce, 2008) with the goal to further expand the supply and quality of services (WTO, 2012).

Currently, tourist are more conscious of responsibility for one's health and enhancement of one's physical and spiritual well-being thereby expanding demand for tourist services (Abicht & Freikamp, 2005a). The growing requirements of an increasingly individualised clientele have generated altered demands thereby making service, customer orientation and professionalism a priority (Abicht & Freikamp, 2005b). However, the degree of awareness of the needs of tourists is frequently lacking and there is sometimes a reluctance to tackle the difficulties involved (Berthold, 2005). To this end, microenterprise has a major role to play in meeting tourist needs and any gaps that may exist. As such, responding to the new needs of tourists leads to the opening of doors to hostels, inexpensive restaurants and low-cost car parking (WTO, 2012) among many other such businesses.

Accordingly, the present study aims to examine bridging tourist needs gap through microenterprise by conducting a case study on the most popular and famous tourist destination of Meghalaya[1], namely Cherrapunji[2] through a focus on three objectives, namely, to scan the services and economic performance of tourism-related enterprise, to analyse the degree of tourist needs gap and to assess the perceived benefits of bridging tourist needs gap through microenterprise. Consequently, in addition to the introduction the study is classified into seven additional sections. Section II portrays the literature on tourism, tourist needs and microenterprise. Section III presents the methodology as applied in the study. Section IV depicts tourism-related enterprise scanning followed by tourist needs gap analysis in section V. Section VI presents the perceived benefits of bridging tourist needs gap through microenterprise followed by observations in section VII and closes with section VIII which pens down the conclusion and policy implications.

II. Tourism, Tourist Needs and Microenterprise

The vast majority of tourism-related enterprise can be classified as small with microenterprise being in the frontline of serving consumers and meeting tourist demands (Coetzer, 2001/2) thereby possessing the scope and opportunity of an overwhelming impact on local livelihoods (Islam & Carlsen, 2010). Globally, microenterprise contributes to

economic growth through the primary and secondary pathways that go beyond job creation. Primary pathways have greater and direct impact on growth and economic dynamism and secondary pathways are the indirect channels through which microenterprises may contribute to overall economic growth and include human capital improvement, financial market development and so forth (United States Agency for International Development [USAID], 2008). Vijay (2008) records the existence of 1.34 crores registered and unregistered micro and small enterprise, providing employment to more than 3.22 crores, covering more than 6000 products, accounting more than 45 per cent of the gross value of output in the manufacturing sector and about 40 per cent of the total exports.

Tourism creates business opportunities for micro entrepreneurs in various tourism-related activities such as accommodations, food outlets, tourist agents, guides, retail, sport facilities and so forth (Othman & Rosli, 2011) as a direct result of tourist needs. Microenterprise not only gain revenue from new contracts or customers but the business advice, scale of demand, access to new markets and enhanced reputation can enable an enterprise to expand further (Overseas Development Institute [ODI], 2006). In general, the tourism-related microenterprise that meet tourist needs are classified into 'specialised' like guide services, small spa and massage facilities, specialized bakery and pastry shops, coffee shops, souvenir trading and crafts shops, travel agencies, small tour operators, small lodges rented, lodges, small hotels, larger restaurants, recreation businesses, bus companies and so forth and 'non-specialised' like taxi drivers, food and beverage producers, trading shops, pharmacies, photocopy shops and so forth (Sterren, 2008).

In addition, tourist needs and microenterprise play an important part in successful destination development and destination competitiveness and the quality of the tourist experience is influenced heavily by the quality of the encounter with such enterprise thereby creating interdependence between tourism and microenterprise (Thomas, 2008). From camping sites to chateaux, from sports bars to restaurants there has been an explosion of entrepreneurial opportunities to match an ever expanding mix of tourist demands (WTO, 2012). Moreover, as jobs in tourism tend to include a relatively high proportion of semi-skilled and female workers there are robust grounds for expecting tourism jobs to target the poor rather than the elite in developing regions (ODI, 2006) like Meghalaya. Destinations should therefore improve their capacity to innovate their tourist products and services in order to cater for different visitor flows while delivering to the different market segments at different times (WTO, 2012) particularly with a proactive role of microenterprise.

Overall, tourism and tourist needs bring about a positive impact on the local economy and entrepreneurial development (Othman & Rosli, 2011). On sustainable practice of microenterprise, the impacts are mainly seen in socio-economic domains of the entrepreneurs (Kreag, 2001) amongst others. The passion to achieve positive outcomes is a strong driver in the birth of microenterprise (Rola-Rubzen et al., 2011). They impact upon livelihood strategies through changes in employment and earnings, education and training, increased pride and self-confidence and so forth (Ashley et al., 2007; Awang, Aziz & Samdin, 2012; Jamieson, Goodwin & Edmunds, 2004; Mshenga & Owuor, 2009). In addition, as local experience of tourism deepens there are often increased opportunities for the development of new locally owned enterprise providing competitive and complementary goods and services (Cleverdon, 2004). However, there is an ever increasing demand for multiskilling in microenterprises for meeting tourist needs (Marhuenda, Strietska-Ilina & Zukersteinova, 2005) with the challenges of funding and gaining market entry ever present (TTCI, 2011). Hence, learning for developing human resource is paramount in order to enhance the competitiveness of tourism-related microenterprise through improving knowledge, skills and competence (Jensen, 2001).

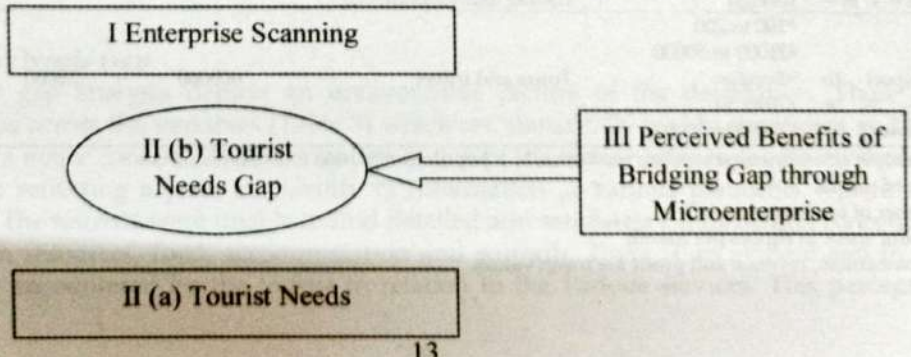
III. Methodology

The study emphasises on tourism-related enterprise scanning (henceforth enterprise scanning) and tourist interviews during August-October, 2013. Enterprise scanning aims at establishing the status of enterprise in the destination and tourist interviews towards establishing tourist needs gap (henceforth gap) in retail, restaurant, accommodation and transport service across independent, customised and packaged tourist (Pearce, 2008). Here, 'independent tourist' refers to one who undertakes tourism independently without availing services from other sources, 'customised tourist' refers to one who undertakes tourism through pre-arranged terms in the like of transport, accommodation and so forth and 'packaged tourist' refers to one who undertakes tourism through an all-inclusive packaged tour. Enterprise scanning encompasses nine popular tourism resources of the destination wherein tourism-related enterprises are found and the random sample size of tourist interviews is 100 selected from the nine tourism resources.

Enterprise scanning covered variables as nature of enterprise, market targeted, service offered (Pearce, 2008) investment, revenue per month and profit per month (Coetzer, 2001/2). Tourist interviews encompassed variables specifically concerning the destination as information search (Pearce, 2008) experience, amount of money spent (Coetzer, 2001/2) quality of infrastructure, health and sanitary standards (Mitchell & Faal, 2008) soft skills (Oldbell3, 2007) knowledgeable advisors, guided tours quality (Abicht & Freikamp, 2005b) promotion and publicity (Ruhanen, Whitford & McLennan, 2013).

The analysis comprises of three phases. They are aimed at providing a logical flow (Figure 1) so as to enable derivation of valid and reliable inferences. Firstly, enterprise scanning concerns mapping the enterprise available in the destination. Here, 'enterprise' covers all type of tourism-related business establishment irrespective of size or nature of activity. However, they predominantly refer to such enterprise which are located in and around the tourism resources and those which predominantly cater to the needs of tourists (like accommodation) irrespective of their location. This presents a scan of the enterprises available in the destination in respect of the service offered and economic performance. Overall, it provides a broad frame of the supply available in the destination as provided by the enterprise. Secondly, the gap is analysed. This is the difference between the services currently offered by the enterprise and tourist needs. They are quantified using an equal interval scale of 'one' to 'five'. Here, 'one' refers to 'bad' and 'five', 'excellent'. The gap is computed as a difference between the scales recorded against the maximum i.e. 'excellent', which means that a scale recorded of 'five' would depict that there is 'no gap' and otherwise. Hence, the gap ranges from 'zero' (no gap) to '(-) four' which depicts an 'enormous gap'. Here, the other gap scales of '(-) one', '(-) two' and '(-) three' depicts 'small gap', 'visible gap' and 'extensive gap' respectively. Lastly, the analysis takes the form of prescription whereby an assessment of the perceived benefits of bridging gap through microenterprise is conducted.

Figure 1: The Logical Flow of Analysis



Statistically, t-test is applied for testing the significance level of the gaps. In addition, correlation and regression analysis is conducted on the tourist interviews for meaningful inferences on relationship of gaps and cause-effect relationship of gaps respectively. In addition, regression analysis of investment, revenue and profit is applied for arriving at a meaningful assessment of the perceived benefits of bridging gap through microenterprise.

IV. Tourism-related Enterprise Scanning

The enterprise scanning (Table 1) includes enterprise forms of retail, restaurant, accommodation and transport on a random sample base covering the major tourism resources highly frequented by the tourists. All the enterprise forms target domestic and foreign tourist except for transport which focuses entirely on foreign. The retail and restaurant have a huge clientele target resulting in a healthy revenue target. They are basically involved in the provision of essentials services mainly in terms of refreshments (retail) and food (restaurant). In economic terms, they involve a micro investment combined with highly attractive revenue of which around 39.45 per cent and 47.62 per cent constitute profit for retail and restaurant respectively. These percentages are important as they imply an estimate that the investment is recoverable in 7.5 months and 14.5 months respectively. The accommodation and transport clientele target is very low subsequently resulting in a low revenue target. The enterprise forms are basically involved in the provision of home stay (accommodation) and travel (transport). As majority of the tourist are day-trippers, accommodation and transport face a set back as these enterprise forms require a huge amount of investment. Hence, the revenue in relation to the investment is low. Thus, even if an attractive 45.88 per cent and 40 per cent of revenue comprise of profits for accommodation and transport respectively it will require a longer time period of 65.4 months and 60 months to recover the investment. Overall, the enterprise scanning shows a positive picture in terms of the service and economic performance (especially in case of retail and restaurant) thereby highlighting a scope for better clientele through up-gradation and innovation in business, particularly in terms of service offered.

Table 1: Tourism-related Enterprise Scanning

Enterprise	Market Targeted	Service Offered	Investment (`)	Revenue (`)	Profit (`)
Retail (n = 14, N = 30)	@Domestic and foreign #2000 to 5000 $20000 to 40000	Water, soft drinks, sweets, chips, snacks, seasonal fruits, souvenirs, indigenous items, and so forth	108214	36571	14429
Restaurant (n = 8, N = 12)	@Domestic and foreign #5000 to 7000 $70000 to 100000	Indigenous food, Chinese; Indian and Italian food, soft drinks, fruits and so forth	633750	91875	43750
Accommodation (n = 4, N = 7)	@Domestic and foreign #100 to 200 $25000 to 50000	Home stay, nature trails, fishing and so forth	1275000	42500	19500
Transport (n = 1, N = unknown)	@Foreign #20 to 30 $20000 to 30000	Tours and travel	600000	25000	10000

n = sample size from nine tourism resources, N = population in nine tourism resources
@type of tourist
#number of tourist per month
$amount spent in rupees per month
#, $, investment, revenue and profit are mean values

V. Tourist Needs Gap Analysis

V.I. Respondent Profile

The respondent profile (Table 2) throws some interesting facts regarding the composition and nature of flow towards the destination. The majority of the tourist make the form of leisure tourism (which is also the major form worldwide) with adventure and educational also being undertaken. The other forms like health, business, visiting friends and relatives (VFR) and religious are not that popular. The major part consists of independent tourists with customised making a sizeable share. However, package tourism plan seems to lack popularity and demand. The gender distribution is mostly even whereas the majority of the tourists are in the younger age of group 18 to 27 years thereby comprising the major part as unmarried. The domestic tourists make the significant share and most are from the towns and cities of north-east region of India. However, a good number of tourists also come from the other parts of the country with foreign tourists making a meaningful presence at 10 per cent. Lastly, the majority of the tourists are day-trippers with the number doing overnight and longer stays being very small. This phenomenon contributes as one of the limitations for the vibrancy and growth of tourism and tourism-related enterprise in the destination. As such, tackling of these problems requires a concerted effort from all the stakeholders by focussing on the basics of tourism growth and development.

Table 2: Respondent Profile

Particular	Classification	Frequency (%)
Tourism Form	Leisure	65
	Adventure	16
	Educational	12
	Health	3
	Business, VFR and religious	4
Tourism Plan	Independent	86
	Customised	13
	Packaged	1
Gender	Male	51
	Female	49
Age (in years)	18 – 27	87
	28 – 37	8
	38 – 77	5
Marital Status	Single	89
	Married	11
Nationality	Domestic	90
	Foreign	10
Domicile City	North-East Region	65
	Rest of India	25
	Foreign	10
Days of Stay	Day-tripper	88
	2 – 4 days	4
	5 – 10 days	5
	11 days and above	3

V.II. Tourist Needs Gap

The gap analysis depicts an unfavourable picture of the destination. There are glaring gaps across the variables (Table 3) which are statistically highly significant and this represents a major concern. The information search of the tourist prior to the travel shows a visible gap reflecting a poor availability of information at various platforms – print and electronic. The tourists were unable to find detailed and satisfactory information concerning the tourism resources, food, accommodation and so forth. There is an evident gap in the experience encountered by the tourist in relation to the various services. This perceptive

exposure is an indication of the persona that the destination is able to imprint on the tourist. The amount of money spent by the tourist also shows an evident gap and reflects the lost opportunity of generating higher spending by the tourist. This presents as a critical issue as lower spending also negates the possible returns on account of 'economic multiplier effect'. The quality of infrastructure depicts an extensive gap thus highlighting the poor quality of physical systems concerning the services. The poor quality represents behavioural disappointments on the part of the tourist thereby not boarding well in terms of repeat travel and marketing.

Similarly, there is an evident gap in health and sanitary standards and soft skills (customer care, language and communication) depicting a below par status. As tourism is a service-oriented sector such gaps deplete the quality and positive impression. Moreover, they discourage friendliness and relationship building thereby negatively impacting long-term business prospects. There is a visible gap and extensive gap with regard to knowledgeable advisors and guided tours quality respectively. This gap is critical as lack of knowledge on the destination and poor guided tours reflects poorly on tourism development. As such, dissatisfied tourist may result their frustration on non-repeat of their travel plans. Lastly, there is a visible gap in promotion and publicity. This directly impedes upon the growth potential of tourism as less awareness would ultimately result in less business. As such, more efforts of promotion and publicity are required by leveraging on print and electronic platforms.

In general, these gaps are roadblocks on tourism development as tourists are becoming more demanding across the range and depth of services. Poor encounters lead to poor stories thereby enormously affecting the size of the potential clientele and business. Hence, these gaps are to be alleviated at earnest through cooperation, coordination and training of all the stakeholders failing which it may adversely affect the brand and marketability of the destination in the long-run.

Table 3: Tourist Needs Gap

Variable	Gap	T – value (two-tailed, df = 99)
Information search (v1)	-1.84**	-19.58
Experience (v2)	-2.56**	-33.26
Amount of money spent (v3)	-2.52**	-30.64
Quality of infrastructure (v4)	-2.71**	-34.08
Health and sanitary standards (v5)	-2.60**	-29.67
Soft skills (v6)	-2.51**	-27.75
Knowledgeable advisors (v7)	-2.30**	-19.55
Guided tours quality (v8)	-2.92**	-25.15
Promotion and publicity (v9)	-2.49**	-22.71

** Significant at 1%

Further, the relationship of gap variables under study depicts a polarisation of coefficients. The correlation matrix portrays a positive relation throughout (Table 4). Moreover, with the exception of a few, the majority of the relationships are statistically significant at one per cent and five per cent. As such, the gaps are far reaching across numbers and degree. The tourist encounters glaring gaps across all tourism-related services of the destination. In particular, this is seen in the relationship between quality of infrastructure and soft skills (0.62**), amount of money spent and soft skills (0.55**), quality of infrastructure and health and sanitary standards (0.54**), experience and amount of money spent (0.54**) and amount of money spent and quality of infrastructure (0.50**).

Table 4: Correlation Matrix of Tourist Needs Gap

	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1	1	0.39**	0.34**	0.26**	0.40**	0.29**	0.08	0.05	0.01
V2	0.39**	1	0.54**	0.42**	0.47**	0.36**	0.23*	0.16	0.19
V3	0.34**	0.54**	1	0.50**	0.38**	0.55**	0.07	0.30**	0.17
V4	0.26**	0.42**	0.50**	1	0.54**	0.62**	0.34**	0.33**	0.45**
V5	0.40**	0.47**	0.38**	0.54**	1	0.44**	0.37**	0.34**	0.36**
V6	0.29**	0.36**	0.55**	0.62**	0.44**	1	0.36**	0.44**	0.39**
V7	0.08	0.23*	0.07	0.34**	0.37**	0.36**	1	0.43**	0.43**
V8	0.05	0.16	0.30**	0.33**	0.34**	0.44**	0.43**	1	0.33**
V9	0.01	0.19	0.17	0.45**	0.36**	0.39**	0.43**	0.33**	1

* Significant at 5%, ** 1%

Furthermore, a deeper comprehension of the dynamics of gap is attempted for generating finer inferences. Regression analysis is applied for explaining the cause-effect relationship between the gaps. As such, the analysis considers experience as a dependent and independent variable and amount of money spent as a dependent variable thereby depicting three models (Table 5). However, all the models are treated with controlled dynamism on account of average R^2 values. In relation to 'b' values, the health and sanitary standards gap statistically explains the experience gap of the tourist. This depicts the importance of maintenance of hygiene standards in influencing the feelings and perception of the tourist. Similarly, the quality of infrastructure gap and soft skills gap statistically explains the amount of money spent gap. As such, there is a need for improving the infrastructure and related physical systems in the destination. In addition, the level of soft skills practiced influences the economics of the tourist. In a nutshell, it proposes a hybrid of good infrastructure and presentable, friendly and impressive soft deliverables for encouraging the tourist to expand their spending. Lastly, experience gap statistically explains the amount of money spent gap. Hence, there is a need for forging efforts for improvement of the destination on all counts as this shall contribute to the good experiences. Providing good experiences at micro (individual and enterprise) level and macro (tourism resources, attractions, systems, operations and so forth) will bear positively on economic growth.

Table 5: Regression Analysis of Tourist Needs Gap

Dependent	Independent	b	T - value	F	R^2
Experience	Quality of infrastructure	0.19	1.52	5.79**	0.27
	Health and sanitary standard	0.30**	3.11		
	Soft skills	0.11	1.07		
	Knowledgeable advisors	0.03	0.43		
	Guided tours quality	-0.04	-0.62		
	Promotion and publicity	-0.05	-0.68		
Amount of money spent	Quality of infrastructure	0.27*	2.26	10.37**	0.40
	Health and sanitary standard	0.13	1.41		
	Soft skills	0.36**	3.61		
	Knowledgeable advisors	-0.16*	-2.35		
	Guided tours quality	0.08	1.24		
	Promotion and publicity	-0.07	-0.90		
Amount of money spent	Experience	0.58**	6.36	40.48**	0.29

* Significant at 5%, ** 1%

VI. Perceived Benefits of Bridging Tourist Needs Gap through Microenterprise

As a platform for assessment of perceived benefits of bridging gap through microenterprise, an understanding of the cause-effect relationship of enterprise scanning on variables investment, revenue and profit is conducted. This provides a valid and reliable base for inference on the perceived benefits. The statistical results derived herein extend credibility to the subsequent analysis. Table 6 highlights that all models from enterprise scanning have a high degree of determination with the exception of two restaurant-related models where R^2 is 0.36 and 0.25 respectively. In the case of retail, the 'b' values of all the models statistically explain the dependent variable. In particular, revenue as a function of investment and profit = f (revenue) stands out. The investment amount is the main component of any enterprise. In this case, it portrays that the amount of investment is positively related and influential to the revenue. Accordingly, revenue also presents a similar effect on profit. In relation to restaurant, the revenue 'b' values statistically explain profit in two models. As such, revenue being the main determinant calls for an emphasis on its steady flow. Effort has to be put for generating higher sales and services. Lastly, the accommodation 'b' values statistically explain the dependent variable. In particular, profit = f (revenue) presents a dynamic cause-effect relationship. The models depict that revenue is the main component of the enterprise and portrays that it positively influences profit. Hence, concerted effort has to be placed on increasing the size of the clientele. Overall, across all the models of enterprise scanning a trend of revenue influencing profits emerged. This highlights the importance of focussing on sales and sales-related services for sustenance and sustainable development of enterprise.

Table 6: Regression Analysis of Tourism-related Enterprise Scanning

Dependent	Independent	b	T - value	F	R^2
		Retail (n = 14)			
Revenue	Investment	0.49**	6.14	37.68**	0.76
Profit	Investment	0.12**	8.03	64.51**	0.84
Profit	Revenue	0.22**	12.84	164.77**	0.93
Profit	Investment	0.04*	2.52	122.18**	0.96
	Revenue	0.16**	5.39		
		Restaurant (n = 8)			
Revenue	Investment	0.06	1.84	3.38	0.36
Profit	Investment	0.03	1.41	2.00	0.25
Profit	Revenue	0.52**	8.77	76.94**	0.93
Profit	Investment	-0.01	-0.87	37.34**	0.94
	Revenue	0.56**	7.40		
		Accommodation (n = 4)			
Revenue	Investment	0.03**	11.50	132.25**	0.99
Profit	Investment	0.02**	10.96	120.03**	0.98
Profit	Revenue	0.53**	69.29	4800.53**	1.00
Profit	Investment	0.00	-0.22	1260.50**	1.00
	Revenue	0.55***	6.35		

* Significant at 5%, ** 1%, *** 10%

Transport model is not derivable as n = 1

In relation to the above, the assessment of the perceived benefits of bridging gap through microenterprise takes proper shape. In addition, this assessment also considers the figures in Table 1. In fact, the enterprises covered under enterprise scanning are also microenterprise in the real sense and by definition under MSME, 2006. However, under perceived benefits an investment of half the amount is considered (Table 7). This is in conformity with the spirit that most entrepreneurs will start small and as this motivates many to take up entrepreneurship. Hence, the distinction between enterprise and

microenterprise for the purpose of assessing perceived benefits. Conversely, the perceived benefits on revenue and profit are reduced by half as against enterprise scanning figures. In addition, an extra 60 per cent is provided as a denominator in case of microenterprise to cover for the disadvantages of economies of scale as compared to bigger enterprises. This is represented by 0.6 and hence the devisor is represented as 2.6 for revenue and profit respectively. It is noted that microenterprise may have better economic performance despite their small size. However, the analysis to this end applied the principle of conservatism thereby it considers the worst case scenario of business operations and economic returns.

Continuing from the basis as stated above, the assessment of perceived benefits predicts a favourable and attractive return on revenue and profit (Table 7). This is more so in case of restaurant. Even retail is highly promising particularly leveraging on its easy start-up and less investment. Hence, this assessment provides a huge opportunity for microenterprise on a two-fold base. Firstly, it is well accepted that the gap should be bridged for the good of the destination. Secondly, microenterprise can play a lead role in bridging this gap. Overall, such an approach presents livelihood opportunities for the entrepreneurs in and around the destination. For a start, the investments can be small and gradually increased overtime. Thus, dealing with the gaps will directly mean the start-up of better microenterprise and their sustained supply of good products and services will provide for bigger market and better economic returns in the long-run.

Table 7: Perceived Benefits of Bridging Tourist Needs Gap through Microenterprise

Enterprise	Investment (`)	Revenue (`)	Profit (`)	Conversion
Retail	54107	14066	5550	Investment / 2
Restaurant	316875	35337	16827	
Accommodation	637500	16346	7500	Revenue, Profit / 2.6
Transport	300000	9615	3846	

Note: read with Table 1

VII. Observations

The study has brought to light a number of observations. Some of these have a bearing on the future framework for tourism development. As per the objectives of the study, the observations are presented in order as enterprise scanning, gap and perceived benefits of bridging gap through microenterprise.

In relation to enterprise scanning, almost all the enterprise target both domestic and foreign tourist. Retail and restaurant have a huge clientele target, require a modest investment and this is combined with attractive revenue and high profit. This is on account of high demand for such services from the tourist as day-long covering of the tourism resources inevitable results in the need for retail-oriented essentials and requirement of food/refreshment. These features also enable recouping of the investment at a faster rate. In case of accommodation and transport, the clientele target is low. The reason is being good connectivity of the destination and easy availability of transport from all the major clientele towns and cities thereby making day-trippers the majority of the tourist. In addition, these enterprise forms require a high amount of investment and as such the revenue generated in relation to the investment is low. Hence, even the attractive profits earned cannot mitigate the long gestation period required for recouping the investment.

In the analysis of gap, the respondents whose profile features mainly constitute of – undertaking of leisure tourism, as independent tourist, are of a young age group, unmarried, predominantly domestic source and mostly travelling as day-tripper presents a rather unfavourable and uneasy picture. There are visible and extensive gaps across the variables which are statistically highly significant. This is more so in case of guided tours quality, quality of infrastructure and health and sanitary standards. The information search gap shows that the destination has not been able to leverage on the advantages of print and

electronic medium. This also highlights the need for more proactive role on the part of tourist/tourism information centres. The experience gap is a direct outcome of unfavourable exposure to the various services as and when they are encountered. To this end, the natural beauty of the destination may not be able to mitigate the concerned gap in the long-run and this presents as a major dilemma. The amount of money spent gap is a result of the limitations of the service range, service depth and service quality. As there is no avenues for high spending, the tourist spend only the basic/necessity amount through essentials like food and refreshments. The quality of infrastructure gap results from a low sensitisation, poor sensitivity and less investment in providing ambience to the enterprise. Similarly, the health and sanitary standards gap depict the shortage or non-availability of public washrooms, rest rooms and so forth as most of the enterprises provide less or no investment to this end. The soft skills gap is a result of a casual approach towards tourism development as seen in lack of sensitization and training on facets of customer care, language, communication, empathy and so forth. The knowledgeable advisors gap and guided tours quality gap highlights the lack of interest in taking-up of such a venture on account of its seasonality and relatively low economic returns. As such, even the available ones expose a certain limitation on the narration and explanation of the tourism resources and attractions. Lastly, the promotion and publicity gap highlights the lack of promotion of the destination in appropriate mediums at national and international level. Although such an exercise requires a significant investment, proper feasibility analysis can be done for identifying the right medium, timeframe and time slots for the same.

In continuance from the above, the gaps depict a positive relationship polarisation of coefficients with most of the relationships being statistically significant. This portrays that the gaps are glaring across all the variables and is more so in case of quality of infrastructure and soft skills, amount of money spent and soft skills and so forth. Furthermore, the cause-effect relationship show that health and sanitary standards gap explain the experience gap, quality of infrastructure gap and soft skills gap explicate the amount of money spent gap and lastly, experience gap influences the amount of money spent gap.

In relation to perceived benefits, the assessment predicts an encouraging and attractive return on revenue and profit on the basis of a modest investment. This is more prominent in the case of retail and restaurant microenterprise and largely due to a large tourist clientele. On the contrary, the economic returns of accommodation and transport are not as attractive as they entail a higher amount of investment accompanied with a far smaller tourist clientele.

VIII. Conclusion and Policy Implications

The study depicts a mixed picture of tourism in the destination in relation to gap and microenterprise. The enterprises are mainly involved in the provision of essential services with retail and restaurant being more attractive economic prepositions. Accommodation and transport suffer from a lack of demand. The gaps are visible and extensive gaps across the variables thereby adversely affecting the image and marketability of the destination. The perceived benefits clearly indicate the feasibility of retail and restaurant as microenterprises that will be best fit for bridging the gaps. Hence, bridging of tourist needs gap through microenterprise is a possible and economically practical preposition for Cherrapunji destination. Moreover, adoption of a holistic approach through involvement of all the stakeholders across micro and macro environment with a focus on 'tourism attractiveness' (for detailed framework; see Lyngdoh, 2013) will yield even better outcomes for tourism development of the destination and Meghalaya as a whole.

Although the study attempted to analyse gap and bridging it through microenterprise by adopting a comprehensive methodology, it still presents scope for further improvement. A wider study covering the entire state and north-east region of India

through more variables over a longer period and depth will yield more extensive and meaningful results. As such, it will contribute better towards tapping the potential of microenterprise in tourism development. Nonetheless, the present study has evolved as a basic framework for further research or related studies in future.

The policy implications derived from the study show a need for detailed and serious initiatives on the part of the government, non-government organisations, local authorities and so forth. At the outset, there is a need for transforming the destination into a magnet for enticing tourist to have longer stays. To this end, the idea of special tourist zone (Islam & Carlsen, 2010) may be the way forward. This will help in the increased vibrancy in accommodation and transport. Secondly, the gaps are to be alleviated through concerted efforts at all levels of governance. Sensitisation and training can be used as an intervention for tackling the existing gaps. Lastly, more professional microenterprise is to be encouraged which are equipped with all the necessary service qualities as demanded in the market. Equally, the stated policy measures calls for a sustained investment over a period of time. Hence, proper feasibility analysis and blueprint of the same before execution is a must.

IX. Notes

[1]Meghalaya is a hill state in the north-east region of India bounded in the south-west by Bangladesh. Its total area is 22429 sq. kilometers with a population of over 29.6 lakh as on 2011 (23.2 lakh in 2001) (www.censusindia.gov.in) and mostly dependent on agriculture. The population grew at 27.82 per cent over the last decade (30.65 per cent in 1991-2001) and features a sex ratio of 986 as compared to 972 in 2001. Moreover, as on 2011, 75.48 per cent (62.56 per cent in 2001) of the total population [77.17 per cent male (65.43 per cent in 2001), 73.78 per cent female (59.61 per cent in 2001)] is literate (www.censusindia.gov.in). Meghalaya covers a number of attractive tourism resources ranging from streams and rivers, hillocks and mountains to cultures and indigenous festivals. These are supplemented by a pleasant climate through most parts of the year. In particular, the tourism resources of Cherrapunji destination are a class apart. They are the main tourism resources of the state and form a spectacle that caps a lasting experience.

[2]Cherrapunji (locally known as *Sohra*) is located in east khasi hills district of Meghalaya at around 50 kilometers south of the capital city, Shillong. Having held the record of 'wettest place on earth' on numerous occasions, its name is familiar to most of the tourist. As a tourism destination, it is one of the most popular and frequently visited destinations in the entire north-east region of India. In Meghalaya alone, it is the number one tourist destination based upon the tourism resources available and tourist visits. It is blessed with a mesmerising natural setting clad with waterfalls, rivers, hills, mountains, mighty cliffs and so forth. It also poses as a heritage destination highlighting the rich and diverse tradition and culture of the local people added up with numerous indigenous cuisines. Cherrapunji destination is so gifted in natural beauty that it earned the tag of 'paradise on earth' from most of the respondents interviewed.

REFERENCES:

Abicht, L. & Freikamp, H. (2005a). Tourism in Germany: Trends, Facts and Figures. In O. Strietska-Ilina and M. Tessaring (eds), Trends and Skill Needs in Tourism, Luxembourg: Office for Official Publications of the European Communities, 12-20.

Abicht, L. & Freikamp, H. (2005b). Trend Qualifications in German Tourism. In O. Strietska-Ilina and M. Tessaring (eds), Trends and Skill Needs in Tourism, Luxembourg: Office for Official Publications of the European Communities, 55-63.

Ashley, C., Brine, P.D., Lehr, A. & Wilde, H. (2007). *The Role of the Tourism Sector in Expanding Economic Opportunity*. Kennedy School of Government: Harvard University.

Awang, K.W., Aziz, Y.A. & Samdin, Z. (2012). The Growth of Small Hotel Enterprises: The Roles of the State. *International Proceedings of Economics Development and Research, 38*, 145-149.

Berthold, V. (2005). Barrier-free Tourism for All: The Need for Know-how. In O. Strietska-Ilina and M. Tessaring (eds), Trends and Skill Needs in Tourism, Luxembourg: Office for Official Publications of the European Communities, 74-78.

Cleverdon, R. (2004). Promoting Intra-Commonwealth Tourism. Background Paper, Commonwealth Tourism Ministers Meeting, Commonwealth Secretariat, London, UK.

Coetzer, J. (2001/2). *Micro Enterprises: To Evaluate and Understand Tourism and Micro-sized Enterprises in a Perpetually Changing Environment*. Dorset (UK): Bournemouth University.

Indian Institute of Tourism and Travel Management. (2010). *Analyzing the Factors Responsible for Slow-Down in Tourist Arrivals in India.* New Delhi: Ministry of Tourism.

Islam, F. & Carlsen, J. (2010). Rural Tourism and Poverty in Bangladesh: Unlocking Opportunities for the Poor. Working Paper, Bangladesh.

Jamieson, W., Goodwin, H. & Edmunds, C. (2004). *Contribution of Tourism to Poverty Alleviation: Pro-poor Tourism and the Challenge of Measuring Impacts.* Transport and Tourism Division, UN ESCAP.

Jensen, J.F. (2001). *Tourism and Employment: Improving Training in order to Upgrade Skills in the Tourism Industry.* Brussels: European Commission.

Koenig, K.K. (2010). *Sustainable Tourism in the Context of Poverty Alleviation and Social Business.* Paris: HEC Paris.

Kreag, G. (2001). *The Impacts of Tourism.* Minnesota Sea Grant: University of Minnesota.

Lyngdoh, B.F. (2013). An Assessment of Tourism Attractiveness of Meghalaya. Working Paper. Presented at National Seminar on Entrepreneurship and Inclusive Growth, Department of Commerce, NEHU, Shillong, 21-22 March, 2013.

Manyara, G. & Jones, E. (2007). Community-based Tourism Enterprises Development in Kenya: An Exploration of Their Potential as Avenues of Poverty Reduction. *Journal of Sustainable Tourism, 15*(6), 628-644.

Marhuenda, F., Strietska-Ilina, O. & Zukersteinova, A. (2005). Factors Shaping Occupational Identities in the Tourism Sector: Research in Spain, The Czech Republic and Greece. In O. Strietska-Ilina and M. Tessaring (eds), Trends and Skill Needs in Tourism, Luxembourg: Office for Official Publications of the European Communities, 21-30.

Mitchell, J. & Faal, J. (2008). The Gambian Tourist Value Chain and Prospects for Pro-Poor Tourism. Working Paper 289, Overseas Development Institute, London, UK.

Mshenga, P.M. & Owuor, G. (2009). Opportunities for Micro and Small Scale Businesses in the Tourism Sector: The Case of the Kenya Coast. *KCA Journal of Business Management, 2*(2), 52-68.

Oldbell3. (2007). *Research into the Skill Needs and Requirements of the Hospitality, Leisure, Travel and Tourism Sectors.* Report to Department for Children, Education, Lifelong Learning and Skills, Welsh Assembly Government, Wales, UK.

Othman, P. & Rosli, M.M. (2011). The Impact of Tourism on Small Business Performance: Empirical Evidence from Malaysian Islands. *International Journal of Business and Social Science, 2*(1), 11-21.

Overseas Development Institute. (2006). *Briefing Paper: Can Tourism Help Reduce Poverty in Africa?* London: ODI.

Pearce, D.G. (2008). A Needs-Functions Model of Tourism Distribution. *Annals of Tourism Research, 35*(1), 148-168.

Rola-Rubzen, M.F., Gibbs, J., Gabunada, F., Burritt, R., Altangerel, D., Fung, L., Rubzen, B. & Carter, A. (2011). *Growing Businesses in the Desert: Case Studies of Australian Desert Micro, Small and Medium Enterprises.* Alice Springs (Australia): Ninti One Ltd.

Ruhanen, L., Whitford, M. & McLennan, C. (2013). *Demand and Supply Issues in Indigenous Tourism: A Gap Analysis.* Indigenous Business Australia and Department of Resources, Energy and Tourism, Indigenous Tourism Working Group, Australia.

Shen, F., Hughey, K.F.D. & Simmons, D.G. (2008). Connecting the Sustainable Livelihood Approach and Tourism: A Review of the Literature. *Journal of Hospitality and Tourism Management, 15,* 19-31.

Sterren, J. (2008). Financial Markets, Microfinance and Tourism in Developing Countries. *NHTV Breda University of Applied Sciences,* 35-44.

Thomas, R. (2008). Fostering SMEs and Entrepreneurship Development in Support of Alternative Tourism in Bulgaria. Working Paper, 17-28.

Tourism and Transport Consult International. (2011). *New Directions for Tourism in the West.* Dublin, Ireland.

United States Agency for International Development. (2008). *The Role of Micro, Small and Medium Enterprises in Economic Growth: A Cross-country Regression Analysis.* Washington DC: USAID.

Vijay, A. (2008). *Report on Micro and Small Enterprises.* New Delhi: Ministry of MSME.

World Tourism Organization. (2012). *Global Report on Aviation: Responding to the Needs of New Tourism Markets and Destinations.* Madrid: WTO.

www.censusindia.gov.in/2011-prov-results/prov_data_products_meghalaya.html.

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December, 2013, Page: 23-31

The Global Confluence of Food Retailing Systems: Process and Determinants

Maya Kant Awasthi
Professor, Indian Institute of Management, Lucknow -226013, India

Abstract:

The technological advances such as microcomputers, uniform product code system, digital liquid crystal price tags, sale retail scanners, and electronic funds transfer at retail and between retailers and manufacturers has increased the scope of improving quality and cost effectiveness by adopting these technologies. As more and more companies in different countries adopt these common food business management techniques, food management systems in these countries have started converging on a more homogeneous food management system with comparable structural and design features, enabling food retailing companies to develop synergies in their food retailing business spread across countries. An essential component of the modern food chain management system rotates around finding solutions of issues such as quality management, inventory management, logistic management, scheduling and shelf space management. Tools and techniques used for making decisions related to these areas are borrowed from different functional areas of managerial science such as human resources, finance, and marketing or decision science areas such as operations research, statistics and mathematics. To study the convergence process, an online SQL-based data capturing format was developed and experts working in food industry were requested to participate in the study by filling out the questionnaire. In total, 385 responses were received from August 1, 2010 to November 1, 2011. Information thus obtained was processed and analysed, and appropriate inferences were drawn.

Keywords: *Global, Food Management, Retailing Systems*

Introduction:

The growth of organized food retailing in modern marketing formats is relatively new in the developing economies such as Thailand, Malaysia China and India. In these countries, growth of organized food retailing has been very fast in last two decades and was propelled by both multinational and domestic retailers. As a natural consequence of this, food retailing environment in developing economies is changing very fast which is influencing functioning of food marketing and trade itself(Reardon et al., 2003; Currah and Wrigley, 2004; Wrigley et al., 2005; Minot and Roy, 2007). The present trend of declining share of local food retailers in emerging economies had been observed in north America and Western Europe markets two decades back (Ducatel & Blomley, 1990). Only differentiating point is that in Asian economies, wet markets have not been driven out by the growth of organized retail market chains. (Goldman et al. 1999, 2002) . Impact largely remained restricted to dependency of consumer on traditional traders. Reardon et al. (2007) and Dries et al. (2004) in their studies found that in emerging economies investments in food retailing systems by large scale food retailers is reducing dependency on traditional traders of food commodities.

Food retail studies suggest that in of Europe and North America during immediate post-war period, local retail stores were dominant players and dominated food sales (Ducatel & Blomley, 1990). However, over the period of time, these local stores lost their prominence and became largely peripheral players in terms of market share (IGD, 2009). Thus growth pattern of modern organized food retail systems can be regarded as internationally similar only the rate and timing of structural change varies geographically primarily on account of uneven economic development across the countries (Reardon et al., 2003). In the transformation from traditional to modern retail structures, Asia is thus a late comer, compared to North America and Western Europe, but not unique.

Factors influencing consumer choice in favour of modern food retail market also differ significantly in different countries. For example in studies for USA/Europe by Lindquist (1974), Davies and Brooks (1989) and Ness et al. (2002) observed that factors such as cleanliness and food safety do not appear as attributes influencing choice of people in favour of modern food retail market but these factors emerged as critical factors, contributing to the declining use of wet markets in Asia (Ho, 2005).

Rise of major organized food retail players in some Asian countries such as Thailand radically restructured their supply chains in the late 1990s onwards. Large investment in new distribution networks by these large organized retailers created economies of scale advantage to these companies (Dries et al., 2004). These new distribution and procurement centers allow supermarket chains to bypass wholesale markets and obtain better terms from suppliers. International procurement is particularly useful for yielding cost advantages on private label goods. These factors emerged primary value levers Brown et al. (2005) and Levy et al. (2005

In some cases a general reluctance of fresh producers to deal directly with supermarket chains has been observed (Goldman et al. 1999). However, string of mergers and acquisitions in the late 1990s gave supermarkets increased order size, and consequently privileged access to primary agriculture markets. The major supermarket chains in Thailand now incorporate greater prominence given to fresh produce than what is typical in North America (Posri et al., 2007).

The importance of food safety is becoming very critical in Asian markets (Posri et al., 2007; Wang, Mao, & Gale, 2008). In these markets terms such as customer satisfaction and product/service quality are becoming too important to ignore (Allen 2004). Empirical studies conducted on organized food retailing reveals that the frequency of supermarket visits is positively related to the importance given by the consumers to factors such as good marketing ambience, convenient location, assortment and special offers. This has influenced the development of smaller, neighborhood stores alongside "big box" outlets as they significantly improve access to supermarkets and overcome difficulties associated with a lack of private transport (Figuie´ & Moustier, 2009; Mergenthaler et al., 2009).

The growth of organized food retailing in modern marketing formats have important impact on food marketing and trade in different countries (Reardon et al., 2003; Currah and Wrigley, 2004; Wrigley et al., 2005; Minot and Roy, 2007). Modern food retailing highlighted importance of factors such as convenience, quality, product diversity and lower prices arising from efficiency gains associated with the supply chain investments made by the modern retailers (Minten and Reardon, 2008). Studies by Landes and Burfisher, 2009 revealed that efficient food retailing may lead to indirect gains in output and consumption. In south Asian economies such as in India, organised food retailing is constrained by the underdevelopment of the supply chain, lack of infrastructure, Govt. concern with increasing food prices etc. (NABARD 2011). It is estimated that share of organised food retailing in India is about 1.44% of the size of total food retail market. Value of total food retail market was estimated at Rs. 154 billion for 2008-09. Thus, the size of organised food retailing is very small compared to the size of food retailing. However, it is growing at the rate of nearly

150% . Factors such as higher disposable income, growing proportion of youth in overall population, gradual increase in the share of population living in urban areas and increasing proportion of enrollment of women employees into the job market are factors contributing in growth of organized food retailing in India (NABARD 2011). Same is true for East Asia where small scale food retailers and wet markets are dominant players and organized supermarkets and hypermarkets have a secondary role (Goldman, Krider, & Ramaswami, 1999; Goldman, Ramaswami, & Krider, 2002; Ho, 2005).

The growth of organized food retail market has important implications for socio economic development as it affect welfare of local farmers (Huang, Zhi, Huang, Jia, & Rozelle, 2009; Neven, Odera, Reardon, & Wang, 2009; Reardon, Barrett, Berdegue, & Swinnen, 2009). Studies by Minten, Randrianarison, & Swinnen, (2009) indicated that though in some cases, the spread of organized food retail chains diminishes the market opportunities for small and marginal farmers but in majority of the cases it also stimulated improvements in adoption of more efficient technology and improvement in productivity and employment (Goldman, 1974). Emergence of organized food retailing may also lead to reduced opportunities for domestic entrpreneurs and those displaced may not easily gain employment with organized retail organisations (Reardon & Gulati, 2008).

Research on organized food retailing thus indicate that all over the world food and agribusiness chain management systems are showing signs of global convergence. This convergence is in terms of adoption of types of technology, supply chain, quality, marketing and retail management systems. Recent technological advances such as microcomputers, uniform product code system, digital liquid crystal price tags, sale retail scanners, and electronic funds transfer at retail and between retailers and manufacturers has increased the scope of improving quality and cost effectiveness in food retailing. As more and more companies in different countries adopt these common food business management techniques, food management systems in these countries have started converging on a more homogeneous global food management system with comparable structural and design features, enabling food retailing companies to develop synergies in their food retailing business spread across countries. An essential component of the modern food chain management system rotates around finding solutions of issues such as quality management, inventory management, logistic management, scheduling and shelf space management. Tools and techniques used for making decisions are borrowed from different functional areas of managerial science such as human resources, finance, and marketing or decision science areas such as operations research, statistics and mathematics. In majority of the cases use of common problems solving techniques initiate the process of global convergence at the system management level.

However, experts differ on magnitude of food retail convergence process. On one side in the body of literature, we find studies such as Goldman et al. (1999, 2002) suggesting that food retailing differ significantly between Asia and Western markets because of structural and cultural differences, researchers on the other side argue that emerging economies are going through process of the globalization of food retailing, characterized by the growing dominance of grocery retail chains, which marginalize traditional formats. (Dries et al., 2004; Reardon et al., 2003). This debate calls for further, research. The present paper is an attempt in this direction.

Present study therefore attempt, an analysis of perceptions of functionaries of food chain about convergence of food retail processes in developing economies. Study also identifies factors influencing food retailing processes in developing countries. Magnitude of perceptional divergence on convergence process within the food chain and impact of organized food retailing on the farming community, including small/marginal farmers has also been studied in the present study.

Research Methodology used in the study:

As it is difficult to find an accepted definition of "modern retail," in literature (Thomas Reardon, Bart Minten, 2011), we have defined organized food retail as marketing space with market features such as use of "self-service", organized IT enabled procurement, inventory and retail system.

Sampling Design:

To study the convergence process, an online SQL-based data capturing format was developed and uploaded on the website (http://www.mkawasthi.info/FRC.php). Experts working in food industry and have significant experience (10 years or more) in food business were then approached through emails to participate in the study by filling out the online questionnaire. In total, 385 responses were received during study period i.e., during 01/08/2012 - 01/11/2012. Information thus obtained was processed and analysed, and appropriate inferences were drawn.

Analytical Framework:

For general analysis of perceptions of different functionaries in food chain simple ratio analysis was performed.

Discriminant Analysis

In order to examine perceptional divergence across food chain functionaries discriminant analysis technique was used. The discriminant method seeks to obtain a set of coefficient (Li) such that squared difference between the mean score of one group and the mean score of other group is as large as possible in relation to the variation of discriminant score (Z) within the groups. With the discriminant function, it is possible to measure the net effect of a variable by holding the other variable constant and relative importance of variables in regard to their power of discrimination between the two groups of the data. The general form of discriminant function applied on the combined set of data from the sampled population is given below:

$$Z = \sum_{i=1}^{i} + L_i * X_i \quad i=1$$

Where,

Z = Total discriminant score

L_i = Discriminant coefficient associated with variable Xi

X_i = ith independent variable which may discriminate the population in two distinct group (i = 1,2,.....k)

The Mahalnobis D^2 statistics was used to measure the distance between the two groups . D^2 statistics was then transformed into 'F' statistics, which was then used to see if the two groups were different from each other. The percentage contribution of each individual characteristic (X_i) in the total distance measured (D^2 value) between the two groups was computed as follows:

The difference between the two groups in respect of each variable X_1, X_2, ... X_k and called d_1, d_2, ... d_k respectively were obtained by unidimensional substractions of mean score of respondents from retailing and non retailing areas of food retail chain. Coefficients of discriminant function were then multiplied by the difference of the means of the respective variables. The values so obtained in respect of different variables were expressed as percentage of D^2 value (total distance measured between the two groups).

In the discriminant function analysis finally only those variables were retained whose percentage contribution in D^2 was found to be positive and more than or equal to one per cent. This was done to screen out those variables, which had very low discriminating power.

At the preliminary stage, several variables with alternative specifications of some of them were programmed in search of representative variables.

Validation of Analysis:

Findings of the study were presented in "Second International Food Studies Conference 2012 at The University of Illinois, Chaimpaign Urbama, USA, 4-5 October 2012. Suggestions received in the conference have been incorporated in the final analysis.

Sample Profile:

Profile analysis of respondents reveals that about 54 percent respondents were involved directly in retailing or have the significance experience in organized food retailing. People directly involved in HR function of food retailing are next prominent group with about 19 percent of total sample. Proportion of logistics and academician in sample is about 7 and 6 percent respectively. All of respondents have experience of more than 10 years (Table) 1.

Table 1: Profile of sample:

Sl. No.	Area of Expertise	Sample Size			
		USA	Asia	Europe	Total
1.	Marketing	57	119	38	214
2.	Operations	9	26	14	49
3.	Logistics	13	6	8	27
4.	HR	28	32	12	72
5.	Acadimics	9	10	5	24
	Total	116	193	77	386

Impact of Location:

Huge majority (86 percent) of respondents strongly feel that convergence is taking place in food retailing. Respondents from Asia have more strong feeling about convergence process than their USA or European counterparts (Table 2).

Table 2 : Location of work and perception about Convergence Process:

Sr No.	Location of the Expert	Strongly feel Convergence is taking place in food retailing (In percentage)
1.	USA	78
2.	Asia	92
3.	Europe	83
	Overall	86

Area of expertise and perception about Convergence Process

Study revealed that across the regions, academicians and marketing workforce is more positively inclined about convergence process. It is very interesting to observe that academicians and marketing professionals are at the same perceptional footing on account of convergence of food retailing (Table 3).

Table 3 : Area of expertise and perception about Convergence Process:

Sr No.	Area of Expert	Strongly feel Convergence in food retailing is taking place (In percentage)			
		USA	Asia	Europe	Overall
1.	Marketing	89	93	86	90.69
2.	Operations	77	83	79	80.76
3.	Logistics	79	81	84	80.93
4.	HR	73	87	82	80.72
5.	Acadimics	93	95	89	93.00
	Overall	78	92	83	86.00

Criticality of factors in convergence process:

Respondents were asked to identify most critical factor, which the feel are responsible for confluence of food retail management across the countries. Majority of respondents identified, procurement management system, billing system, inventory management system, product display and retailing ambience as most critical factors which are driving food retailing confluence in developing economies. Promotional methods have more localized strategies (Table 4).

Table 4 : Criticality of factors in convergence process:

Sr No.	Factor	Criticality of factor (Percentage of respondents)		
		Most critical	Critical	Not critical
1.	Procurement Management System	53	34	13
2.	Billing System Management	68	29	3
3.	Inventory Management	62	33	5
4.	Promotional Systems and Strategies	38	4	58
5.	Product display	76	21	3
6.	Retailing Environment management	74	19	7

Factors influencing convergence process:

Response analysis suggest that factors such as rising consumer exposure and expectation, cross country operation of food companies, regulatory compulsions, cost effectiveness, competition , low retail innovations, fgrowth of organized retail, easy availability of retail technology are important factors which are pushing food retailing process toward homogeneity (Table 5).

Table: 5 Factors influencing convergence process:

Sr No.	Factor	Criticality of factor		
		Most critical	Critical	Not critical
1.	Rising Consumer exposure	33	58	9
2.	Consumer Expectation	49	44	7
3.	Cross Country Operation of food companies	58	19	23
4.	Regulatory Compulsions	37	25	38
5.	Cost effectiveness	34	35	31
6.	Competition	26	45	29
7.	Low retail innovations	46	40	14
8.	Fast growth of organized retail	45	36	19
9.	Easy availability of retail technology	31	46	23

Probable Impact of convergence process:

Study found that those who are working in food chain have more strong feeling that the organized food retailing will lead to uniform business environment, standardization of consumer expectation, food safety, cost effectiveness and better information flow in retail chain which broadly confirm direction of impact revealed by the earlier work of researchers in this sector.

Table: 7 -Probable Impact of convergence process:

Sr No.	Factor	Impact			
		Very strong	Strong	Moderate impact	No impact
1.	Uniform business environment	38	22	31	9
2.	Standardization of consumer expectation	26	38	30	6
3.	Food safety	19	48	33	0
4.	Cost effectiveness	37	15	36	12
5.	Better information flow in retail chain	12	24	41	23

Perception Divergence:

Discriminant analysis technique has been used to assess overall divergence in perceptions of marketing and non marketing functionaries of food retail. This was done to examine if perceptions of marketing and non marketing professionals about convergence in global food retailing differs significantly or not.

Table 8- Discriminant analysis

Sl. N0.	Discriminant variable	Percent contribution in divergence
1.	Cross Country Operational Experience	34
2.	Level of Education	24
3.	Diversity of Experience	20
4.	Length of experience	17

Findings of the study reveal that cross country operational experience, level of education, diversity of experience, length of experience are factors which significantly influence convergence process at the perception level.

Summary and Conclusions:

Findings of study reveal that there is very strong feeling (86 percent) that convergence is taking place in food retailing. However, respondents from Asia have more strong feeling about convergence process than their USA or European counterparts. It is very interesting to observe that Academicians and marketing professionals both are at the same perceptional footing on account of convergence of food retailing.

Factors such as procurement management system, billing system, inventory management system, product display and retailing ambience emerged as as most critical factors which are driving food retailing confluence in developing economies. Promotional methods have more localized strategies. Factors such as rising consumer exposure and expectation, cross country operation of food companies, regulatory compulsions, cost effectiveness, competition, low retail innovations, fast growth of organized retail, easy availability of retail technology are important factors which are pushing food retailing process toward homogeneity.

Study found that those who are working in modern food retailing strongly feel that organized food retailing will lead to uniform business environment, standardization of consumer expectation, food safety, cost effectiveness, better information flow in retail chain which broadly confirm direction of impact of impact revealed by earlier work of researchers in this sector.

REFERENCES:

Allen, D. R. (2004). Customer satisfaction research management. Milwaukee, WI: Quality Press.

Brown, J. R., Dant, R. P., Ingene, C. A., & Kaufmann, P. J. (2005). Supply chain management and the evolution of the "Big Middle" Journal of Retailing . Volume 81, Issue 2, 2005, Pages 97–105.

Davies, G., & Brooks, J. M. (1989). Positioning strategy in retailing.London, UK: Paul Chapman.

Dries, L., Reardon, T., & Swinnen, J. (2004). The rapid rise of supermarkets in central and eastern Europe: Implications for the agrifood sector and rural development. Development Policy Review, 22(5), 525–556.

Ducatel, K., & Blomley, N. (1990). Rethinking retail capital. InternationalJournal of Urban and Regional Research, 14(2), 207–227.

Figuie´, M., & Moustier, P. (2009). Market appeal in an emerging economy: Supermarkets and poor consumers in Vietnam. Food Policy, 34(2), 210–217.

Goldman, A., Krider, R., & Ramaswami, S. (1999). The persistent competitive advantage of traditional food retailers in Asia: Wet markets/ continued dominance in Hong Kong. Journal of Macromar- keting, 19(2), 126–139.

Goldman, A. (1974). Growth of large food stores in developing countries. Journal of Retailing, 50(2), 5–29.

Goldman, A., Ramaswami, S., & Krider, R. E. (2002). Barriers to the advancement of modern food retail formats: Theory and measurement. Journal of Retailing, 78(4), 281–295.

Ho, S. C. (2005). Evolution versus tradition in marketing systems: The Hong Kong food-retailing experience. Journal of Public Policy and Marketing, 24(1), 90–99.

Huang, J., Zhi, H., Huang, Z., Jia, X., & Rozelle, S. (2009). Smallholder incomes, vegetable marketing and food safety: Evidence from China. In Paper presented at the international association of agricultural economists conference, Beijing, China, August 16–22.

IGD (2009). Retail analysis database. <http://www.igd.com/analysis/>. Lee, L. F. (1993). Multivariate tobit models in econometrics. In G. S. Maddala, C. R. Rao, H. D. Vinod (Eds.),

Handbook of statistics (Vol.11, pp. 145-173). Amsterdam: North-Holland. implications for international retailing

Levy, M., Grewal, D., Peterson, R. A., & Connolly, B. (2005). The concept of the Big Middle. Journal of Retailing, 81(2), 83-88.

Lindquist, J. D. (1974). Meaning of image: A survey of empirical and hypothetical evidence. Journal of Retailing, 50(4), 29-38.

Minten, B., Randrianarison, L., & Swinnen, J. F. M. (2009). Global retail chains and poor farmers: Evidence from Madagascar. World Development, 37(11), 1728-1741.

Minten, B., Reardon, T. (2008), "Food prices, quality, and quality's pricing in supermarkets vs traditional markets in developing countries", *Review of Agricultural Economics.*, Vol. 30 No.3, pp.480-90.

National Bank for Agriculture and Rural Development (NABARD) (2011), "Organised Agri-Food Retailing in India", E Book, NABARD, January, 2011

Ness, M., Gorton, M., & Kuznesof, S. (2002). The student food shopper: Segmentation on the basis of attitudes to store features and shopping behaviour. British Food Journal, 104(7), 506-525.

Neven, D., Odera, M., Reardon, T., & Wang, H. (2009). Kenyan supermarkets, emerging middle-class horticultural farmers, and employment impacts on the rural poor. World Development, 37(11), 1802-1811.

Posri, W., Shankar, B., & Chadbunchachai, S. (2007). Consumer attitudes towards and willingness to pay for pesticide residue compliant safe vegetables in Northeast Thailand. Journal of International Food and Agribusiness Marketing, 19(1), 81-101.

Reardon, T., & Gulati, A. (2008). The supermarket revolution in developing countries: Policies for "competitiveness with inclusiveness". Washington, DC: International Food Policy Research Institute.

Reardon, T., Barrett, C. B., Berdegue, J. A., & Swinnen, J. F. M. (2009). Agrifood industry transformation and small farmers in developing countries. World Development, 37(11), 1717-1727.

Reardon, T., Henson, S., & Berdegue, J. (2007). Proactive fast-tracking diffusion of supermarkets in developing countries: Implications for market institutions and trade. Journal of Economic Geography, 7(4), 399-431.

Reardon, T., Timmer, C. P., Barrett, C. B., & Berdegue, J. (2003). Rise of supermarkets in Africa, Asia, and Latin America. American Journal of Agricultural Economics, 85(5), 1140-1146.

Wang, Z., Mao, Y., & Gale, F. (2008). Chinese consumer demand for food safety attributes in milk products. Food Policy, 33(1), 27-36.

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December, 2013, Page: 32-41

Productivity and Efficiency of Indian Public Sector Banks - A Suggestive DEA Approach

Joyeeta Deb
Assistant Professor, Department of Commerce, Assam (Central) University, Silchar
Assam, India

Abstract:

Banking sector is the backbone of any economy. It plays a pivotal role in the economic development of a country. Understanding its systemic importance, policy makers are constantly involved in tailoring measures to make the sector more vibrant, competitive and efficient. Against the backdrop of recurrent bank consolidation, increased competition and technological innovation it is important to keep a track on the performance of the sector in order to gauge the success or failures of the varied policy measures. In the present study attempt is been made to study the productivity growth of the Indian banking sector represented by the select 12 public sector banks. The study uses the Malmquist Total Factor Productivity (TFP) Index to assess the productivity growth over the study period. The results of Malmquist Index of TFP growth reflect TFP growth of 3% on an average. This growth is due to growth in both effch (technical efficiency change) as well as techch (technology change) of 1%. Further decomposition of effch into pure technical efficiency and scale efficiency indicate that technical efficiency change is more due to pure technical efficiency than scale efficiency.

Keywords: *Productivity, Total Factor Productivity (TFP), Public Sector Bank (PSU), Technical Efficiency Change (effch), Technology Change (techch).*

Introduction:

Since the launch of the new economic policy in 1991, the Indian financial system has undergone substantial structural changes. Banks being the vital and dominant segment of the financial system are of crucial importance. Indian banking sector has undergone a series of reform measures. All these measures are expected to perk up the productivity and profitability of the banking sector thereby making it more vibrant and competitive. Needless to mention, this is the peculiar nature of the sector which tempts the stakeholders and all others to keep themselves abreast of the performance of the sector. Furthermore, being a systemic institution, any negative performance in banking sector significantly affects an economy unfavourably compared to the failure of any other financial institutions. Stable and efficient banking sector is therefore an essential precondition to increase the level of economic activity.

There are studies made in different countries to assess the efficiency level of banks. Establishing an effective technique for measuring performance of banks has always been stressed upon by researchers and practitioners. It is found that estimates of efficiency are sensitive to the choice of the technique. However, the whole lot of literature available that attempt to measure the performance of banks generally stress upon profitability, productivity, diversification, asset quality etc. as measures of efficiency. Besides, there are studies that examines technical, cost, allocative and profit efficiency of banks. However, a growing and equally important strand of the banking literature focuses on productivity

change. In the present study an attempt is been made to study the productivity growth of the Indian banking sector represented by the select 12 public sector banks. The study uses the Malmquist Total Factor Productivity (TFP) Index to assess the productivity growth over the study period.

Conceptual Background:

Banking Efficiency:

Efficiency is defined as the success with which an organisation uses its resources to produce outputs i.e., the degree to which the observed use of resources to produce outputs of a given quality matches the optimal use of resources to produce outputs of a given quality (Bhagavath, 2006). Thus, efficiency implies comparison of actual Output or Input to optimal Output or Input.

$$Efficiency = \frac{Actual\ Output}{Input} = \frac{Optimal\ Output}{Input}$$

Cost Efficiency:

Cost efficiency is the most conventional concept of efficiency pursued in studies of bank performance. The cost efficiency analysis helps to assess the relative performance of the bank as against the best practice bank in managing the operating costs of producing the same output under the same condition. Empirical measurement of productive efficiency is first made by Farrell (1957). He defines the cost efficiency and decomposes it into its technical and allocative components. Thus, X-efficiency comprises technical and allocative efficiencies of a bank.

Technical Efficiency:

The technical efficiency of a firm refers to its success/failure in transforming its inputs into outputs. A firm is said to exhibit TE if it is able to reduce the variable inputs to produce the same level of output. The bank is then operating on the efficient frontier. A bank's level of technical efficiency is ascertained in relation to an estimated best practice firm. The Overall Technical Efficiency (OTE) of a firm is decomposed into Pure Technical Efficiency (PTE) and Scale Technical Efficiency (STE). Pure Technical inefficiency results from using more inputs than necessary. Such inefficiency arises due to factors such as managerial errors arising from inertia and ignorance, poor quality of inputs etc (Kumbhakar and Sarkar 2004). Scale inefficiency exists if the bank does not operate at constant return to scale.

Allocative Efficiency:

A bank enjoys allocative efficiency if it is properly choosing the right mix of inputs given the input price. AE refers to the ability of DMUs to use inputs in optimal proportions, given their respective prices and production technology. It relates to the optimal combination of inputs and outputs at a given price. The objective of producers entails the production of given outputs at minimum cost or utilisation of given inputs to maximise the revenue, or the allocation of inputs and outputs to maximise profit.

Productivity:

Productivity of a firm in simple words can be defined as quantity of output produced per unit of input. If a firm uses single input and produces single output, productivity is the ratio of output and input quantities. Thus, if a firm produces y_0 outputs using x_0 inputs in period 0, its productivity can be indicated as follows

$$\prod_0 = \frac{x_0}{y_0} \quad \text{.....(1a)}$$

Similarly when a firm produces $y_1$output from $x_1$inputs in period 1, its productivity can be indicated as follows

$$\prod_1 = \frac{x_1}{y_1} \quad \text{.....(1b)}$$

In order to ascertain the change in productivity as against the base period 0 the following index is constructed

$$\pi_1 = \frac{\prod_1}{\prod_2} = \frac{y_1/x_1}{y_0/x_0} = \frac{y_1/y_0}{x_1/x_0}$$

However with productive units that uses multiple units and outputs, computation becomes cumbersome. The definition of productivity is complex because it is both a technical and managerial concept. Three different indices are popularly used to evaluate technological changes: the Fischer (1922), Tornqvist (1936), and Malmquist (1953) indices. The present study uses Malmquist indices to measure Total Factor Productivity (TFP) growth.

Input Output of Bank:

As discussed above efficiency of any productive unit is judged on the basis of the relationship between inputs and outputs. But there is lack of consensus amongst researchers as to what constitutes input and output for a bank. Two main approaches are found in literature in this regard.

(i) Production Approach; and
(ii) Intermediation Approach.

Production approach defines the bank activity as production of services and views the banks to be using physical inputs e.g., Labour and Capital to provide deposit and loan account. Berger and Humphery (1992), refer this as the value added approach. Under this approach it is the number of accounts of various types that are taken as measures of output produced by the use of capital and labour.

Input = Labor + Capital

Output = Deposits + Advances

Intermediation Approach

Under the intermediation approach, a bank is treated as a producer of intermediation services as it receives funds from depositors and invests at different risk and maturity profile, by using labour and capital. But banks also produce services for which specific charges are levied. Thus money value of loans and non-interest income are taken as outputs while inputs are taken as labour and capital.

Input = Labor + Capital

Output = Loan + Non Interest Income.

Review of Literature

Berger and Humphrey (1997) established that majority of studies concerning banking efficiency are confined to US banking sector and only a handful of them pertain to developing and transitional economies. In the subsequent period more than 60 empirical

studies on banking efficiency have been published and their scope has expanded to more countries including transition ones (Stavarek, 2005). An attempt is made in this section to review some of these studies on banking sector concerning India and abroad. The overall productivity and profitability of banks are expected to be enhanced owing to deregulation as competition would take its force. With increased competition the banks would strive to alter their input and output mix in a way which would yield maximum returns (Mohan, 2006). Since 1990s there is a flurry of studies on the effect of deregulation on efficiency and productivity of banks. The findings from these studies differ on different counts for using different database, methodology, geographical area and time period of study. Ram Mohan and Ray (2004) make a comparative study of efficiency during the reform period. The study is made on three different categories of banks i.e., Public, Private and Foreign banks. Total Factor Productivity (TFP) is measured through Tornqviist and Malmquist TFP growth model. Comparison is made in four combinations- Two under Tornqvist TFP Growth and two under Malmquist TFP growth. Public Sector Banks are compared with old Private Sector Banks and with Foreign Banks. Out of the total of four combinations, no significant difference is found in three cases. PSBs perform better in one and foreign banks in one. The general perception of superior performance of Private Banks over public banks is contradicted by them. Avkiran (2000) examines the productivity of four major Australian Trading Banks by using Malmquist Productivity Indices. His results indicate a decline in TFP in the initial years of reform and a steady rise later. He further uncovers the fact that increased productivity in Australian retail banking sector are driven more by Technological Progress than Technical Efficiency. Hung (2009) investigate and analyze the efficiency, productivity and technology changes in Vietnamese banks. Both TE and AE are studied in the context of 13 banks for a period of two years (2001-2003) using DEA. To study productivity change and to decompose the same into technical and technology change he makes use of Malmquist index. His study finds that urban banks are cost efficient than their rural counterparts. He also identifies that there is a decline in productivity initially but later it increases. The improvement in TFP is attributable to TE than Technology change. Shammugham and Das (2004) using the stochastic frontier function methodology for panel data for a sample of 94 banks during the reform period 1992-99 found that observed output in banks are less than the potential output due to the prevalence of technical inefficiencies. They claim that the reform measures have not helped banks to raise interest margin but have helped raising non-interest income, investment and credits. Another study by Kumbhakar and Sarkar (2003) finds that the tendency for cost inefficiencies to decline from 1986 to 2000. The cost inefficiency of banks has increased since the initiation of the reforms, though the reduction in inefficiencies over time continues albeit at a slower rate compared to that observed in the pre-deregulation period. Private Banks are generally more cost efficient than public banks.

Methodology

Establishing an effective technique for measuring bank's performance has always been stressed upon by researchers and practitioners. It is found that estimates of efficiency are sensitive to the choice of the technique. The whole lot of literature available that attempt to measure the performance of banks can be divided into two categories based on the methodologies adopted viz., traditional measures and frontier approaches. The techniques used in the traditional approach are Ratio Analysis, Regression Analysis, Index Number Approach, Taxonomic Method, Multivariate Analysis, Translog Function etc. Traditionally accounting-based cost ratios were used by bank analysts to measure cost efficiency. Although cost ratios are easy to construct and use, they are often difficult to interpret and may prove to be misleading. An alternative to accounting-based efficiency ratios is the Cost Frontier Analysis (CFA). In CFA, the analysts attempt to estimate the maximum amount that

a bank could reduce its costs while still producing the same amount and combination of financial services. Frontier inefficiency, also known as X-inefficiency, imply the scope of potential cost savings. Under frontier approach several parametric and non-parametric techniques are developed to assess such level of efficiency/inefficiency.

- Parametric Approach: (1) Stochastic Frontier Analysis (SFA), (2) Thick Frontier Approach (TFA), and (3) Distribution Free Hull (DFH).
- Non-Parametric Approach: (1) Data Envelopment Analysis (DEA).

Data Envelopment Analysis

Analysis of production possibilities of micro units remained one of the areas of common interest among researchers. This specific area of research gained further popularity after the publication of a seminal paper by Charnes, Cooper and Rhodes (CCR) in 1978 using DEA model. The increasing popular use of the technique to estimate efficiency scores was further extended by Banker, Charnes, & Cooper in 1984. A key inspiration of CCR paper was from Michael James Farrell (1957). Farrell's efficiency analyses were in the nature of parametric frontier functions, being restricted to single output while CCR enabled linking of linear programming to non-parametric specifications of production possibilities.

DEA is a linear programming-based technique to measure the performance efficiency of organizational units like bank known as Decision Making Unit (DMU) relative to other DMUs. The performance of DMUs is assessed in DEA using the concept of efficiency or productivity which is the ratio of weighted outputs (virtual output) to weighted inputs (virtual inputs). The best performing DMU is assigned an efficiency score of unity (or 100 percent) and thus the performance of a DMU vary between 0 and 1.

The operating units of banks have multiple inputs such as staff size, salaries and hours of operation, advertising budget as well as multiple outputs such as profit, market share and growth rate. In this situation it is often difficult for a manager to determine which operating units are inefficient in converting their multiple inputs into multiple outputs. This problem is addressed by DEA. At the same time DEA also assigns a unique set of weights to each DMU. The weights for a DMU are determined using mathematical programming, as that weight which maximizes its efficiency subject to the condition that the efficiencies of other DMUs is restricted to values between 0 and 1.

The DEA approach forms the efficiency frontier out of piecewise linear stretches thereby forming a convex production possibility set. The firms on the frontier are considered 100 per cent efficient. The efficiency frontier envelops the available data. In DEA frontier, efficient observations are those for which no other DMUs have as much or more of every output or as little of every input. Those DMUs forming the efficiency reference set are known as the peer group for the inefficient units. When the inefficient units are projected onto the envelopment surface, the efficient units closest to the projection and whose linear combination comprises this virtual unit form the peer group for that particular DMU.

Another useful metric within the DEA framework is the Malmquist Total Factor Productivity (TFP) index.

Malmquist Total Factor Productivity Index (MTFPI):

In the last two decades, the literature on productivity growth measurement has been extended from the standard calculations of TFP employing production function framework towards more refined decomposition methods. To overcome the shortcomings of growth accounting approach and to identify the components of productivity change, techniques have been developed that are based on the decomposition of TFP index. A method of measuring productivity with growing popularity is the use of Malmquist Index. Three different indices are frequently used to evaluate technological changes: the Fischer Model, Tornqvist Model and Malmquist Index (1953). The Malmquist index has several features,

which makes it an attractive approach. First, it is a TFP index. Second, it can be constructed using distance functions which are primal measures based only on input and output quantities rather than on price. Third, the index can be decomposed into technical efficiency change and technological change. Efficiency change can further be decomposed into pure efficiency change and scale components. As efficiency and technical changes are analogous to the notions of technological innovation and adoption respectively, the dynamics of the recent growth observed in the manufacturing sector of the Indian economy can be appreciated better. Finally, assumptions do not need to be made with regard to objectives of firms or regions in terms of, say, cost minimisation or profit maximisation objectives, which could be inappropriate in certain situations.

Measuring technical efficiency is an attempt to quantify how well the inputs are converted into outputs by the production process. However, used in isolation, technical efficiency can be a misleading measure of productivity for an organisation or industry where major environmental changes are under way, e.g., deregulation or technological change. Another source of productivity improvement that should be studied is technological progress. Technological progress represents shift of the efficient frontier due to technological innovation, and it should be distinguished from gains in technical efficiency represented by units moving toward the frontier. Hence a study in the nature of total factor productivity is essential to discover the efficacy of a concern to convert inputs into outputs as well as technological improvement.

The present study also makes use of Malmquist (1953) Total Factor Productivity Index (MTFPI) to measure the productivity changes. The MTFPI measures changes in total output relative to inputs. It is one of the most frequently used methods to evaluate productivity change. The MTFPI measures the TFP change between two data points by calculating the ratio of the distances of each data point relative to a common technology. The Malmquist input oriented TFP change index between the base period t and the following period t+1 is defined as

$$M_0(Y_s, X_s, Y_t X_t) = \sqrt{\left[\frac{d_0^s(Y_t, X_t) * d_0^t(Y_t, X_t)}{d_1^s(Y_s, X_s) * d_1^t(Y_s, X_s)}\right]} \quad \text{.....(1)}$$

Thus Malmquist Productivity Index is a product of two: (i) Change in Technical Efficiency (TE) or how close a bank is to the efficient frontier (Catching -Up Index) and (ii) Technological Change i.e., the change in best practice index or how much the benchmark production function shifts at each bank's observed input mix (Innovations and Shocks). This is also termed as the 'frontier shift' effect. Thus equation (3) can be decomposed into:

$$Efficiency\ Change = \frac{d_1^t(Y_t, X_t)}{d_0^s(Y_s, X_s)} \quad \text{.....(2)}$$

$$\text{and } Techno\log ical\ Change = \sqrt{\left[\frac{d_0^s(Y_t, X_t) * d_1^s(Y_s, X_s)}{d_0^s(Y_t, X_t) * d_1^t(Y_s, X_s)}\right]} \quad \text{.....(3)}$$

If Malmquist productivity index is greater than one it indicates progress in TFP and if it is less than one it indicates decline in TFP. Productivity changes reflect changes in technological progress as well as technical efficiency: $M = (E)X(T)$ where E and T stand for technical efficiency change and technology change respectively.

Data and Source:

The present study measures the TFP growth of 12 Public Sector Banks (PSBs) by using Malmquist TFP index. The relevant information is collected from Reserve Bank's Publication viz, Report on Trends & Progress of Banking in India, Statistical Tables Relating to Banks in India, respective websites of the bank, financial express etc. The study period is five years from 2004-2005 to 2008-2009.

Variable Selection:

Input		Output
Interest Expenses	Operating Expenses	Business (Advances & Deposits)

Empirical Results:

Efficiency Analysis:

The TE scores from 2005 to 2009 for the sample banks are exhibited in Table 1. The mean TE scores of individual banks as well as all the banks taken together is displayed in the Table 1. Table 1 reflects that on an average Vijaya Bank exhibit the most superior performance followed by UCO bank. The mean TE score of Vijaya Bank is estimated at 97% is highest amongst all. However it still leaves the scope of further cost savings of 3%. In other words Vijaya Bank can still produce the same output with 3% lesser output. Central Bank of India is considered least efficient with TE score of 90%. If we study the mean TE score of all the banks over the study period one can discover a fluctuating trend.

Table 1
Technical Efficiency (TE) Scores of Banks (2005-2009)

Bk. Code	*Bank*	*TE(2005)*	*TE(2006)*	*TE(2007)*	*TE(2008)*	*TE(2009)*	*Average*
1	Allahabad Bank	0.924	0.924	1	0.962	0.947	0.9514
2	Andhara Bank	0.845	0.923	0.908	0.933	0.947	0.9112
3	Bank of India	0.884	0.912	0.896	0.893	0.934	0.9038
4	Bank of Baroda	0.928	1	0.912	0.914	0.922	0.9352
5	Bank of Maharashtra	0.855	0.92	0.986	1	0.956	0.9434
6	Canara Bank	0.937	0.941	0.936	0.872	0.889	0.915
7	SBI	1	1	0.924	0.772	0.883	0.9158
8	UBI	0.862	0.949	0.968	1	1	0.9558
9	Vijaya Bank	0.915	1	1	0.959	0.995	0.9738
10	UCO Bank	0.94	1	0.999	0.944	0.942	0.965
11	Union Bank of India	0.805	0.932	0.889	0.935	0.995	0.9112
12	CBI	0.884	0.912	0.896	0.893	0.934	0.9038
	Mean	0.898	0.951	0.943	0.923	0.945	0.932

Based on the average TE scores the banks are classified into five efficiency group. Table 2 presents this. From the table it is clear that there is least concentration of banks in 0.75-0.80 efficiency range in all the years of study. Whereas on an average maximum concentration of banks are found in 0.90-0.95 efficiency range.

Table 2
Classification of Banks in Efficiency Range

Efficiency Range (Based on TE Scores)	2004-2005		2005-2006		2006-2007		2007-2008		2008-2009	
	Bank Code	TE	Bank Code	TE	Bank Code	TE	Bank Code	TE	Bank Code	TE
0.75-0.80	Nil	Nil	Nil	Nil	Nil	Nil	7	0.772	Nil	Nil
	2	0.85	Nil	Nil	11	0.889	Nil	Nil	Nil	Nil
0.80-0.85	11	0.81								
	3	0.884	Nil	Nil	3	0.896	3	0.893	6	0.889
	5	0.86					6	0.872	7	0.883
0.85-0.90	8	0.862					12	0.89		
	12	0.884								
0.90-0.95	1	0.92	1	0.924	2	0.91	2	0.933	1	0.947
	4	0.93	2	0.923	4	0.91	4	0.914	2	0.947
	9	0.92	3	0.912	6	0.94	9	0.959	3	0.934
	10	0.94	5	0.92	7	0.92	10	0.944	4	0.922
			6	0.94			11	0.935	10	0.94
			8	0.95					12	0.934
			11	0.932						
			12	0.912						
0.95-1.00	7	1.00			1	1	1	0.962	5	0.956
					5	0.99	5	1	8	1
					8	0.97	8	1	9	0.995
					9	1.00			11	0.995
					10	1.00				
					12	0.90				

Productivity Growth

The main concern of the present study is to analyse the productivity growth of the sample banks. Table 3 shows the Malmquist Index of TFP growth and further decomposition into technical efficiency and technological change. Analysis of table reflects TFP growth of 3% on an average. This growth is due to growth in both effch *(technical efficiency change)* as well as techch *(technology change)* of 1% in both the cases. Further decomposition of effch into pure technical efficiency and scale efficiency indicate that technical efficiency change is more due to pure technical efficiency than scale efficiency where a growth of 1.1% and 0.2% is identified for pure technical efficiency and scale efficiency respectively. Year-wise analysis of tfpch *(total factor productivity change)* scores reveals a decline in the initial two years by 0.8% and 1.9% in 2006 and 2007 respectively thereafter it exhibited productivity growth of 9.6% and 4.2% respectively.

Table 3
Malmquist Index Summary of Annual Means

Year	effch	techch	pech	sech	tfpch
2006	1.06	0.936	1.032	1.027	0.992
2007	0.998	0.984	1.001	0.997	0.981
2008	0.97	1.129	1.008	0.962	1.096
2009	1.026	1.016	1.004	1.022	1.042
Mean	1.013	1.014	1.011	1.002	1.027

Note: effch = technical efficiency change; techch = technology change; pech = pure technical efficiency change; sech = scale efficiency change; and tfpch = total factor productivity change.

It is clear from Table 3 that over the years growth in pure technical efficiency is more accountable for growth in technical efficiency change index than scale efficiency. This reflects the managerial efficiency in controlling costs.

Table 4 exhibits Malmquist Index Summary of firm means. It can be seen that of all the sample banks 10 banks exhibit productivity growth whereas two banks viz Bank of Baroda and State Bank of India display productivity decline of 0.2% and 14.2% respectively. Productivity regress in case of Bank of Baroda is mainly due to regress in technical efficiency change index whereas in case SBI it is due to regress in technological change index.

Table 4

Malmquist Index Summary of Firm Means

Banks	*effch*	*techch*	*pech*	*sech*	*tfpch*
Allahabad Bank	1.006	1.026	1.003	1.004	1.032
Andhara Bank	1.029	1.031	1.011	1.018	1.061
Bank of India	1.014	1.026	1.011	1.003	1.04
Bank of Baroda	0.998	1	1.018	0.981	0.998
Bank of Maharashtra	1.028	1.045	1.027	1.001	1.075
Canara Bank	0.987	1.016	1	0.987	1.003
SBI	0.969	0.885	1	0.969	0.858
UBI	1.038	1.044	1	1.038	1.084
Vijaya Bank	1.021	1.036	1.016	1.005	1.058
UCO Bank	1.001	1.034	0.993	1.008	1.034
Union Bank of India	1.054	1.003	1.046	1.008	1.057
CBI	1.014	1.028	1.011	1.003	1.042
Mean	1.013	1.014	1.011	1.002	1.027

Summary and Conclusion:

The present study is an attempt to analyse the productivity growth of 12 select public sector banks. Based on the data collected for five years from 2005 to 2009, it is identified that almost all the banks exhibit TE scores of more than 90%. The banks under study still reflect the scope of further cost reduction ranging from 3 to 10%. Amongst the banks, Vijaya bank reflects the most superior performance and which in most of the years set the benchmark performance for other bank. Classification of banks in five efficiency range reveals the least concentration of banks in 0.75-0.80 efficiency and a maximum concentration in 0.90-0.95 efficiency range in all the years of study. The results of Malmquist Index of TFP growth. reflects TFP growth of 3% on an average. This growth is due to growth in both effch *(technical efficiency change)* as well as techch *(technology change)* of 1% in both the cases. Further decomposition of effch into pure technical efficiency and scale efficiency indicate that technical efficiency change is more due to pure technical efficiency than scale efficiency where a growth of 1.1% and 0.2% is identified for pure technical efficiency and scale efficiency respectively. Year-wise analysis of tfpch *(total factor productivity change)* scores reveals a decline in the initial two years by 0.8% and 1.9% in 2006 and 2007 respectively thereafter it exhibited productivity growth of 9.6% and 4.2% respectively. It is also seen that of all the sample banks 10 banks exhibit productivity growth. Decomposition of technical efficiency change index into pure technical efficiency and scale efficiency, results indicate dominance of pure technical efficiency. This reveals managerial efficiency in controlling costs. . Thus we can conclude that the Indian Public sector banks are technically quite efficient in converting their inputs into outputs backed by improved productivity. However there still exists ample scope for the sample banks to reduce their cost.

REFERENCES:

Avkiran, N.K. (2000). Rising productivity of Australian trading banks under deregulation 1986-95. Journal of Economics and Finance, 24(20), Summer, 122-140.

Berger, A.N. & Humphrey, B. (1992). Measurement and efficiency issues in commercial banking in Z. Griliches. Output Measurement in Services Sector, University of Chicago Press, Chicago.

Mohan, R. (2006). Reforms, productivity and efficiency in banking: the Indian experience. *RBI Bulletin*, 279-293. Retrieved from <www.rdidocs.rbi.org>.

Berger, A.N. & Humphrey, D.B. (1997). Efficiency of financial institutions: international survey and directions for future research. European Journal of Operations Research (Special Issue), 98, 175-212.

Bhagavath, V. (2006). Technical efficiency measurement by data envelopment analysis: an application in transportation. Retrieved from <http://ajbr.org/Archives/Technicalper cent20Efficiencyper cent20Measurementper cent20byper cent20Dataper cent20Envelopmentper cent20Analysisper cent20-per cent20Anper cent20Applicationper cent20inper cent20Transportation.pdf>.

Farrell, M.J. (1957). The measurement of productive efficiency. *Journal of Royal Statistical Society, Series A (General), 120(3)*, 253-290.

Hung, N.V. (2009). Measuring efficiency of Vietnamese commercial banks: an application of data envelopment analysis. Retrieved from <www.vdf.org>.

Kumbhakar, S.C. & Sarkar, S. (2004). Deregulation, ownership and efficiency change in Indian banking: an application of stochastic frontier analysis. Retrieved from <www.igid.ac.in.pdf>.

Malmquist, S. (1953). Index numbers and indifference surfaces. Trabajos de Estatistica, 4, 209-242.

Mohan, R. (2006). Reforms, productivity and efficiency in banking: the Indian experience. *RBI Bulletin*, 279-293. Retrieved from <www.rdidocs.rbi.org>.

Ram Mohan, T.T. & Ray, S. (2004b). Productivity growth and efficiency in Indian banking: a comparison of public, private and foreign banks. University of Connecticut, Department of Economics, Working Paper Series 2004-27. Retrieved from <www.econ.uconn.edu>.

Shammugham, K.R. & Das, A. (2004). Efficiency of commercial banks during the reform Period. Applied Financial Economics, 14, 681-686.

Stavarek, D. (2005). Efficiency of banks in regions at different stage of European integration process. Retrieved from <http://129.3.20.41/eps/fin/papers/0502/0502020.pdf>.

Stavarek, D. (2005). Efficiency of banks in regions at different stage of European integration process. Retrieved from <http://129.3.20.41/eps/fin/papers/0502/0502020.pdf>.

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December, 2013, Page: 42-48

Fiscal Crisis in Higher Education: A Case Study of North-Eastern Hill University

Jaya Bhattacharjee
Research Scholar, Department of Commerce, North-Eastern Hill University, Shillong - 22, Meghalaya, India
&
K. C. Kabra
Associate Professor & Head, Department of Commerce, North-Eastern Hill University, Shillong - 22, Meghalaya, India

Abstract:

The investment in higher education pays a key role among others for imparting quality education. The paucity of funds for higher education is a serious concern all over the world. There is the need of making an adequate increase in funding for higher education. The Government of India is finding it difficult to sustain the current level of funding to the institutions involved in higher education and searching alternative mode of generating revenues from their own resources. Realising this phenomenon, a modest attempt has been carried out in the present case study to explore the fiscal crisis in higher education.

Key words: *Higher education, Fiscal crisis, NEHU.*

Introduction:

The higher education system and pattern of its funding vary a great deal across the countries and across the units within a country especially in terms of their size, strength and degree of diversification of institutions involved. Yet, they all face severe financial crisis as to allocation of available public funds for the purpose (Barr, 2005). In India, the Government is finding it difficult to sustain the current level of funding to the institutions involved in higher education (Rani, 2004). On the other hand the needs of the higher education system have been growing at a fast pace. Paucity of funds for higher education has led institutions raise concern all over the world as to the need of making an adequate increase in funding for higher education (Task Force, 2000) and to think of alternative modes of generating revenues from their own resources once created (Das, 2007).

Higher Education in North East India:

Prior to independence, the pace of higher education development in North-East was tardy and insignificant. Cotton College, Gauhati established in 1900 was the first such institution in the region. The region has seen gradual expansion of higher education in post independence period which began with the establishment of Gauhati University in 1948. The region today has 10 central universities and one deemed university besides 4 state universities. In addition, the region could attract 16 more private universities. Despite all

this development, the region as a whole is still lacking in professional and technical education.

Political instability and insurgency, lack of proper infrastructure, poor connectivity and high cost of development has been assigned as the problems of higher education in the region and the reasons for lack of proactive expansion of educational facility (Pathak, 2004), (Naskar, 2008). Besides, **cut in financial support has added to the problem of funding.** More efforts are necessary to mobilize internal resources. This is more pertinent since the need and scope of North Eastern States are different from the rest of the country. As such the role of Central Government is crucial in further development of higher education in the region.

Although significant public expenditure is made on infrastructure development of higher education thorough the Non-Lapsable Central Pool of Resources and various other centrally funded projects, grant towards maintenance is not properly matched (Vanlalchhuawna, 2006). In the light of this and high cost of living in the region, it is pertinent to take steps to generate funds for proper growth, upkeep and maintenance of institutions of higher learning.

Profile of North-Eastern Hill University

North-Eastern Hill University (NEHU) the oldest central affiliating university was established in 1973 by an Act of Parliament as a teaching and affiliating University which has grown a long way during the past 39 years. It began with only 20 students in Post Graduate course in 1975 which has increased to 4571 by 2011-12 (excluding the affiliated colleges). At present it has 34 departments and two centre of studies and 63 affiliating colleges spread over two campuses one in Shillong and the other in Tura.

Financial Position of North Eastern Hill University

University is facing severe financial crunch particularly in the non-salary component of the maintenance grant (Annual Report, 2010-11). To understand this phenomenon, two fold study comprising - a) the pattern of funding and b) actual financial position of the university has been made.

All recurring activities taken up during a current plan period sanctioned by UGC on the basis of approved norms are included in the maintenance grant or non-plan sector at the end of the plan period on the same norms and patterns. Maintenance grant is provided to run and maintain the entire academic and administrative machinery of the university. The Maintenance grant is generally made available keeping in mind the immediate previous year's sanction plus the expected expansion of the specific university and the normal rise in establishment cost on account of inflation. Although it has long been suggested that there should be a suitable machinery to assess the additional expenditure involved on account of price rise and 'unpredictable not provided for items' in the budget to avoid the huge deficit (Ghosh, 1981). NEHU receives a large proportion of its maintenance grant from UGC, the procedure for obtaining the same is as in any other central university (Sharma, 2004). The receipt and expenditure during the last 10 years is given in the following Table No.1:

Table: 1
Non-plan Receipt and Expenditure of NEHU
From 2001-02 to 2010-11.

(Rs. in lakhs)

Year	Maintenance Grant	Internal Receipts	Total Receipts	Internal Receipts as % of total Receipts	Grant for non-salary Expenditure at Constant price (2001 Base Year)	Expenditure	Students' Enrollment in the University	Per Capita Expenditure
2001-02	2361.85	130.11	2491.96	5.22	863.74	3061.13	1243	2.46
2002-03	3106.60	130.17	3236.78	4.02	1008.28	3158.70	1821	1.73
2003-04	3276.15	174.76	3450.92	5.06	975.20	3630.21	2102	1.73
2004-05	3598.19	246.08	3844.27	6.40	1065.69	3909.51	2059	1.90
2005-06	3741.01	221.54	3962.56	5.59	1212.57	3886.92	2036	1.91
2006-07	3534.33	238.24	3772.58	6.32	1243.60	3830.88	2102	1.82
2007-08	4322.08	249.91	4572.00	5.47	1511.55	4267.47	2759	1.55
2008-09	5226.07	241.46	5467.54	4.42	1535.97	5649.94	3064	1.84
2009-10	6702.69	267.69	6970.38	3.84	655.35	6594.06	3515	1.87
2010-11	5288.69	283.34	5572.04	5.09	668.88	5827.28	3847	1.51
Growth	9.23%	8.71%			- 1.19%	8.42%	11.23%	-2.50%

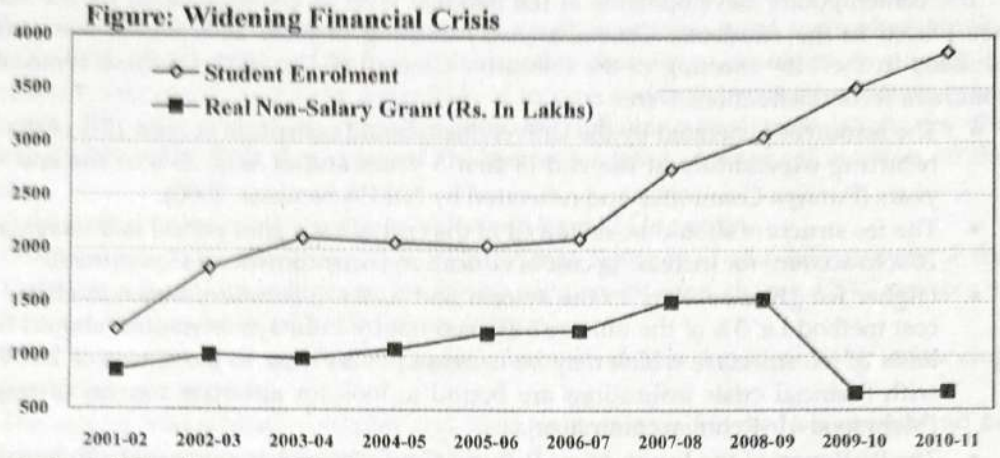
Source: *Annual Reports of NEHU*
Note: Figures have been adjusted for price inflation with base year 2001.

From the above it can be seen that as against students' growth of 11.23 %, the growth in maintenance grant has been 9.23% only which was again entirely absorbed by the statutory payments towards Salary and Retirement benefits as is evident from the fact that the rate of growth in non- salary grant has been negative. This illustrates the increasing pressure on academic expenses like library, laboratory, examination and all other expenses which are incidental to the academic growth of university as is also evident from the fact that growth in per student expenditure of NEHU has been -2.50 %. Although the growth of internal receipts was 8.71%, the percentage of internal revenue as part of total receipts of the University has declined from 5.22% in 2001-02 to 5.09% in 2010-11. At the same time, per student expenditure has also gone down from Rs.2.46 to Rs.1.51 lakhs which shows that the financial crunch in the University grew over a period of time. This reduction in grant was not university specific as is clear from the analysis of 29 universities that Govt. grants reduced from 65% of total expenditure in 1996-97 to 57 % in 2001-02 (Narula, 2004). The Tenth Plan noted that "since budget resources are limited and such resources as are available need to be allocated to expanding primary education, it is important to recognize that the Universities must make greater efforts to supplement resources from the Government"(Azad, 2005). Here it is more important to note that many a times the university has to spread its basic requirement over a period of time because budgetary projections of requirement is strictly based on norms stipulated by UGC / MHRD i.e 3% increase over actual expenditure of previous year in case of salary component and 8% increase over the actual expenditure in case of non-salary component. It may be pointed out that up to 2005, additional requirements were supplemented with some 'Special Grants' which has been discontinued ever since.

This was well predicted by some researchers like Coombs (1985) and Balachander (1987). Coombs (1985) stated that the constraint on higher education comes from increasingly resistant budget ceilings on one hand and relentless rising cost on the other.

Similarly, Balanchander (1987) stated that "the difference between expected requirement and the possible budgetary allocation of resources from public funds will be substantial in the years to come, and if the same pattern of financing continues higher educational administrators will have to do some tight rope walking in matching requirements with the available funds." Therefore, the higher educational institutions should review their position with respect to the grants they receive.

Figure: Widening Financial Crisis



Source: Author's Elaboration from Table: 1

Growing concern of NEHU

An observation of the minutes of Finance Committee (F.C.) meetings held over the years clearly shows the university's concern over the growing crisis as depicted above owing to decline in grant for non-salary component can be observed from The Committee noted in 2002-03 that the budgetary provision for periodicals and journals for the year was so inadequate that compelled it to discontinue 26 foreign journals which are indispensable to the teaching and student community. The drastic cut of 13 % in budget of 2005-06 had adversely disrupted the ongoing academic activities of the University. Owing to further cut of 26 % in non-salary component of 2006-07 rendered the restoration of momentous growth impossible. In April 2007, it was noted that due to non-release of funds under non-plan non-salary component, essential repair and maintenance of its residential quarters, academic buildings, hostels, and the furnishings of its newly constructed buildings could not be undertaken. In December 2007, it was put on record that cut in budget being a regular feature, managing the affairs towards the obligatory expenses in the midst of expansion in terms of increase in faculty, students and new departments became extremely difficult. Justice was also not given to the up-keep of buildings and equipments not to speak about the replacement of 20-25 years old equipment and furniture. In June 2008, it was felt that despite huge curtailment of expenditure during 2007-08 on electricity, vehicle operations, fees and honorarium, TA / DA to members of committees, TA / DA to staff, advertisement and publicity, hospitality, etc. the university was still reeling under financial crunch. In the wake of serious hindrance to the progress of the University owing to 52 % cut in the non-plan non-salary budget of 2009-10 over 2008-09, the Finance Committee in June 2010 expressed concern in the words that *"the University must overview its fees structure and income realization and to adopt an innovative approach to improve resource generation."* In November 2010, the University puts on record that despite utmost economy and withholding of maintenance work, the actual expenditure exceeded amount sanctioned for 2010-11. It was opined that the periodical repairs & maintenance and up-keep of buildings and other assets need to be resumed. With the addition of newly constructed buildings, consumption of

electricity has gone up. Similarly due to increase in number of students, expenses on conduct of examination have also gone up. Realizing that the University suffered a setback in the academic and administrative programmes / activities because of the drastic reduction in the non-plan non-salary budget, it is necessary to maintain non-plan non-salary budget at the level above that of 2008-09.

The contemporary developments at the national level as communicated by the MHRD were placed in the Academic Council's (A.C.) meeting of June, 2003 which were further discussed in the 116th meeting of the Executive Council (E.C.), 2003. Of these some of the prominent recommendations were:

- The resources generated by the Universities should constitute at least 15% of the total recurring expenditure at the end of first 5 years and at least 25% at the end of 10 years (Punnya Committee and reiterated by NIEPA Seminar, 2000).
- The fee structure should be reviewed at the end of each plan period and increased by 20% to account for increasing cost of education (Anandkrishnan Committee).
- Higher fee gives sobriety to the system and to the institution, hence modified unit cost method i.e. 3% of the unit cost worked out by Punnaya committee should be the basis of fee structure which may be increased every year to the extent of 2%. Faced with financial crisis institutions are bound to look for alternate sources of revenue (Mehmood-Ur-Rehman committee).
- The 9th Report of the Expenditure Reforms Commission has suggested efficient use of whatever resources available in the Institutions to increase their resources, besides curtailing wasteful expenditures at their level. Failing to improve financial and academic discipline, institutions will be subjected to face disincentives.
- The UGC sponsored seminars on "Higher Education in India, Issues and Concerns and New Directions" observed that organized structure for Higher Educational fund raising and creating a culture of giving back is a possible way of tackling resource crunch in higher education (UGC, 2003).

Steps to Resolve Concern:

The University's highest bodies were well aware of the importance of Internal Revenue generation in order to avert the university from impending financial crisis. In this regard a mention may be made of 63rd A.C. (June, 2000) which for the first time approved the following *inter-alia* other recommendations of the Dean's Committee on 'Income Generation and Cost Saving Measures' which when placed at 107th E.C. for approval was deferred:

1. Investment of university funds on various projects and activities which may generate more income than the income generated through bank interest.
2. Lump-sum fee on short-term courses.
3. (a) To reserve 10% supernumerary seats on full cost basis.
   (b) Library fee for Non-NEHU people.
   (c) Internet user fee for research scholars.
   (d) Parking fee by constructing parking yards.
   (e) Bench fee for research scholars @ Rs1000 per year.
   (f) Use of sites on Campus for Advertising of selected commercial products.
   (g) Advertisement on fee book cover, file cover, bus shed, staff uniforms, university publications, etc.

Later the university constituted one Man Committee on 'Academic and Financial Management of NEHU' the recommendations of which were ultimately deferred by 116th E.C. The relevant recommendations among others were:

1. "Common resource centers in each department / center. This is desirable in view of gross under- utilization of the existing facilities available in the rooms of individual teachers."
2. "Greater financial autonomy to the departments / centers for managing the funds allocated to them. This is expected to encourage generation of fund as also more judicious use of the financial grants available to them."

The recommendations of both the above referred Committees were again placed in the 69th A.C., 2003 which proposed to constitute another Standing Committee to suggest in detail the concrete measures for the generation of income and revision of fee structure every two years. The said committee came up with the following recommendations for the approval in 70th A.C., 2003, that deferred the matter for want of more information on the subject:

- Publications of various materials which could be sold for a price.
- USIC to deal with maintenance of PC's, Science Equipment and microscopes of the University, use of glass blowing facility by department for a charge. USIC services to be extended to schools and colleges for a payment.
- RSIC may extend its services to include maintenance of equipment for enhancing generation of revenue.
- The sale of Mayurbhanj Complex and fund so generated be put in a corpus and be invested judiciously to generate revenue.
- Bijni Complex to be rented.
- Streamlining of system for monitoring of fee payment.
- Differential fee structure for different courses based on actual cost of course.
- Paid seats be introduced in various courses.
- Functioning of computer centre be improved, short-term courses be introduced and fee be charged as per prevailing market rates.
- Transport charges to form a part of semester fee.
- Corporate fares to be negotiated with airlines for official travel.
- Downsizing of CDD in view of near completion of Campus development.
- Short-term orientation courses by various departments in the evening.
- Alumni contribution and reaching out to community and general public for funds.
- Faculty consultancy may be encouraged; however, a part of the remuneration may be contributed to Corpus fund.
- On completion of VSAT facility the same may be extended to teachers / students and staff on payment basis.

These recommendations were placed in the 116th E.C., 2003, but, the item was again deferred. The 142nd E.C., 2010 discussed and approved the letter received from the Secretary, UGC on utilization of surplus capacity in Educational Institutions which calls for optimal utilization of already existing infrastructure in Colleges and Universities that could be in the form of Skill Development Programs (SDP) / Courses in Educational Institution after class hours. However, the Finance Committee, November, 2011 concluded that non-salary grant including the internal receipts so generated is simply not adequate to meet the growing requirement.

Conclusion:

It is evident from the above that the university is almost entirely dependent on the Government for its maintenance. The university is reeling under the rising inflationary pressure resulting in shooting up of its maintenance cost on one hand and reduced

maintenance grant other than that of salary and pensionery benefits on the other hand. It is true that while the State cannot walk away from its responsibility of financing higher education, imaginative ways will have to be devised to find complimentary sources of funds so that universities can move beyond their current levels of engagement with students and excel in providing education (Yashpal Committee, 2009). Further, according to the recent practice of UGC, the additional revenue generated by the universities is no longer treated as their income while calculating grants payable by it to universities. The universities are free to use it for the pursuance of their objectives. Studies conducted in developed countries also largely found supporting a systematic environment oriented effort as the key to successful revenue generation by universities. Countries and institutions are trying to meet the shortfall in financing higher education in various ways. Studies need to be taken up to see if NEHU through concerted effort can adopt systematic channelisation of internal resources for generating additional revenue.

REFERENCES:

Azad, J. L. (2005). Financing Higher Education in India with special Reference to Resource Mobilisation. *University News*, 42(52), 97-102.

Balachander, K. K. (1987). Wanted: A new strategy for Financing Higher Education-I, *University News*, 25(29) 3-9.

Barr, N. (2005). Financing Higher Education. *Finance and Development*, IMF, 42(2), 34-37 [Retrieved from: www2.lse.ac.uk/researchAndExpertise/Experts/*n.barr*@lse.ac.uk].

Coombs, H. P. (1985). *The World Crisis in Education, the View from the Eighties*: New York: Oxford University Press.

Das, S. (2007). The Higher Education in India and the Challenge of Globalisation. *Social Scientist*, 35(3/4), 47-67.

Ghosh, D. K. (1981). Financing of Universities, *University News*, 19(14), 382-383.

Mishra, S. K. and Panda, N. M. (2000). Unit Cost of Higher Education: A Case Study of North-Eastern Hill University, *Journal Educational Planning and Administration*, 14(3), 269-283.

Narula, M. (2004).*University Finances: An Analytical study (Mimeo)*, New Delhi, NIEPA.

Naskar, S. (2007). *Higher Education in the North East.* [Retrieved from www.globalindiafoundation.org accessed on 22.8.11].

Pathak, K. (2004). Problems and Perspectives of Higher Education. In Vankatasubramanium, K. (Ed.), *Issues in Higher Education-Vol. II*. Hyderabad: ICFAI University Press..

Punnayya, K. (1993). *UGC Funding of Institutions of Higher Education*. New Delhi: UGC.

Qamar, F. (2004). Financing of Higher Education in the Post Economic Reforms Era: Role of the University Grants Commission, *University News*, 42(52). In Financing Higher Education. New Delhi: AIU.

Rani, G. P. (2004). Economic Reforms and Financing Higher Education in India. *Indian Journal of Economics and Business*, 3(1), 79-102.

Sharma, J. P. (2004). Financing Pattern of University of Delhi. *University News*, 42(52), 42-49.

Task Force. (2000). *Higher Education in Developing Countries - Perils and Promise*. Task Force on Higher Education and Society. Washington: World Bank.

UGC. (2003). Higher Education in India, Issues Concerns and New Directions. New Delhi: Government Of India.

Vanlalchhawna. (2006). *Higher Education in North East India: Unit cost Analysis*. New Delhi: Mittal Publications.

Yaspal. (2009). *The Committee to Advice on Renovation and Rejuvenation of Higher Education*. New Delhi: Government of India.

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December 2013, Page: 49-59

Customer Satisfaction about Select Direct-To-Home Brands in Silchar Town: A Comparative Study

Dinesh Kumar Pandiya
Dean, Mahatma Gandhi School of Economics and Commerce, Assam (Central)University, Silchar, Assam, India

Kingshuk Adhikari
Assistant Professor, Department of Commerce, Assam (Central) University, Silchar, Assam, India
&
Kuldeep Goala
Post Graduate Student, Department of Commerce, Assam (Central) University, Silchar, Assam, India

Abstract:

Direct-To-Home (DTH) service provides a TV viewer a variety of options of programmes. People pay for that and get the service. Not to say that like many other services for this service too there remains a fierce competition in Indian market as we not only practice democracy in our political and other walks of life but also believe in market economy. Just wish to have a higher sale will not attract customers. In order to lure more customers the manufacturers and the sellers are expected to know the customers' specific preferences, likings and complaints about the specific components of goodness of a commodity or a service. Since the Silchar town of Assam was conveniently selected as the population area, the primary survey of it revealed that largely five DTH brands are available in the market of Silchar town. The results of the said survey helped in setting the agenda and the objectives of this study which finally was culminated in identifying the specific components of goodness of DTH service on the basis of a component wise comparison of the selected five DTH brands, which are Tata Sky, Dish TV, Sun Direct, Videocon D2H and Airtel Digital TV in order to know the basis of customer satisfaction.

Keywords: *DTH, Silchar, Customer's satisfaction.*

Introduction:

Earlier there was only one TV channel in India the "Doordarshan". As it known to us the channel Doordarshan was owned and operated by government of India. The Cable Television Ordinance Law was passed in January 1995. This enabled the cable operators to feed channels and in course of time the private companies were allowed to float their own channels which finally led to the 'explosive' growth in number of TV channels and number of cable operators. The growth of TV channels & cable operators created a big industry and market opportunities. The history of the growth of cable operators reveal that even though the number of cable operators kept on increasing, the services provided by them did not improve matching to the expectations of the customers. Increase in tariff plan, selective broadcast and poor services were major causes of dissatisfaction among the customers. This

has created an opportunity for DTH, which serves an immediate threat to the cable networks. Some of the key players in the DTH industry are Dish TV by Zee Group, Tata Sky joint venture of Tata & Star TV, Big TV by Anil Dhirubhai Ambani Group, Digital TV by Bharti Tele media and SUN Direct from the promoters of Sun TV.

Indian market almost till recently was dominated by the presence of local cable TV operators. DTH opened an option for Indian consumers to opt for the satellite service to obtain television channels direct to their homes without any intermediaries. It also provided several value added services to enhance their television watching experience. As DTH was a relatively new category most people were hesitant to experiment the same. Interestingly despite the fact that Indian consumers were not fully satisfied with their cable services, yet many of them did not switch over to any other means of entertainment. It was therefore imperative for companies such as Tata Sky, Dish TV, Reliance BIG TV, SUN Direct, AIRTEL Digital TV, DD Direct+ and Videocon D2H to educate the consumers about the benefits of the service and in turn create an urge to invest in it. Under the changed circumstances the industry is ready to enter into the second stage of growth powered by the twin engines of technology i.e., availability of quality infrastructure and the accelerated penetration of digital connection. Since the today's market entails in it a variety of players, it was considered useful to have a comparative study of all these based on the customers' experience.

Conceptual Framework

Customer satisfaction is the degree to which customer expectations of a product or service are not met met or exceeded. Armstrong and Kotler have defined Customer Satisfaction in the following words. "Customer satisfaction depends on the product's perceived performance relative to a buyer's expectations. If the product's performance falls short of expectations, the customer is dissatisfied. If performance matches expectations, the customer is satisfied. If on the other hand, performance exceeds expectations, the customer is highly satisfied and delighted." (Armstrong and Kotler: 2010). Nigel Hill and Jim Alexander have defined Customer Satisfaction as follows: "Customer Satisfaction is a measure of how your organisation's total product performs in relation to a set of customer requirements" (Nigel Hill and Jim Alexander: 2000). According to Greg Roche, Nigel Hill and Rachel Allen "Customer Satisfaction or, dissatisfaction, is the feeling a customer has about the extent to which his experiences with an organization have met their needs."(Greg Roche and et.al: 2007). Oliver, Zeithaml and Bitner have quoted "Customer Satisfaction is the customer's evaluation of services after purchase as opposed to their expectations" (Oliver and et.al.: 1997). Anderson, Fornell and Lehmann have opined that "Customer Satisfaction is the overall experience customers have when purchasing and consuming products and services." (Anderson and et.al.: 1994)

Thus, Customer Satisfaction is a measurement or indicator of the degree to which customers or users of an organization's products or services are pleased with those products or services. In short, customer satisfaction is the level of satisfaction provided by the goods or services of a company to a customer as measured by the number of repeated customers. In a competitive market place, customer satisfaction is a key differentiator and therefore has increasingly become a key element of business strategy. Within organizations, customer satisfaction ratings can have powerful effects. Furthermore, when a brand has loyal customers, it gains positive word-of-mouth marketing, which is both free and highly effective. Therefore, it is essential for businesses to effectively manage customer satisfaction. To do this, firms need reliable and representative measures of satisfaction.

Review of Literature

Umapathy, Sivasundaram (2007) studied the opportunities and threats present in the DTH industry of India by using the Potter's five forces model. He said that companies have to improve the service quality and reduce the cost levels in order to grab the customers. The increasing consumer awareness has also made it difficult to satisfy the consumers. He inferred that today's consumers are sensitive to price as well as the quality. So, according to him the DTH operator should also take a serious look at these factors. Finally, he concluded that if a DTH player wants to be successful, it must offer all in one service to the value-conscious, price sensitive Indian consumer.

Balaji, V. (2005) conducted a research in India to find the opinion of consumers about DTH. He found that Dish TV is more viewed among the earners of Rs.10000 and above per month. Further he also found that 91% of families preferred Dish TV. Almost half of them had chosen Dish TV for its quality picture and digital sound. His findings also included that 40% of people were highly satisfied with the Dish TV.

Adak, Barun (2010) made a study to analyze the factors which influence the decision of the people on switching over from cable to DTH service and also to analyze the opportunities of Indian DTH industry. Using descriptive analysis he found that among the users of current DTH players in Ghaziabad region, the users of Reliance Big TV & Videocon D2H were more dissatisfied with the service provided. Whereas that of Tata Sky, Airtel Digital TV, Dish TV & Sun Direct had 11.9%, 13%, 6.3% and 0% dissatisfied customers respectively. He also found that maximum customers of DTH were strongly influenced by picture quality.

Jayashree J. and Sivakumar A. (2013) made a research to analyze the perceptions of users towards DTH services in Coimbatore city and to study the level of satisfaction about DTH service. Using Chi-square test, Garrett Ranking Techniques and Reliability test they found that majority of the respondents prefer to buy Sun Direct because of its best picture quality, reasonable price, various kinds of packages and more channels. So the DTH service providers must pay attention on Customer Service, picture quality and reasonable price rather than other factors to make their business more successful and satisfy the consumers.

Objectives of the Study

1. To measure the level of satisfaction of the users of the DTH brands in Silchar town of Assam.
2. To compare the component wise satisfaction of customers of different DTH brands in Silchar town.
3. To recommend the measures to the concerned brands for the improvement of DTH service on the basis of feedback provided by the respondents.

Research Methodology

In order to address the objectives of the study, only five DTH brands viz. Tata sky, Dish TV, Sun Direct, Videocon D2H and Airtel Digital TV, were decided to be offered as options for the study. The factor wise respondents' level of satisfaction was measured on a five point scale i.e., Fully Satisfied, Moderately Satisfied, Neither Satisfied nor Dissatisfied, Moderately Dissatisfied and Fully Dissatisfied. In addition to discover their level of satisfaction count wise the overall satisfaction of the customers was also noted on a five point scale.

The target population of the survey constitutes the TV households in Silchar. Even though Silchar town, which is divided in twenty eight municipal wards, was chosen as the geographical area for selection of samples, the respondents were picked up conveniently largely from the seven, municipal wards of Silchar i.e., Rangirkhari, Public School Road, Sonai Road, Link Road, Kanakpur Road, College Road and Das Colony, which were also

chosen conveniently. After collecting the data with the help of structured questionnaires, only frequency, percentage and weighted average score have been used to arrive at the findings of the study.

The present study is an attempt to probe the level of customer satisfaction over the selected DTH brands on the grounds of such factors which are ordinarily considered as important for making a choice for DTH connections. The size of the sample respondents is only 65 in number and therefore it may not be a true representative of the total population in Silchar Town, though this is also a fact that to identify the size of the population/universe using DTH in any city/town of the country is a cumbersome exercise. Thus the size of the sample is a limiting factor for measuring the goodness of the DTH brands and the same is applicable with this study.

The present study is an attempt to probe the level of customer satisfaction over the selected DTH brands on the grounds of such factors which are ordinarily considered as important for making a choice for DTH connections. The size of the sample respondents is only 65 in number and therefore it may not be a true representative of the total population in Silchar Town. The target population of the survey constitutes the TV households in Silchar. Even though Silchar town, which is divided in twenty eight municipal wards, was chosen as the geographical area for selection of samples, the respondents were picked up conveniently largely from the seven, municipal wards of Silchar i.e., Rangirkhari, Public School Road, Sonai Road, Link Road, Kanakpur Road, College Road and Das Colony, which were also chosen conveniently. The factor wise respondents' level of satisfaction was measured on a five point scale i.e., Fully Satisfied, Moderately Satisfied, Neither Satisfied nor Dissatisfied, Moderately Dissatisfied and Fully Dissatisfied. Besides discovering their level of satisfaction count wise the overall satisfaction of the customers was also noted on a five point scale. After collecting the data with the help of structured questionnaires, only frequency, percentage and weighted average score have been used to arrive at the findings of the study.

Level of Customers' satisfaction about DTH

In order to measure the level of customers' satisfaction over the selected DTH brands, twelve factors have been selected which are ordinarily considered as important in determining the choice for DTH brands. Based on the responses of customers, the level of satisfaction is as follows:

Table 1: Overall Level of Satisfaction

Level of Satisfaction	Number of Respondents	Percentage of Respondents
Fully Dissatisfied	0	0.00
Moderately Dissatisfied	1	1.54
Neither Satisfied Nor Dissatisfied	4	6.15
Moderately Satisfied	49	75.38
Fully Satisfied	11	16.92
Grand Total	65	100.00

Source: Field Survey

Table 1 shows the overall level of satisfaction of the customers of the five DTH brands viz. Tata Sky, Dish TV, Sun Direct, Videocon D2H and Airtel Digital TV. Table reveals that none of the respondents have been fully dissatisfied with the overall services rendered by the DTH brand they are using and only 1.54% has been moderately dissatisfied. Therefore, the group which is dissatisfied includes only 1.54% of the total respondents. Further, the table shows that 6.15% of the respondents have registered that they are neither satisfied nor dissatisfied with the overall service. Out of the total respondents, 75.38% have registered that they are moderately satisfied whereas, only 16.92% of the respondent have

been found fully satisfied with the overall services. Therefore, the satisfied group includes only 92.20% of the total respondents.

Table 2 shows level of customer satisfaction regarding transmission during rough weather. Table reveals that 29.23% of the respondents have been fully dissatisfied with the services rendered during rough weather and 21.54% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 50.77% of the total respondents. Further, the table shows that 9.23 % of the respondents have registered that they are neither satisfied nor dissatisfied with the service provided during rough weather. Out of the total respondents, 29.23% have registered that they are moderately satisfied whereas, only 10.77% of the respondent have been found fully satisfied with the service provided during rough weather. Therefore, the satisfied group includes only 40% of the total respondents.

Table 2 depicts level of customer satisfaction regarding price of the basic plan. Table reveals that 4.62% of the respondents have been fully dissatisfied with the price of the basic plan and 12.31% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 16.93% of the total respondents. Further, the table shows that 7.69 % of the respondents have registered that they are neither satisfied nor dissatisfied with the price set for the basic plan. Out of the total respondents, 55.38% have registered that they are moderately satisfied whereas, only 20% of the respondent have been found fully satisfied with the price of the basic plan. Therefore, the satisfied group includes only 75.38% of the total respondents.

Table 2: Component Wise Satisfaction level of DTH Users

Components	Fully Dissatisfied	Moderately Dissatisfied	Neither Satisfied Nor Dissatisfied	Moderately Satisfied	Fully Satisfied
Transmission during Rough Weather	19	14	6	19	7
Price of the Basic Plan	3	8	5	36	13
Price of the Additional Package	4	9	25	20	7
Installation Facilities	2	6	11	24	22
After Installation Service	6	8	16	19	16
Customer Care	4	4	8	26	23
Channel Availability in Basic Plan	2	6	6	29	22
Sound Clarity	0	1	1	16	47
Offers	4	7	25	19	10
Value Added Services	9	5	29	16	6
On Demand Service	3	6	30	14	12
Retailers' Response	2	2	8	22	31

Source: Field Survey

Table 2 portrays level of customer satisfaction regarding price of the additional plan. Table reveals that 6.15% of the respondents have been fully dissatisfied with the price of the additional plan and 13.85% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 20% of the total respondents. Further, the table shows that 38.46 % of the respondents have registered that they are neither satisfied nor dissatisfied with the price of the additional plan. Out of the total respondents, 30.77% have registered that they are moderately satisfied whereas, only 10.77% of the respondent have been found fully satisfied

with the price of the additional plan. Therefore, the satisfied group includes only 41.54% of the total respondents.

Table 2 depicts level of customer satisfaction regarding installation facility. Table reveals that 3.08% of the respondents have been fully dissatisfied with the installation facility and 9.23% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 12.31% of the total respondents. Further, 16.92 % of the respondents are neither satisfied nor dissatisfied with the installation facility. Out of the total respondents, 36.92% have registered that they are moderately satisfied whereas, only 33.85% of the respondents have been found fully satisfied with the installation facility. Therefore, the satisfied group includes only 70.77% of the total respondents.

Table 2 reveals level of customer satisfaction regarding after installation service. 9.23% of the respondents have been fully dissatisfied with after installation service and 12.31% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 21.54% of the total respondents. Further, 24.62 % of the respondents have registered that they are neither satisfied nor dissatisfied with after installation service. Out of the total respondents, 29.23% have registered that they are moderately satisfied whereas, only 24.62% of the respondents have been found fully satisfied with after installation service. Therefore, the satisfied group includes only 53.85% of the total respondents.

Table 2 portrays level of customer satisfaction regarding customer care. Table reveals that 6.15% of the respondents have been fully dissatisfied with customer care and 6.15% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 12.30% of the total respondents. Further, 12.31 % of the respondents are neither satisfied nor dissatisfied with customer care. Out of the total respondents, 40% have registered that they are moderately satisfied whereas, only 35.38% of the respondent have been found fully satisfied with customer care service. Therefore, the satisfied group includes only 40% of the total respondents.

Table 2 discloses level of customer satisfaction regarding channel availability in basic plan. 3.08% of the respondents have been fully dissatisfied with the channel availability in basic plan and 9.23% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 12.31% of the total respondents. Further, the table shows that 9.23 % of the respondents are neither satisfied nor dissatisfied with the channel availability in basic plan. Out of the total respondents, 44.62% have registered that they are moderately satisfied whereas, only 33.85% of the respondent have been found fully satisfied with the channel availability in basic plan. Therefore, the satisfied group includes only 78.47% of the total respondents.

Table 2 demonstrates level of customer satisfaction regarding sound clarity. The table reveals that there no respondents who are fully dissatisfied with the services rendered through sound clarity. The numbers of respondent who have been moderately dissatisfied are 1.54%n. Therefore, the group which is dissatisfied includes only 1.54% of the total respondents. Further, the table shows that 1.54 % of the respondents are neither satisfied nor dissatisfied with sound clarity. Out of the total respondents, 24.61% have registered that they are moderately satisfied whereas, only 72.31% of the respondent have been found fully satisfied with the service provided through sound clarity. Therefore, the satisfied group includes only 96.92% of the total respondents.

Table 2 reveals level of customer satisfaction regarding offers. 6.15% of the respondents have been fully dissatisfied with the offers provided and 10.77% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 16.93% of the total respondents. Further, the table shows that 38.84 % of the respondents are neither satisfied nor dissatisfied with the offers provided. Out of the total respondents, 29.23% have registered that they are moderately satisfied whereas, only 15.38% of the respondent have

been found fully satisfied with the offers provided. Therefore, the satisfied group includes only 44.61% of the total respondents.

Table 2 portrays level of customer satisfaction regarding value added services. 13.85% of the respondents have been fully dissatisfied with value added services and 7.69% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 21.54% of the total respondents. Further, 44.62 % of the respondents are neither satisfied nor dissatisfied with value added services. Out of the total respondents, 24.62% have registered that they are moderately satisfied whereas, only 9.23% of the respondent have been found fully satisfied with value added services. Therefore, the satisfied group includes only 33.85% of the total respondents.

Table 2 also depicts level of customer satisfaction regarding on demand services. The table reveals that 4.62% of the respondents have been fully dissatisfied with the on demand services rendered and 9.23% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 13.85% of the total respondents. Further, the table shows 46.15 % of the respondents have registered that they are neither satisfied nor dissatisfied with the on demand services. Out of the total respondents, 21.54% have registered that they are moderately satisfied whereas, only 18.46% of the respondent have been found fully satisfied with the on demand services. Therefore, the satisfied group includes only 40% of the total respondents.

Table 2 shows level of customer satisfaction regarding retails' response. Table reveals that 3.08% of the respondents have been fully dissatisfied with the services rendered by the retails and 3.08% have been moderately dissatisfied. Therefore, the group which is dissatisfied includes 6.16% of the total respondents. Further, the table shows that 12.31% of the respondents have registered that they are neither satisfied nor dissatisfied with the retail's response. Out of the total respondents, 33.85% have registered that they are moderately satisfied whereas, only 47.68% of the respondent have been found fully satisfied with the retail's response. Therefore, the satisfied group includes only 81.53% of the total respondents.

Component wise comparison of different brands of DTH service in Silchar Town

This section includes the analyses and discussions relating to the second objective of the study i.e. to identify the specific components of goodness of DTH service on the basis of component wise comparison of the selected five DTH brands. The analyses and the discussions covered in this section are as follows.

Table 3: Component Wise Degree of Satisfaction Users of Different DTH Brands in Silchar Town

Components	Tata Sky	Dish TV	Sun Direct	Videocon D2H	Airtel Digital TV	Average Score
Transmission during Rough Weather	2.63	2.97	2.98	2.98	2.69	2.85
Price of the Basic Plan	3.71	4.33	2.67	2.67	3.64	3.40
Price of the Additional Package	3.04	3.78	3.33	2.33	3.45	3.19
Installation Facilities	3.96	4.11	3.67	3.66	3.77	3.83
After Installation Service	3.61	3.55	2.67	2.66	3.50	3.20
Customer Care	4.00	4.33	3.34	3.00	3.86	3.71
Channel Availability in Basic Plan	3.71	4.67	4.33	4.33	3.91	4.19
Sound Clarity	4.75	4.78	4.33	4.33	4.64	4.57
Offers	3.32	4.33	3.67	3.00	3.04	3.47

Value Added Services	3.00	3.78	3.67	3.00	3.04	3.30
On Demand Service	3.54	3.33	4.00	3.67	3.13	3.53
Retailers' Response	4.18	4.22	4.67	3.67	4.23	4.19

Source: Field Survey

Table 3 shows the component wise comparison of satisfaction level of customers of different DTH brands. The average score on the component 'Transmission during rough weather' is 2.85. Tata Sky and Airtel Digital TV have provided satisfaction below the average score whereas, Sun Direct and Videocon D2H have the highest satisfaction score of 2.98 followed by Dish TV scoring 2.97 in providing customers satisfaction through transmission during rough weather.

The average score on the component 'Price of the basic plan' is 3.40. Dish TV has the highest satisfaction score of 4.33 followed by Tata Sky and Airtel Digital TV scoring 3.71 and 3.64 respectively. But Sun Direct and Videocon D2H have the lowest satisfaction score of 2.67 on the count 'price of the basic plan'.

The average score on the component 'price of the additional package' is 3.19. Dish TV has the highest satisfaction score of 3.78 followed by Airtel Digital TV, Sun Direct and Tata Sky scoring 3.45, 3.33 and 3.04 respectively. Videocon D2H has the lowest satisfaction score of 2.33 on the count 'additional package'.

The average score on the component 'installation facilities' is 3.83. Dish TV has the highest satisfaction score of 4.11 followed by Tata Sky (3.96). Whereas, Airtel Digital TV (3.77), Sun Direct (3.67) and Videocon D2H (3.66) score below the average mean in providing satisfaction to customers through installation facilities.

The average score on the component 'after installation facilities' is 3.20, Tata Sky has the highest satisfaction score of 3.61 followed by Dish TV and Airtel Digital TV scoring 3.55 and 3.5 respectively, which is above the average mean. On the other hand, Sun Direct and Videocon D2H score below the average mean 2.67 and 2.66 respectively in providing satisfaction to customers through after installation facilities.

The average score on the component 'customer care' is 3.71, Tata Sky has the highest satisfaction score of 4.71 followed by Airtel Digital TV scoring 3.86. In comparison with the average mean which is 3.71, Sun Direct and Videocon D2H score below the average mean 3.34 and 3 respectively in providing satisfaction to customers through Customer Care.

The average score on the component 'Channel availability in basic plan' is 4.19. Dish TV has the highest satisfaction score of 4.67 followed by Sun Direct and Videocon D2H scoring 4.33. In comparison with the average mean, Airtel Digital TV and Tata Sky has scored below the average mean, securing only 3.91 and 3..71 respectively in providing satisfaction to customers through Channel availability in basic plan.

The average score on the component 'sound clarity' is 4.57. Dish TV has the highest satisfaction score of 4.78 followed by Tata Sky and Airtel Digital TV scoring 4.75 and 4.64 respectively. In comparison with the average mean, it was also found that Sun Direct and Videocon D2H has scored below the average mean, securing only 4.33 in providing satisfaction to customers through sound clarity.

The average score on the component 'offer' is 3.47. Dish TV has the highest satisfaction score of 4.33 followed by Sun Direct scoring 3.67. In comparison with the average mean, it was also found that Tata Sky, Airtel Digital TV and Videocon D2H have scored below the average mean, securing only 3.32, 3.04 and 3 respectively in providing customers satisfaction through offers.

The average score on the component 'value added service' is 3.3. Dish TV has the highest satisfaction score of 3.78 followed by Sun Direct scoring 3.67. In comparison with the average mean, it was also found that Airtel Digital TV, Tata Sky and Videocon D2H have

scored below the average mean, securing only 3.04, 3 and 3 respectively in providing customers satisfaction through value added services.

The average score on the component 'on demand service' is 3.53. Sun Direct has the highest satisfaction score of 4 followed by Videocon D2H scoring 3.67. In comparison with the average mean, it was also found that Airtel Digital TV, Tata Sky and Dish TV have scored below the average mean, securing only 3.13, 3.54 and 3.33 respectively in providing customers satisfaction through on demand service.

The average score on the component 'retailers response' is 4.19. Tata Sky and Videocon D2H have provided satisfaction below the average mean scoring only 4.18 and 3.67 respectively. Whereas, Sun Direct has the highest satisfaction score of 4.67 followed by Airtel Digital TV and Dish TV scoring 4.23 and 4.22 respectively in providing satisfaction to customers retails' response.

Brand Wise Overall satisfaction of the customers

Table 4 shows the overall level of satisfaction score and mean of different brands of DTH as used by the customers. The table shows that in comparison with standard mean which is 4.12, Tata Sky, Airtel Digital TV and Sun Direct have provided overall satisfaction below the average mean scoring only 4.11, 4 and 3.95 respectively. Whereas, Videocon D2H has the highest satisfaction score of 4.33 followed by Dish TV scoring 4.22 in providing overall level of satisfaction to customers through its overall service

Table 4: Brand Wise Overall Level of Satisfaction

Name of the Brand	Satisfaction Score
Tata Sky	4.11
Dish TV	4.22
Sun Direct	4
Videocon D2H	4.33
Airtel Digital TV	3.95
Average Score	**4.12**

Source: Field Survey

Feedback provided by the customers for the improvement of DTH service

As the questionnaire consisted mainly of close ended questions, so, a chance was given to the respondents through an open ended question which asked them to suggest some steps to be initiated by the DTH brand they are using, to enhance maximum satisfaction to the customers. Accordingly the respondents suggested one or two step(s) which they felt the DTH brand should immediately in order to enhance better customer satisfaction. The feedback provided by the customers of Silchar Town for the improvements of the DTH service are shown in Table 5 as follows:

Table 5: Suggestions of the Respondents

Serial No.	Suggestions	No. of Respondents
1	Reducing the prices of both basic and additional plan.	27
2	Better customer care support.	3
3	Availability of more channels in the basic plan.	12
4	Better offers relating to additional packages, recharges etc.	5
5	Availability more regional languages in every channel.	2
6	Availability of Local Channels.	4
7	Better Value added services.	4

8	Better installation facility.	4
9	Recharge through Coupon should be available.	1
10	Providing grace period on the expiry of validity.	4
11	Better picture quality and sound clarity.	3

Source: Field Survey, .Note: Figures are non additive.

Summary of the Major Findings

The study was taken up with the objective to find out the level of Customer Satisfaction of DTH service in terms of various factors. For this purpose a structured questionnaire was prepared and information was collected from 65 respondents. After analysing their response, the findings are summarized as:

1) 16.92% respondents are fully satisfied with DTH service where only 1.54% of the respondents are dissatisfied with the overall services rendered by the DTH brand.
2) The highest percentage (72.31%) of fully satisfied respondents is in the factor, Sound Clarity whereas transmission during rough weather secured the highest percentage (29.23%) of fully dissatisfied respondents.
3) Tata sky has provided highest level of satisfaction in after installation service (3.61); whereas Dish TV in price of the basic plan (4.33), customer care service (4.33), price of the additional package (3.78), installation facilities (4.11), channel availability in basic plan (4.67), sound clarity (4.78), offers (4.33) and value added service (3.78). Sun Direct and Videocon D2H have the highest level of satisfaction in transmission during rough weather (2.98). Videocon D2H has also provided highest level satisfaction in on demand service (3.67).
4) In providing overall level of satisfaction, Videocon D2H had the highest point of 4.33; followed by Dish TV, Tata Sky ranked and Sun Direct scoring 4.22, 4.11 and 4.00 respectively. While Airtel Digital TV which had the lowest overall satisfaction scores of 3.95 was ranked fifth.
5) In response to lone open ended question, where suggestions were asked by the respondents, maximum number of respondents i.e., 27 suggested that the prices of both basic and additional plan should be reduced while 12 respondents suggested that the number of channels in basic pay should be increased.

REFERENCES:

Anderson, R. (1973) *"Consumer Dissatisfaction: The Effect of Disconfirmed Expectancy on Perceived Product Performance"* Journal of Marketing Research: Vol.10 Issue-2, pp.38-44

Armstrong and Kotler (2005), "Marketing: An Introduction" Pearsons, India.

Adak, Barun (2010) *"Indian DTH Satellite TV Services: A Comparative Study of Various DTH Satellite TV Players with Cable TV in Ghaziabad Region"* Mohan Nagar, Ghaziabad, PP 7-10

Cardozo, R. (1965), *"An experimental Study of Customer Effort, Expectation, and Satisfaction"* Journal of Marketing Research, volume-2, Issue-8, 244-249.

Dawes, R., D. Singer & Lemons, P. (1972), *"An experimental Analysis of the Contrast Effect and its Implications for Intergroup Communication and Indirect Assessment of Attitude."* Journal of Personality and Social Psychology, volume-21 Issue-3, 281-295.

East, Robert, Wright, Malcolm & Vanhuele, Marc;(2000) *Consumer Behaviour: Applications in Marketing,* SAGA publication India Pvt. Ltd, New Delhi.

Ekinci Y. & Sirakaya E. (2004). , *"An Examination of the Antecedents and Consequences of Customer Satisfaction"* pp. 189-202

Festinger, Leon, (1957) *"A Theory of Cognitive Dissonance"*, Stanford University Press.p.121

Hill, Negil, Roche, Greg and Allen, (2007) Richard *"Customer Satisfaction- The Customer Experience Through The Customer's Eyes"*, Cogent Publishing Ltd.,26York Street, London.

Jayashree, J., Sivasankar A.(2013) *"A Study on Customer Perception towards DTH Services in Coimbatore City"*, IOSR Journal of Business and Management (IOSR-JBM) Volume 8, Issue 1 (Jan. - Feb. 2013), PP 10-14

Olson, J. & Dover, P. (1979) *"Disconfirmation of consumer expectations through product trial"* Journal of Applied Psychology: Vol.64, pp.179-189.

Oliver, R. L. (1997). *"Satisfaction: A behavioural perspective on the consumer"* New York, Irwin/McGraw-Hill, India.

Peyton, R.M., Pitts, S., and Kamery, H.R. (2003), *"Consumer Satisfaction/Dissatisfaction (CS/D): A Review of the Literature Prior to the 1990s"* Proceedings of the Academy of Organizational Culture, Communication and Conflict. Vol. 7(2), pp. 42-117.

Terry G. Vavra," (1997) *"Improving Your Measurement of Customer Satisfaction: A Guide to Creating, Conducting, Analyzing, and Reporting Customer Satisfaction Measurement Programs"*. Americal Society for Quality. pp. 44-60.118

Umapathy, Sivasundaram (2007) *"Industry Analysis- DTH Industry In India"*

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December, 2013, Page: 60-74

The Short-Run & Long Run Performance of Initial Public Offerings (IPOs): The India Experience 2008-2011

Rajesh C. Jampala
Professor & Head, Department of Commerce and Business Administration, P.B. Siddhartha College of Arts & Science, Siddhartha Nagar, Vijayawada, Andhra Pradesh, India

P. Adi Lakshmi
Professor & Head, Department of Business Administration, P.V.P. Siddhartha Institute of Technology, Kanuru, Vijayawada, Andhra Pradesh, India

&

Srinivasa RaoDokku
Assistant Professor, P.V.P. Siddhartha Institute of Technology, Kanuru, Vijayawada Andhra Pradesh, India

Abstract:

This article analyses the short-run long-run performance of 146 IPOs in the Indian stock market, India from 2008 to 2009. The units of the sample are selected on the basis of companies available in the Indian stock market for three years to calculate the returns. The study finds the initial day, one month, one year, two years and three years returns of stock market index and sample companies. From the analysis of the selected IPOs, the stocks are over priced in short-run and underperformed in long-run. The initial return of the sample is -8.41% and long-term returns are -38.44. the study also compare the stock market returns and sample returns and find that, there is no correlation between stock market returns and sample returns during the study period. the wealth relative also finds that the Indian IPOs are overpriced in short-term and outperformed in long-term.

Key words: *IPOs, Returns, Index, Overpriced, Underperformed*

1. Introduction:

The Indian Capital market, since liberalisation, has undergone tremendous change and has been slowly evolving into a new, vibrant system. As an important segment of the financial sector, it plays a great role in mobilising savings and channelising them for productive purposes. Since 1980, the Indian Capital Market has grown dramatically in all respects, such as, Number of Stock Exchanges, Listed Companies, Stock Issues, Market Capitalization, Trading Volumes and Number of Shareholders.

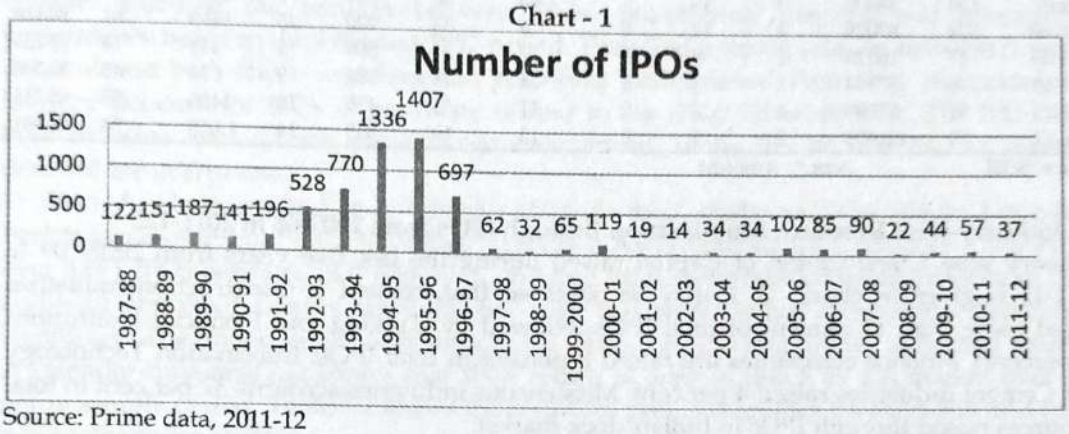
The basic motivation for the sea-change in Indian Capital Market during the recent past can be attributed to the series of efforts made by the Government of India, in the name of financial sector reforms. The financial sector reforms as an integral part of the macro-economic stabilisation and structural policies have been initiated since June 1991 with a view to raising productivity of the economy. As a part of these reforms, a large number of initiatives have been taken to restructure the banking system and a series of direct reforms have been brought out in Indian Capital Market. They include liberalised interest rate, partial convertibility of rupee, opening up Indian capital markets for Financial Institutional Investors, free pricing of primary issues, and adoption of long-term fiscal policy by the Government. The reforms have facilitated the growth of newer institutions

in addition to the revitalisation of existing ones. A new breed of institutions like Mutual Funds, Venture Capitalists, Leasing Companies, Housing Finance Companies have emerged into the Indian Financial System. In addition, a variety of newer institutions have been designed to cater to the requirements of the needy. These developments have not only given a new shape but also new yields in both capital and money markets in India.

1.1. Initial Public Offerings in India (IPOs):

Indian IPO market is the one of the fastest growing market in the world. Number public issues are increasing year by year since financial reforms. Chart - 1shows the Number of IPO issued by Indian companies from 1987 to 2012. As can be seen, most IPOs occurred during the period from 1992-93 to mid- 1996-97, which coincided with an economic reforms period. Most IPOs were listed on the Indian Stock Exchanges. These listings reached their peak in 1995-96, with 1407 new listings, and numbers of IPOs are low in the year 2002-03. After financial crisis the number of IPOs are come down and during the year 2001-12, only 37 companies raised capital from stock market.

Chart - 1

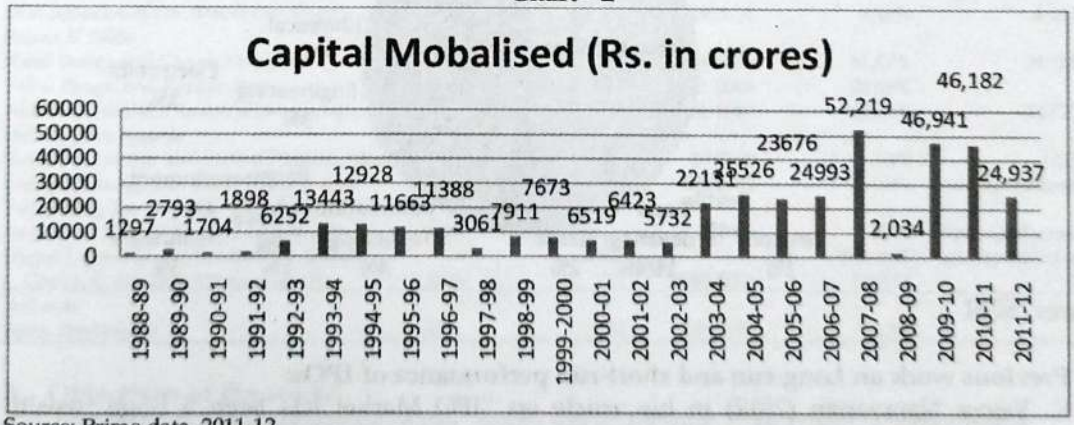


Source: Prime data, 2011-12

1.2. Amount mobilized through IPOs in India:

The growth of India capital market since 1988-89 has been presented in Table I.2. The amount and number of new capital issues by the private corporate sector which were growing up from Rs.1297 crores in the 1988-89 to Rs.13443 crores in the year1993-98, and to Rs.22151 crore in 2003-04, have substantially raised to a magic figure of Rupees 52219crores in 2007-08. During the year 2011-12, companies are mobilised Rs.24937 crores (chart - 2).

Chart - 2



Source: Prime data, 2011-12

1.3. Size-wise Classification of Capital Rose:

Table - 1 shows the size wise classification of capital rose from the capital market in India. A total of Rs. 48,468 crore was raised in 2011-12 as compared to Rs. 33508 crore in 2006-07. Higher resource mobilization is observed for large issues. The size wise breakup reveals that an amount of Rs 46891 crore was raised in 2011-12 through issue size exceeding Rs. 100 crore whereas amount raised through issue size of Rs.10 crore-<50 crore and Rs.50 crore-<100 crore were Rs. 535 crore and Rs. 1,018 crore respectively. It may be observed that small sized issues were not encouraging in the study period. In 2011-11, there was only 2 issue by companies in the category of less than Rs 5 crore and 2 issue in the category of Rs. 5 crore-<Rs. 10 crore. During the study period Sizewise Classification of Capital raised during the last five years from 2006-07 to 2010-12.

Table 1
Size-wise Classification of Capital Raised (Rs. crore)

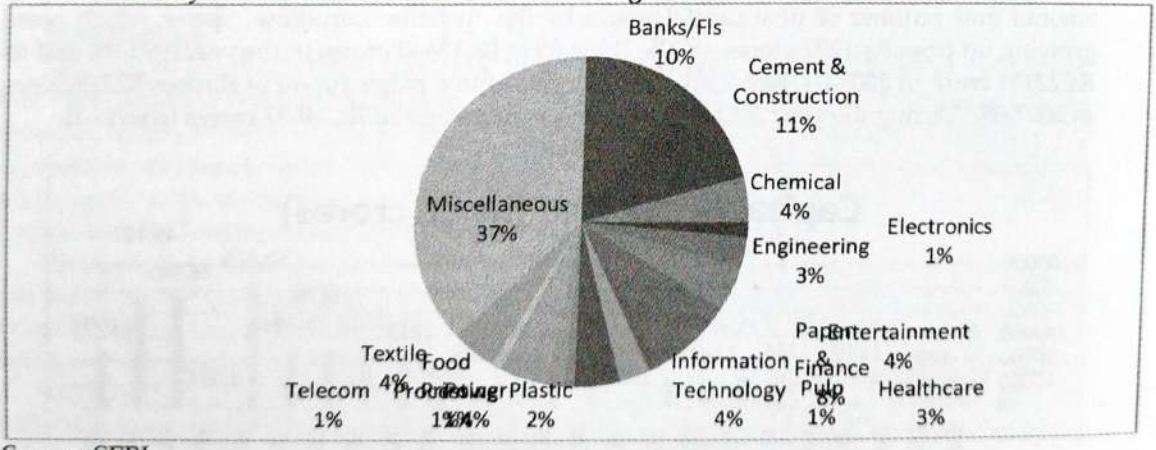
Year	Total		<5cr		5cr-<10cr		10cr-<50cr		50cr-<100cr		>100cr	
	No	Amt.*	No	Amt.*	No	Amt.*	No	Amt.*	No	Amt.*	No	Amt.*
2006-07	124	33508	3	10	6	45	40	1129	31	2386	44	29938
2007- 08	124	87029	4	16	1	6	33	920	25	1669	61	84418
2008-09	47	16220	1	3	1	7	21	509	6	445	18	15255
2009-10	76	57554	1	2	3	24	18	596	9	636	45	56298
2010-11	91	67609	1	2	2	11	13	455	20	1406	55	65735
2011-12	71	48,468	2	9	2	14	19	535	14	1,018	34	46891

Source: SEBI Amt.*: Amount

1.4. Industry-wise Resource Mobilization through IPOs from 2007-08 to 2011-12:

Industry wise Classification of Capital raised during the last five years from 2008- 09 to 2011-12 is given in chart - 3. It may be observed that, cement & Construction industries raised more than 11 percent of total IPOs followed by Banking and Financial Institutions (10percent). Finance companies are raised 8 percent in total IPOs, Information Technology and Cement Industries raised 4 per cent. Missleneous industries accounts 37 per cent in total resources raised through IPOs in Indian stock market.

Chart - 3
Industry-wise Resource Mobilization through IPOs from 2007-08 to 2011-12



Source: SEBI

2. Previous work on Long-run and short-run performance of IPOs:

R. Yegya Narayanan (2012) in his article on "IPO Market has been a huge 'wealth destroyer', Only nine of the 39 initial public offering that were floated in the year are

quoting above the issue price. The current mark-to-market value of the public issues that were offered during the year is about Rs.10,000 crore against their size of about Rs.14000 crore, resulting in a loss of Rs.4000 crore to the investors. Ibbotson (1975) reports that IPOs underperform by an average of approximately one percent per month in the second through fourth years,

Ritter's (1991) study on The Long-Run Performance of Initial Public Offerings indicates that the under-performance of IPOs extends beyond the first year of trading; a sample of 1,526 IPOs issued during 1975-1984 under performed similar size and industry firms by as much as 29% (excluding first day returns) by the third-year anniversary of their public listing.

Aggarwal and Rivoli (1990) reported in their article on "Fads in the Initial Public Offering Market?", market-adjusted returns exclusive of initial returns to be -13.7% after 250 trading days for a sample of 1,598 NASDAQ-traded firm commitment IPOs during the period 1977-1987.

Sumit Agarwal, Chunlin Liu, and S. Ghon Rhee (2008) in their article on Investor demand for IPOs and aftermarket performance: Evidence from the Hong Kong stock market" examine the relation between IPOs' pre-offering demand and aftermarket performance between the 1993 and 1997 period. They find a strong relation between investor demand and both short- and long-run post-issue performance. First, they document that investor demand for IPOs is positively related to the IPOs' initial returns. The IPOs with high investor demand are significantly underpriced, while the IPOs with low investor demand are overpriced.

Paul A. Gompers and Josh Lerner (2001), in their study on "The Really Long-Run Performance of Initial Public Offerings: The Pre-NASDAQ Evidence", consider a sample of over 3,661 IPOs between 1935 and 1972, and find underperformance when event-time buy-and-hold abnormal returns are used, but even this result is not consistently statistically significant. The underperformance disappears when they use cumulative abnormal returns. A calendar-time analysis shows that IPOs return at least as much as the market over the entire sample period. Table – 2 shows the results of previous studies on short-run and long-run performance of IPOs.

Table -2

Summary of previous works on long-run and short-run performance of IPOs

Authors	Country	Sample	Period	Performance	
				Initial returns	Long-run returns
John Affleck-Graves, Shantaram P. Hegde, Robert E. Miller, and Frank K. Reilly	USA	-	-	4.82%	-2.16%
Allen, D. E., Morkel-Kingsbury, N. J. and Piboonthanakiat, W	Thailand	150	1985 - 92	63.49%	10.02%.
John Affleck-Graves, Shantaram Hegde, and Robert E. Mille		2,096	1975-91	6.40%	-4.42%
Haini Denga and Gregor Dorfleitner	China	237	2002 -04	88.67%	59.18%
Yahui Penga, and Kehluh Wang	Taiwan	647	1996 -2003	20.59%	-
Andreas Merikas, Dimitrios Gounopoulos and Christos Nounis	Major stock exchanges	143	1984–2007	17.69%	-15.72%
Samy Ben Naceur and Hatem Ghanem (2001)	Tunisia	-	1990-99	18%	-22%
Wai-yan Cheng, Yan-leung Cheung and Yuen-ching Tse	Hong Kong	-	1935 -72	19%	underperformed
Re-Jin Guo Baruch Lev and Charles Shi	USA	-	2006	20%,	Underperformed
Daniel J. Bradley and Bradford D. Jordan		3,325	-	35%-50%	underperformed
L. Cassia, G. Giudici, S.Paleari and R. Redondi	Italy	182	1985-2001	21.87%	-
Samy Ben Naceur	US	12	1992 -97	24.5%	-

3. Objectives of the study:

In specific terms, the objectives of the study are as follows. The study is intended to:

1. To know the short-term and long-term performance of selected IPOs;
2. To identify the sector wise returns during the study period;
3. To know the stock returns through comparison with stock market performance;
4. To know the market capitalization wise returns
5. To know the wealth relative of IPOs during the study period

3.1. Hypotheses of The Study:

The hypotheses tested include:

1. **Hypothesis1. Ho:** There is not significance difference between issue price and trading price at initial day of listing
2. **Hypothesis 2. Ho:** T he performance of IPOs is not a function of issue size and industries
3. **Hypothesis 3. H0**: IPOs do not significantly underperform the market in the long run.
4. **Hypothesis 4. Ho**: There is no significance difference between stock returns and stock market index returns
5. **Hypothesis 5. Ho:** the IPOs are underpriced in short-time and underperformed in long-time.

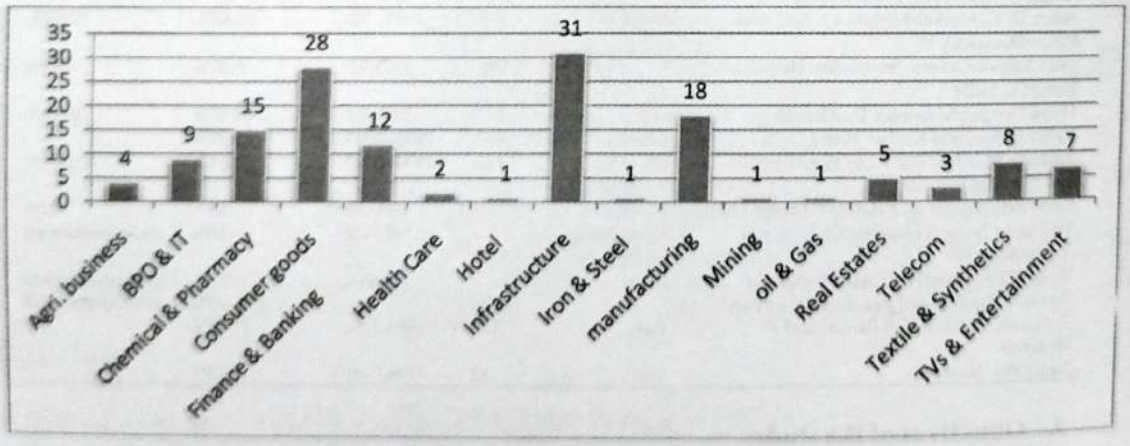
4. Data and Methodology

The sample covers the IPOs which came to market from 2007 to 2008, which is the period before the global financial crises. More than 200 companies raised capital through IPOs and based on the availability of data 146 companies were chosen for the study. The research methodology in detail was presented in the following section.

4.1. Data and Sample Construction

The initial sample is comprised of 146 IPOs listed in the Indian Stock Exchange between 2008 and 2009. All initial public offerings having the required data; offering date and price, available were included. The units of the sample are selected on the basis of companies available in the Indian stock market for three years to calculate the returns. The study finds the initial day, one month, one year, two years and three years returns. The stratification and selection of the sample is given in Chart - 4.

Chart – 4
Sample distribution of the study



4.2. Descriptive statistics of the study:

The main objective of the study is to identify the long-run and short -run performance of IPOs in Indian stock market. The study considered all companies which are issued capital during 2007 and 2008. Base on availability of data for three years returns calculation we considered 146 companies for this study. **Table - 3** shows, the descriptive statistics of the distributions on IPO firm in terms offer price and market capitalization. The total mean IPO price of the sample is Rs. 196.01 and with standard deviation of 181.49. The minimum issue price is Rs.10 and Maximum issue price is Rs. 825. Mean market capitalization of IPOs are 2424.29 crore and minimum capitalization is 2.15 crore and maximum capitalization is 60565.5 crore with a standard deviation of Rs. 8317.661 crores.

Table -3
Distribution of Samples for study

	Mean	Standard Deviation	Skewness	Minimum	Maximum	Median
Offer Price (Rs.)	196.0137	181.49	1.5119	10	825	132.5
Market Capitalization in Crores.	2424.29	8317.661	4.96	2.15	60565.5	133.36

4.3. Data Analysis :

Against the principal objective of evaluating the Indian IPO market in long-run and short-run, the data have been analyzed and the initial returns from IPOs have been worked out considering the difference between the price and the listing date market price. The study has annualized these returns giving due importance to the listing delays. Both short run and long run returns have been calculated to find out the patterns involved and to establish the extent of 'underpricing' if any, involved in it.

4.4. Statistical Tools Employed:

In order to analyze and evaluate the data, different statistical tools and techniques are used. The study uses Mean, mode, Standard deviation, Kurtosis, f-statistic, Stock Index Returns, Correlation, t test , wealth relative, Analysis of variance (ANOVA), etc.,

4.5. Period of the Study:

The IPOs issued during 2007 and 2008 are taken for the purpose of the present study. For evaluating the performance of IPOs, three year time duration was considered essential from the date of listing, thus making the total period of study to range from 2006 to 2011. The data on fundamental variables like Market Capitalization, 1st day returns, 1st month return, 12 months returns, 24 months returns and 36 months returns of Sample IPOs and Stock market index (BSE Index).

4.6. Sources of Data:

Mainly the data is collected from moneycontrol.com, National Stock Exchange of India (NSE), Bombay Stock Exchange (BSE), Security Exchange Board of India SEBI), etc.,

4.7. Limitations:

The study has not taken all the IPOs that were issued during 2007 and 2008. It limits itself only to the companies which are available for trading for three years in the stock market. The study doesn't consider other factors like risk; market returns, sales of the companies etc., the study consider only returns to know the Short - Run and Long-Run Performance of Initial Public Offerings in India.

4.8. Presentation of the Paper:

The paper was divided in to five Sections. Section I presents the introduction and performance of number of IPOs, the amount mobilized from stock market, and sector wise capital mobalisation. Section II presents the previous finding of different authors on long-tern and short-term performance of IPOs. Objectives and hypothesis of the study are presented in section III and Methodology of the paper presented in the section IV. Section V presents the testing of hypothesis and last section gives the conclusion for the study.

5. Testing of Hypothesis:

5.1. Hypothesis1. Ho: There is not significance difference between issue price and trading price at initial day of listing

Market adjusted returns of IPOs:

Table - 4 shows the market adjusted returns of IPOs in Indian stock market. The market adjusted return means are decreasing from 104.52 in initial day of listing to 61.45 after 36 months of listing and at the same time the median is decreased from 97.23 to 41.03. The standard deviations of market adjusted returns are decreased from 63.69 to 54.54. The minimum market adjusted returns are 1.23 after 24 months after listing and maximum market adjusted returns are 564 per cent after 12 months after listing.

Table- 4

Market Adjusted Returns for Initial Public Offerings, 2008-2011

Time	Nb	Mean	Median	Standard Deviation	Mini. Return	Max. return	Kurtosis	Skewness	Stock returns
Day 1	146	104.52	97.23	63.69	2.88	386	4.24	1.50	-8.41
Month1	146	98.27	84.26	77.30	3.8	564	12.24	2.83	-12.33
Year 1	146	78.80	53.29	74.68	3.7	373	4.43	2.02	-38.62
Year 2	146	62.74	44.69	57.50	1.23	411	12.57	3.02	-49.14
Year 3	146	61.45	41.03	54.52	1.54	292	2.59	1.62	-38.44

Table also shows 146 sample companies short-run and long-run returns in Indian stock market. The IPOs are underperforming from 8.41 per cent in initial day of listing to 38.44 per cent after 36 months of listing. The stock underperformance is very high after 2 years of listing (49.14 per cent). From the analysis of IPOs, the stocks are over priced in short-run and underperformed in long-run.

Aftermarket Performance of IPOs:

Table- 5 shows the correlation between issue price and aftermarket performance of IPOs during the study period. The correlation between issue price and aftermarket performance is varies from 0.653 in initial day of listing to 0.395 after 36 months of listing. The investors lost more than 60 per cent of their investment in stock market during the three years of stock holding period. From this analysis it is clear that, there is no relation between issuing price and aftermarket performance of IPOs in Indian stock market. Hence reject the **Hypothesis1-Ho**

Table - 5
After market performance of Indian IPOs

Correlations

	Issue Price	price of the share at first day	share price after one month	share price after one year	share price after two	share price after three years
Issue Price	1	.653**	.617**	.404**	.453**	.395**
price of the share at first day	.653**	1	.949**	.664**	.683**	.671**
share price after one month	.617**	.949**	1	.702**	.640**	.668**
share price after one year	.404**	.664**	.702**	1	.726**	.605**
share price after two	.453**	.683**	.640**	.726**	1	.768**
share price after three years	.395**	.671**	.668**	.605**	.768**	1

**. Correlation is significant at the 0.01 level (2-tailed).

5.2. Hypothesis 2. Ho: T he performance of IPOs is not a function of Issue Size & industries

Market capitalization wise returns:

During the study period, small IPOs (which market capitalization between 0-100crores) are under priced by 4.4 per in initial day of listing and under performed by 28.59 per cent after 12 months of listing. the companies which market capitalization is more than 101 crores are under performance is more than 10 per cent in initial day of listing and more than 33 per cent after one year of listing. The average one year stock returns are - 38.79 per cent and more than 60 per cent of the IPOs over priced in short-term and underperformed in long-run (table - 6).

Table -6
Market Capitalisation wise returns

Short term returns by the market capitalization wise

Market capitalization wise (crore)	Number of Issues	Initial day returns	One month returns	One year returns
0-100	68	4.40	-5.59	-28.59
101-500	34	-12.69	-15.50	-46.84
501-1000	12	-8.95	-14.68	-48.94
1001-5000	22	-14.84	-16.25	-36.08
5001 and above	9	-9.97	-3.037	-33.50

Industry wise short-term returns:

Table - 7 shows the sector wise returns of IPOs in short-run. Out of 14 sector IPOs, only 4 sectors are yielding positive returns at initial day of listing (Agr., BPO&IT, Hotel, Manufacturing) and other sectors are underperforming. Consumer Goods, Mining, Telecom, TV & Entertainment industries are overpriced by more than 25 per cent and they are underperformance is more then 20 per cent after 12 months of listing. The analysis also find that, total 146 sample IPOs are overpriced by 8.41 per cent in initial day of listing and underperformed by 38.62 per cent after one year of listing. After 12 months of listing only 3 sectors are yielding positive results namely, Agri. Hotel and Real estate sectors.

Table -7
Sector wise returns of Indian Initial Public offerings

Sl No	Industry	No. of companies	1st Day	1st Month	1st year
1	Agri. business	4	25.28063	17.33	32.994
2	BPO & IT	9	18.72595	17.32	-10.42
3	Chemical & Pharmacy	15	-21.2595	-37.65	-49.54
4	Consumer goods	28	-25.3167	-30.31	-44
5	Finance & Banking	12	-15.5109	-9.32	-49.7

6	Health Care	2	-7.19178	-13.12	-22.4
7	Hotel	1	40	26.625	4
8	Infrastructure	31	-0.20878	-7.285	-57.35
9	Iron & Steel	1	-3.42857	-28.5	-53.86
10	manufacturing	18	3.00624	-5.735	-43.32
11	Mining	1	-35.9259	-84.97	-89.3
12	oil & Gas	1	-14.375	-13.34	-4.5
13	Real Estates	5	-2.22992	-10.39	4.9417
14	Telecom	3	-27.4242	-30.78	-48.43
15	Textile & Synthetics	8	-0.36031	13.91	-0.161
16	TVs & Entertainment	7	-36.7011	-21.55	-22.64
	Total	146	-8.41	-12.33	-38.62

Market Capitalization wise long-run performance:

Table - 8 shows the market capitalization wise long-run returns of selected IPOs during the study period. The small IPOs (which market capitalization is between 0 -100 crore) underpriced in short-run (by 4.40 per cent) and highly underperforming (62.102 per cent) in long-run when compare to other issues. Though the large issues (market capitalization is more than 1000 crores) are overpriced in short-run but their under performance in long-run are very low when compare to other companies.

Table- 8

Long-rung performance of IPOs by Market Capitalization wise, 2008-2011

	Long-run returns by the market capitalization wise		
Market capitalization wise (crore)	Number of Issues	Two years	Three years
0-100	68	-52.772	-62.1056
101-500	34	-61.085	-48.8999
501-1000	12	-59.531	-43.4343
1001-5000	22	-33.809	-10.9709
5001 and above	9	-33.055	-22.4826

Long-run performance of IPOs:

Table - 9 shows the sector wise long-run returns of selected IPOs during the study period. Out of 16 sectors only 4 sectors are producing positive results and reaming 12 sectors are underperforming. The overall underperformance in one year is 49.14 per cent and 38.44 per cent in 3 year after listing. This table it is also finds that there is a significance difference between sector wise returns. Agri. BPO&IP, Health care and Real Estate sectors are performing well in long-run and the underperformance o f Consumer goods, mining, telecom, textile &synthetic, TV& Entertainment sectors are more than 50 per cent. Hence reject the Hypothesis 2. Ho and we conclude that IPO performance is the function of Industry and market capitalization.

Table -9

Sector wise returns of Indian Initial Public offerings

Sl No	Industry	No. of companies	2nd year	3ed year
1	Agri. business	4	-4.459	2.272251
2	BPO & IT	9	-19.27	32.05248
3	Chemical & Pharmacy	15	-31.97	-44.4003
4	Consumer goods	28	-70.75	-52.8048
5	Finance & Banking	12	-57.06	-39.247
6	Health Care	2	-37.5	20.34247
7	Hotel	1	118.5	-18.13
8	Infrastructure	31	-47.27	-34.814
9	Iron & Steel	1	-72.44	-69.8571

10	manufacturing	18	-54.37	-45.916
11	Mining	1	-91.15	-98.8519
12	oil & Gas	1	4.5	90.90625
13	Real Estates	5	-17.83	-44.706
14	Telecom	3	-47.28	-59.4831
15	Textile & Synthetics	8	-58.42	-66.6218
16	TVs & Entertainment	7	-79.43	-77.7953
	Total	146	-49.14	-38.44

5.3. Hypothesis 3. H0: IPOs do not significantly underperform the market in the long run.

Long-term and short-performance of IPOs:

Table - 10 shows ANNOVA between issue price and after market performance. The calculated "f" value is varies from 7.596 in initial day of listing to 3.41 after 3 years of listing. Since calculated value of 't' is grater than table value, hence reject the Ho. From this analysis it is clear that there is no relation between issue price and after market performance. Total IPOs are underperforming in short-term as well as long-run. Hence reject the **Hypothesis 3. H0**

Table - 10

Long-term and short-performance of IPOs

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
price of the share at first day	Between Groups	5255447.604	93	56510.189	7.596	.000
	Within Groups	386828.034	52	7439.001		
	Total	5642275.639	145			
share price after one month	Between Groups	5454435.126	93	58649.840	6.069	.000
	Within Groups	502494.105	52	9663.348		
	Total	5956929.231	145			
share price after one year	Between Groups	3210243.313	93	34518.745	1.760	.014
	Within Groups	1019997.870	52	19615.344		
	Total	4230241.183	145			
share price after two	Between Groups	2167575.652	93	23307.265	1.483	.061
	Within Groups	817394.349	52	15719.122		
	Total	2984970.001	145			
share price after three years	Between Groups	3461571.923	93	37221.203	3.441	.000
	Within Groups	562541.932	52	10818.114		
	Total	4024113.855	145			

5.4. Hypothesis4. Ho: There is no significance difference between stock returns and stock market index returns

Market Adjusted returns of IPOs:

Table - 11 shows the market adjusted returns of IPOs during the study period. the market index (BSE Index) returns are varies from -0.34 per cent in initial day of listing to 26.93 per cent at 3 year of listing and at the same time the sample returns (146 IPOs) are -8.41 to -38.44. the market adjusted returns are varies from 104.52 at initial day of listing to -61.45 per cent after 3 year of listing. From this analysis it is clear that there is no significance relation between stock returns and index returns. The stock market is producing positive returns but the sample IPOs are yielding negative results; it may be poor quality of IPOs during the study period

Table - 11
Market adjusted returns

Time	Stock market returns	Stock returns	Market adjusted returns
Day 1	-0.34	-8.41	104.5201
Month1	19	-12.33	-98.28
Year 1	10.28	-38.62	-78.80
Year 2	9.74	-49.14	-62.75
Year 3	26.93	-38.44	-61.45081

Table -12 shows the correlation between stock index returns and sample returns during the study period. The correlation is various from -0.027 in initial day of listing to 0.052 in 36 months after listing. The initial day of listing and first month returns negative correlation. From this analysis it can conclude that, there is no correlation between stock market returns and sample returns during the study period. Hence reject **Hypothesis 4. Ho.**

Table - 12
Correlation between stock index returns and sample returns

Time	Correlation
Day 1	-.027
Month1	-.011
Year 1	.322
Year 2	.183
Year 3	.052

5.5. **Hypothesis 5. Ho:** the IPOs are underpriced in short-time and underperformed in long-time.

Wealth relative:

Table -13 shows the wealth relative of IPOs during the study period. Wealth relatives are also calculated using the procedure employed by Ritter and Levis. A wealth relative of greater than 1.00 indicates IPOs outperforming the market benchmark, while a value below 1.00 indicates IPO underperformance. From the analysis of IPOs the wealth relative is varies from 10.07 in initial day of listing to -2.40 after three years of listing. The IPOs in Indian stock market are outperformed in initial day of listing and started underperforming from initial month of listing. The under performance is from -1.11 to -2.40 at 3 years of listing. Hence, reject the **Hypothesis 5.**

Table - 13
Wealth relative

Time	Wealth Relatives
Day 1	10.07
Month1	-1.11
Year 1	-3.10
Year 2	-5.90
Year 3	-2.40

6. Conclusion:

This study examined the short-run long-run performance of Indian initial public offerings listed during 2008-2011 and feasible explanations for their aftermarket performance. The average initial return for the sample of 146 IPOs is -8.41%. The average market adjusted returns are 104.52 per cent in initial day of listing and it significantly decreased during the study period. The cumulative adjusted return at the end of three year anniversary is -38.44%, it is also not statistically significant with issuing price. While there is significant evidence

that Indian IPOs overprice in initial day of listing and underperformed in long-run. Agri. BPO&IP, Health care and Real Estate sectors are performing well in short-run as well as long-run and the underperformance of Consumer goods, mining, telecom, textile &synthetic, TV& Entertainment sectors underperformance is more when compare to other sectors during the study period. Regression analyses provide some evidence supporting the previous results. There is no significant relation between issue price and market performance and the investors lost more than 60 per cent of their investment in stock market during the three years of stock holding period. The stock market is producing positive returns but the sample IPOs are yielding negative results; it may be poor quality of IPOs during the study period.

REFERENCES:

Allen, D. E., Morkel-Kingsbury, N. J. and Piboonthanakiat, W.(1999) 'The long-run performance of initial public offerings in Thailand', Applied Financial Economics, 9: 3, 215 – 232.

ASSOCHAM & PricewaterhouseCoopers (2010), "Capital Market - Growth with Governance, PricewaterhouseCoopers, 2010.

B. Husson and B. Jacquillat, "Sous-evaluation des titres et methods d'introduction au second marche (1983-1986),"Finance (December 1990), pp. 123-134.

Business Standard (2010), "Enhanced governance, key for growth in Indian Capital market: PwC & ASSOCHAM Study" Business Standard, Announcement / Corporate, February 11, 2010.

Daniel J. Bradley and Bradford D. Jordan, Partial Adjustment to Public Information and IPO Underpricing, Journal of Financial and Quantity Analysis, Vol. 37, No.4, December 2002.

EmreUnlu, Stephen P. Ferris and Gregory Noronha, IPO underpricing over time: evidence from the UK, Applied *Economics Letters*, 2004, 11, 5–9.

Equitymaster (2012), *"IPOs no longer attract investor interest"* Equity master (2012), Yahoo money, 31st August, 2012.

Francis Boabang, The Opening, Short, Medium and Long Term Performance of Canadian Unit Trust Initial Public Offerings (IPOs), Journal of Business Finance & Accounting, 32(7) & (8), September/October 2005, 0306-686X.

F.J. Finn and R. Higham "the Performance of Unseasoned New Equity Issues: Common Stocks Exchange Listing in Australia" *Journal of Banking and Finance* (September 1998), pp. 333-351.

Gleason, K. , Johnston, J. and Madura, J.(2008) 'What factors drive IPO aftermarket risk?', Applied Financial Economics, Vol. 18: Issue No. 13, P.No.1099 – 1110

HainiDenga and GregorDorfleitner, "Underpricing in Chinese IPOs - some recent evidence" Applied Financial Economics, 2008, 18, 9–22.

J.K. Sachdeva "Business Research Methods" Himalya Publishing House, New Delhi, 2011.

John Affleck-Graves, Shantaram Hegde, Robert E. Mille, Conditional Price Trends in the Aftermarket for Initial Public Offerings, inancial Management, Vol. 25, No. 4 (Winter, 1996), pp. 25-40.

J. Ritter, "The Long-Run Performance of Initial Public Offerings," *Journal of Finance* (June 1991), pp. 3-27.

Khurshed, Arif and Mudambi, Ram (2002) 'The short-run price performance of investment trust IPOs on the UK main market', Applied Financial Economics, 12: 10, Page No. 697 – 706.

L. Cassia, G. Giudici, S.Paleari and R. Redondi, IPO underpricing in Italy, Applied Financial Economics, 2004, 14, 179–194.

Loughran, T. and Ritter, J. (2002) Why has IPO underpricing changed over time? Working Paper, University of Florida.

L. Cassia, G. Giudici, S.Paleari and R. Redondi, IPO underpricing in Italy, Applied Financial Economics, 2004, 14, 179–194

Naceur, Samy Ben (2000) 'An examination of the Tunisian IPO pricing in the short and long run: 1992-1997', *Applied Economics Letters*, Vol.7: Issue: 5, PP, 293 -296.

NSE (2012), Fact Book2011, National Stock Exchange of India Ltd. (NSE), Mumbai, 2012.

NSE (2008), Indian Securities Market, National Stock Exchange of India Ltd. (NSE), Mumbai, Volume XI 2008.

Merikas, Andreas , Gounopoulos, Dimitrios and Nounis, Christos(2009) 'Global hipping IPOs performance', Maritime Policy & Management, Vol. No. 36: Issue No. 6, Page No. 481 – 505.

M. Levies, "The Long Run Performance of Initial Public Offerings: The UK Experience 1980-1988," *Financial Management* (Spring 1993), pp.28-41.

Mario Levis (1993) "The Long-Run Performance of Initial Public Offerings: The UK Experience 1980-1988", Financial Management, Vol. 22, No. 1 (spring, 1993), pp. 28-41.

Purnanandam, Amiyatosh K., and Bhaskaran, Swaminathan, 2004, Are IPOs really underpriced? *Review of Financial Studies* 17, 811-848.

RBI (2012), Report on Microeconomic and Monetary Developments in 2011-12, Reserve Bank of India, April 16, 2012.

R. Aggarwal and P. Rivoli, "Fads in the Initial Public Offering Market?"*Financial Management* (Winter1 990), pp. 45-57.

Reena Aggarwal, Ricardo Leal, Leonardo Hernandez (1993), "The Aftermarket Performance of Initial Public Offerings in Latin America" Financial Management, Vol. 22, No. 1 (spring, 1993), pp. 42-53.

Re-Jin Guo Baruch Lev and Charles Shi, Explaining the Short- and Long-Term IPO Anomalies in the US by R&D, Journal of Business Finance & Accounting, 33(3) & (4), 550–579, April/May 2006, 0306-686X.

Robert E. Miller and Frank K. Reilly (1987), "An Examination of Mispricing, Returns, and Uncertainty for Initial Public Offerings", *Financial Management*, Vol. 16, No. 2 (summer, 1987), pp. 33-38.

R. Ibbotson, "Price Performance of Common Stock New Issues," *Journal of Financial Economics* (September 1975), pp. 235-272.

R.S. Bhardwaaj, "Business Statistics", Excel Books, New Delhi, 2006.

R. Yegya Narayanan "IPO Market has been a huge 'wealth destroyer', Market Watch, Business Line, December 21, 2011.

Samie Modak & Sameer Mulgaonkar "Safety net would have hit 25% IPOs since '08" Business Standard, Mumbai Oct, 23, 2012.

Samy Ben Naceur, An examination of the Tunisian IPO pricing in the short and long run: 1992 - 1997, Applied Economics Letters, 2000, 7, 293 - 296.

SEBI (2011), Annual Report, SEBI, 2012.

SEBI (2011), Handbook of statistics on the Indian security Market 2010, Security exchange board of India, 2011.

SEBI (2012), Hand Book of Statistics on the Indian Security Market, Department of Economic and Policy Analysis, Securities and Exchange Board of India, India.

SEBI (2012), Annual Report, Securities and Exchange Board of India, India, March 31, 2011.

SeshadevSahoo and PrabinaRajib (2010), "After Market Pricing Performance of Initial Public Offerings (IPOs): Indian IPO Market 2002-2006", Vikalpa, Volume 35, No.4, October-December 2010, Page: 27-43.

Susana A 'Lvarez and Vi'ctor M Gonza 'Lez "Signalling and the Long-run Performance of Spanish Initial Public Offerings (IPOs), Journal of Business Finance & Accounting, 32(1) & (2), January/March 2005, 0306-686X.

T. Jenkinson and C. Mayer, "The Privatization Process in France and UK," European Economic Review (March 1988), pp. 482-490.

Tim Loughran and Jay Ritter, Why Has IPO Underpricing Changed over Time?, Financial Management, Vol. 33, No. 3 (Autumn, 2004), pp. 5-37.

Vong, Anna P. I. and Zhao, N.(2008) 'An examination of IPO underpricing in the growth enterprise market of Hong Kong', Applied Financial Economics, Vol. No.18: Issue No. 19, Page No. 1539 – 1547.

Yahui Penga, and Kehluh Wang, "IPO underpricing and flotation methods in Taiwan - a stochastic frontier approach", Applied Economics, 2007, 39, 2785–2796.

Wai-Yan Cheng, Yan - Leung Cheung and Ka-Kit Po, A Note on the Intraday Patterns of Initial Public Offerings: Evidence from Hong Kong, Journal of Business Finance & Accounting, 31(5) & (6), June/July 2004, 0306-686X.

BSEindia.com

NSEindia.com

moneycontrol.com

Annexure
List of sample companies

Sl. No	Company	Sl. No	Company
1	Brigade Enterp	86	C & C Construct
2	eClerx Services	87	Transwarranty
3	Transformers	88	Power Finance
4	Jyothy Labs	89	Firstsource Sol
5	Kaushalya Infra	90	House of Pearl
6	Kolte-Patil	91	Redington
7	Renaissance Jew	92	Cinemax Prop
8	Edelweiss Fin	93	TechnocraftInd
9	Adani Ports	94	PochirajuInd
10	Empee Distiller	95	TV18 Broadcast
11	Allied Computer	96	Cambridge Tech
12	Rathi Bars	97	Hubtown
13	Barak VallyCem	98	AutolineInd
14	VarunIndustrie	99	Lumax Auto Tech
15	ReligareEnterp	100	Ashtavinayak
16	Circuit Systems	101	Cairn India
17	ILandFSEngg	102	Tanla Solutions
18	Saamya Biotech	103	Pyramid Saimira
19	Supreme Infra	104	Alkali Metals
20	Dhanus Tech	105	Chemcel Biotech
21	Consolidated Co	106	20 Microns
22	Koutons Retail	107	Austral Coke
23	Power Grid Corp	108	Resurgere Mines
24	Kaveri Seed Co	109	Nu Tek India
25	Magnum Ventures	110	Coral Hub
26	Indowind Energy	111	Birla Cotsyn
27	MotilalOswal F	112	Somi Conveyor
28	Puravankara Pro	113	KSK Energy Vent
29	KPR Mill	114	Lotus Eye Care
30	Take Solutions	115	First Winner
31	Asian Granito I	116	Archidply Indus
32	SEL Manufacturi	117	Avon Corporatio
33	Central Bank	118	Sezal Glass
34	RefexRefrigera	119	BafnaPharma
35	Zylog Systems	120	Niraj Cement
36	IVRCL Assets	121	Anus Labs
37	OmnitechInfoso	122	GokulRefoils
38	Omaxe	123	Aishwarya Tele
39	AlpaLaboratori	124	Kiri Industries
40	Simplex Project	125	Titagarh Wagons
41	EveronnEdu	126	Sita Shree Food
42	Allied Digital	127	Gammon Infra
43	HDIL	128	V-Guard Ind
44	Suryachakra	129	Rural Elect Cor
45	Spice Comm	130	GSS Infotech
46	Celestial Labs	131	Tulsi Extrusion
47	Ankit Metal	132	IRB Infra
48	Roman Tarmat	133	Bang Overseas
49	DLF	134	Shriram EPC
50	V2 Retail	135	OnMobile Global
51	MeghmaniOrgani	136	KNR Construct
52	Nelcast	137	Cords Cable Ind
53	Decolight Ceram	138	J Kumar Infra

54	Glory Polyfilms
55	Time Techno
56	Nitin Fire Prot
57	Asahi Songwon
58	MIC Electronics
59	Insecticides In
60	Binani Cement
61	Hilton Metal
62	BhagwatiBanque
63	Fortis Health
64	Advanta
65	ICRA
66	Orbit Corporati
67	Sancia Global
68	Astral Poly Tec
69	Lawreshwar Poly
70	Jagjanani Text
71	AMD Industries
72	Abhishek Corp
73	Page Industries
74	Raj Television
75	Mudra Lifestyle
76	Idea Cellular
77	Euro Ceramics
78	VTX Industries
79	Indus Fila
80	Oriental Trimex
81	Evinix
82	MindTree
83	Broadcast
84	Indian Bank
85	SMS Pharma

139	Reliance Power
140	Future Capital
141	Porwal Auto
142	Precision Pipes
143	Aries Agro
144	Manaksia
145	BGR Energy
146	Burnpur Cement

International Journal of Applied Management Research,
ISSN: 2347-2839, Vol. 1(No. 2), December 2013, Page: 75-99

E-Commerce in Syria: Overall ICT Perspective

J. U. Ahmed
Professor & Head, Department of Management, North Eastern Hill University, Tura Campus, Chandmari , Tura-794002, Meghalaya, India.
&
Hassan Hasan
Research Scholar, Department of Management, North Eastern Hill University, Tura Campus, Chandmari, Tura-794002, Meghalaya, India.

Abstract:

Recognizing the potential of applying ICT to improve both social and economic development, Syria has taken steps to develop its digital economy. However, the volume of e-commerce in Syria's local markets is still low in comparison with worldwide online markets or even with the online regional and the Arab markets. In connection with Syria's profile, this paper provides a comprehensive overview of trends and developments in Syria's ICT market. The paper analyses the fixed-telephony services, mobile-cellular services, fixed Internet, mobile-broadband services, and wireless networks in Syria. In addition, this paper will measure the national ICT readiness in Syria. Out of this overall revision, some of the major ICT challenges for e-commerce growth in Syria are highlighted. Furthermore, recommendations for developing ICT and e-commerce in Syria are suggested.

Key Words: *Electronic commerce, Syria, ICT, ICT Readiness.*

1. Introduction

In the last decade, the growth and generalization of Internet use has made it possible to increase sales through e-commerce web sites. Nevertheless, although global e-commerce sales have been steadily increasing during the past years, total revenue has been lower than anticipated by forecast reports [33] [51] and some barriers for e-commerce have been identified [34]. Arguably, e-commerce has a potential to add a higher value to businesses and consumers in developing countries than in developed countries [47]. Yet most developing countries, including the Arab world, have failed to reap the benefits offered by modern information and communication technologies. In fact, the Arab world plays a relatively minor role in the rapidly changing geographies of global cyberspace. Furthermore, the Arab e-commerce is still in its infancy [82]. The Arab world is generally involved in the Internet economy as produces, rather than consumers [27]. Despite the fact that there is a rapid rise of electronic commerce in the Twenty- First Century, many developing countries including Syrian Arab Republic have not started yet to catch up with the tremendous benefits of e-commerce [76]. Although, the concept of e-commerce has become popular among Syrian sellers and buyers, e-commerce in Syria is still limited and not effective. The volume of e-commerce in Syria's local markets is still low in comparison with worldwide online markets or even with the online regional and the Arab markets. In fact, the traditional ways of selling and buying are still prevailing in the Syrian market [2].

In fact, the infrastructure is the back-bone or supporting complexes that are in place to promote implementation, communication, and usage of networks [3]. Also, the status of ICT

adoption of an economy is an indicator of its potential ability to exploit the economic opportunities afforded by the new technologies –or more generally, its prospects for transition to the "New economy" [57]. Telecommunications infrastructure (network), computers and a range of related Internet technologies are the key components of e-commerce infrastructure in the twenty-first century [45]. A resilient infrastructure is needed for e-commerce to flourish [3]. However, evidently, relatively low level of Internet penetration and related services in Syria led to backwardness in the sector of e-commerce. But, last initiatives have stipulated some success in this sector. Thus, ARCHIMEDES was one of the programmes launched as a tool to support the trade institutions in Syria. Mainly, the project focused on information technologies and e-commerce as tools for a modern development of the local Mediterranean companies' business co-operation skills with companies from the European Union. The programme was designed by the European Union (EU) to strengthen the relations between the Chambers of Commerce and Industries (CCI) on all sides of the Mediterranean as an initiative under the EU's financial instrument for the Euro-Mediterranean Partnership (MEDA) programme to contribute to EU-Med Free Trade Zone [61]. In addition, the E-commerce project was one of the suggested projects of EUMEDIS Programme [40]. In fact, the Euro-Mediterranean Information Society Initiative (EUMEDIS) project focuses on the modernisation of the most strategic sectors and reinforces support tools and methodologies. It aims at contributing towards the development and modernisation of the Euro-Mediterranean Information Society, and thus brings about economic development, improve quality of life and promote understanding of the benefits of e-commerce [15]. The project of e-commerce in Syria would help in extension of commercial traffic inside and outside the region and would help also in popularizing its products, marketing and developing the commercial style by using information technologies in addition to increase the telecommunication traffic and technology through the use of national internet network[40].

On the other hand, recognizing the potential of applying ICT to improve both social and economic development, Syria has taken steps to develop a digital economy. E-government services are available, with a national e-government policy which is in the place to guide developments. To support e-health development; public funding has been made available for ICT equipment, software, pilot projects, skills training and scholarships. E-health initiatives also have been extended to the mobile sector (m-health) [23]. In addition, the National ICT Strategy for Socio-Economic Development in Syria from 2004 contains a ten-year work program, two work plans for the Ministry of Communications and Technology (MOCT) and five initiatives shared with other ministries [4]. This includes the provision of computers for all institutions, high-quality communication services, such as fixed-line telephony, Internet, and mobile coverage, as well as the dissemination of ICT knowledge and literacy [20]. The Indicators of Information Society in Syria in the year 2004 showed clearly that the Syrian government has introduced many initiatives and projects such as: E-Signature-Legislation Project, Intellectual Property Protection Project and the National Programme for promoting information technology initiative [77]. Furthermore, in 2012, the Syrian government approved the setting up of a state-owned company for e-payment services in Syria [12]. Other important initiatives and plans have been taken with regard to the development of ICT sector in Syria. In terms of digital media, the Ministry of Information has plans to start the switch of terrestrial channels from analogue to digital by mid-2011. Also, in terms of Arabic digital content, the Ministry of Communications and Technology initiated the E-government Gate to help provide online services in cooperation with several state ministries and institutions. The project envisages to set up portals and public online services to serve as main access points for both citizens and government agencies. With regard to cyber security, the National Agency for Network Services (NANS)

founded the Information Security Center (ISC), which has the mission to build cyber security capabilities and increase the capacity of security incident detection and emergency responses to such incidents. Moreover, the agency is responsible for ensuring cyber security awareness in both private and public sectors. Finally, in terms of open source software, the Syrian Computer Society (SCS), established in 1989, has conducted training workshops and lectures to support the use of Free and Open -Source Software (FOSS) [37]. Although, there have been initiatives, projects and plans related to ICT sector introduced to the public in Syria, there is still a lack of conducting out financial transactions on the Internet by both consumers and companies[77].

Unfortunately, there is very little information available about the Internet, e-commerce and ICT in Syria and much of that is inaccurate and not reliable. This paper reviews the trends and developments in Syria's ICT market. In addition, this paper will measure the national ICT readiness in Syria. Out of this overall revision, some of the major ICT challenges for e-commerce growth in Syria are highlighted. Furthermore, recommendations for developing ICT and e-commerce in Syria are suggested.

2. Syria's Country Profile: An Overview

Syria was the centre of the Islamic Empire. It covers an area that has seen invasions and occupations over the ages, from Romans and Mongols to Crusaders and Turks. Syria, a country of fertile plains, high mountains and deserts, is also a home to diverse ethnic and religious groups, including Kurds, Armenians, Assyrians, Christians, Druze, Alawite Shias and Arab Sunnis, the last of who make up a majority of the Muslim population. Modern Syria gained its independence from France in 1946, but has lived through periods of political instability driven by the conflicting interests of these various groups [19]. Modern Syrian culture is based on the Islamic faith and civic Arab tradition. Strong moral and ethical values are placed on family, religion, education, self discipline and respect [44]. However, the political crisis has seen both the development and expansion of civil society as well as major disruptions to social relations and the spread of extremism and intolerance. Social norms and values have been negatively affected, and the country has seen divisions whereby different groups have hardened positions of hate and revenge towards the 'Other'. This represents a substantial loss to Syrian social and cultural capitals and increases the risks of the unity of the state and emerges pre-state ties, which will be eventually difficult to compensate [59].

Syria's total area is 185000.180 square kilometres [71]. The location of Syrian Arab Republic is in the Middle East [67]. Syria shares a northern border with Turkey, in the east and southeast with Iraq, in the south with Jordan and in the west with Lebanon and Israel. Syria's most contentious boundary is with Israel, where the latter has occupied Syrian territory, the Golan, since 1967. Israel formally annexed the Golan in 1981. Syria also has a short Mediterranean coastline of some 193 km between Lebanon and Turkey [70]. Arabic is the official language. Several modern Arabic dialects are used in everyday life, most notably Levantine in the west and Mesopotamian in the northeast. Kurdish (in its Kurmanji form) is widely spoken in the Kurdish regions of Syria. Armenian and Turkish (South Azeri dialect) are spoken among the Armenian and Turkmen minorities. Before the advent of Arabic, Aramaic was the lingua franca of the region and is still spoken among Assyrians and Classical Syriac is still used as the liturgical language of various Syriac Christian denominations. Most remarkably, Western Neo-Aramaic is still spoken in the village of Ma`loula as well as two neighbouring villages, 35 miles (56 km) northeast of Damascus[85], the capital of Syria, is believed to be the oldest continuously inhabited city in the world, and

the country's geographical location has historically made it a transit route between east and west [24]. However, many educated Syrians also speak English and French [85].

According to the official website of Syrian Central Bureau of Statistic, the population in Syria is currently around 22 million inhabitants spread into 14 different provinces [13]. The population density in 2010 is 110.2 persons per square kilometre [71]. Major populated provinces in Syria are Damascus (the capital), Aleppo, Rural Damascus, Homs, and Hama (Appendix 1) [30]. In 2010, urban population is 56% of total population (2010) and the rate of urbanization is 2.5% annual rate of change (2010-15 est.) [10]. The average growth rate of population in Syria is 2.45% yearly. This rapid growth rates generally meant relatively youthful population (Anon, 2005) [5]. Around 37.1 % of the population in Syria are less than 15 years old and only 4.1 % are 65 years and above [30]. However, the political unrest in Syria is expected to have affected the population growth rate and structure given the projected dramatic increase in mortality and voluntary migration. The report of Syrian Center for Policy Research (SCPR) estimates a decrease in the population growth rate from external refugees, internally displaced people and 2.45% in 2010 to minus 2.5% in 2012 [59].

Since March 2011, Syria has witnessed an unprecedented period of crisis and escalating violence. The regime's forceful crack-down on a popular protest in Dera'a in March 2011 which sparked a self-perpetuating cycle of protests met by increasingly violent government repression. The unrest quickly spread throughout Syria and the demands of the demonstrators escalated from a call for meaningful political reforms to an end to the Ba'ath party regime headed by President Bashar al-Assad. The bloody 17-month-old uprising de-facto evolved into a civil war with fierce fighting spreading to Aleppo and Damascus [62]. At least 93,000 people had been killed in Syria since the start of the conflict, according to the latest United Nations figures. This represents a rise of more than 30,000 since the United Nations (UN) last issued figures covering the period to November 2012. But it says; these statistics are underestimated as it is believed that many deaths have not been reported. Over 80% of those killed were men, but the UN's Office of the High Commissioner for Human Rights (OHCHR) says it has also documented the deaths of more than 1,700 children under the age of 10[18]. The ongoing conflict in Syria is undermining development, not only inside Syria, where the human consequences of the conflict are devastating - but also across the region -said the United Nations Development Programme (UNDP) at the launch of a US$4.4 billion humanitarian appeal for the victims of the crisis presented today by the UN in Geneva. "Conflict-affected communities in Syria and those hosting Syrian refugees in Jordan and Lebanon are in desperate need," UNDP Administrator Helen Clark stated[73]. In the wake of the protracted internal armed conflict in Syria, growing numbers of refugees, predominantly women and children, have sought refuge in Lebanon, Jordan, Turkey, Iraq and Egypt. Reception conditions vary considerably and the unabated influx of refugees is putting tremendous strain on the socio-economic and political stability of Syria's neighbouring countries. Refugees increasingly compete with the local population for housing, scarce public goods like water and electricity, food, healthcare and education. They face considerable income-expenditure gaps resulting from high rental costs, the depletion of savings and limited job opportunities [25]. Amid worsening violence inside Syria, the number of refugees - currently more than 1.5 million - is expected to continue climbing steeply and put more pressure on host countries. The coordinated Syria Regional Response Plan (RRP) is appealing for US$ 2.9 billion to cover the needs of 3.45 million Syrian refugees, 1.75 million host country nationals and 100,000 Palestine refugees from Syria in the region from 1 January to 31 December 2013 [79]. However, as the situation continues to deteriorate in Syria, the World Food Programme (WFP) is aiming to provide food, up to 7 million

Syrians in urgent need of food assistance. These include 4 million people inside Syria - on both sides of the front lines - and 2.7 million refugees in neighbouring countries [83].

Syrian Arab Republic is classified as a lower middle-income country [64], with an economy based on agriculture, oil, industry, and tourism [85]. Syria's GDP had remained dependent on the oil and agriculture sectors, which are subject to fluctuating oil prices and rainfall. The oil sector provided approximately 20% of the government's revenues and around 35% of its export receipts in 2010. The agriculture sector contributed to 20% of the GDP but less than 20% to employment. Oil exports, exports of services and foreign transfers of income and remittances were the main sources of foreign earnings -- sources which are now being seriously curtailed by the crisis [62]. It is noted that the country had been experiencing modest economic growth and reform before the uprising. The government had attempted economic liberalization, with a surge in credit growth, private banking, and trendier retail and food businesses. However, the liberalization of the Syrian economy was always stopped by the mafias surrounding the ruling family. The family was never investing their revenues into the country, but mainly were investing in the telecom sector and 'Hit-and-run' sectors."[24]. The Corruption Perceptions Index (CPI), which is developed by the International Transparency, ranks countries/territories based on how corrupt a country's public sector is perceived to be. Scores range from 0 (highly corrupt) to 100 (very clean). However, Syria's Corruption Perception Index score for 2012 is 26- in the high level category of corruption- positioning the country at 144 out of 176 countries and territories [68]. Dreher and Herzfeld (2005), in their study, estimated that Syria loses an average of USD 34 of its per capita GDP as a result of corruption. In fact, fighting corruption is a very high priority on the development agenda of many developing countries and similarly Syria is no exception. Several initiatives have been launched in the country to increase the government's transparency towards its citizens. Syrian legislators have explicitly criminalised corruption. For example, Article 31 of the Economic Criminal Law states: "The initiation of an economic crime is as a full crime. Most of the acts of corruption are considered economic crimes, and punishable by economic criminal law." Clearly, more initiatives are still needed to fight corruption, and more effective tools must be utilised to support these initiatives [60]. In short, Syria's economy still faces serious problems and challenges and impediments to growth, including: a large and poorly performing public sector; declining rates of oil production; widening non-oil deficit; widespread corruption; weak financial and capital markets; and high rates of unemployment tied to a high population growth rate. For ideological reasons, privatization of government enterprises is explicitly rejected. Therefore major sectors of the economy including refining, ports operation, air transportation, power generation and water distribution, remain firmly controlled by the government [85].

Amid killings, international condemnation and aggressive politics, Syria's macro-economic concerns may not be at the forefront of people's minds. However, the country is facing harsh economic realities, despite the lack of official information [24].Despite modest economic growth and reform prior to the outbreak of unrest, Syria's economy continues to suffer the effects of the ongoing conflict that began in 2011. The economy further contracted in 2012 because of international sanctions and reduced domestic consumption and production [17]. As a result of its political isolation which includes significant economic sanctions from the Arab League, EU and the US, Syria has low rates of investment and low levels of industrial and agricultural productivity [85]. Even with the oil peak witnessed at the start of 2013, this year's budget, unveiled by Finance Minister Mohammad Juleilati, in recent months, revealed a more-than-threefold growth in the deficit amid falling revenue and rising expenditure. Sanctions are affecting the "State budget, exchange rates, foreign currency reserves, general debt, inflation, unemployment and cash reserves," the state-run Syrian Arab News Agency (SANA) quoted Juleilati as he stated in November[24]. According to, the official data of the

World Bank, Syria's GDP was $73,672,408,036 in 2012[66]. However, Syria's real GDP growth and consumer inflation rates in 2012 were -5.5%, 28% respectively [32]. In the study entitled: Socio Roots and Impact of the Syrian Crisis, the Syrian Center for Policy Research (SCPR), stated that the current crisis which escalated to an internal armed conflict has resulted in a tragic impact on development performance in Syria through destroying economic, social, and human capitals, with unbearable losses for the current and future generations. From economic point of view, the total loss of the Syrian economy due to the crisis towards the end of 2012 has been estimated at 48.4 billion USD in current prices. This loss equals 81.7% of Syria's 2010 GDP in 2000 constant prices, a substantial loss even when compared to conflict losses in other countries. The GDP loss is only 50% of the total loss, whereas the damage in capital stock and the increase in military expenditure represent 43% and 7% of the total loss, respectively [21]. GDP contraction was uneven among sectors, and thus the crisis has brought an impact on the structure of the Syrian economy. Available data suggests that most of the GDP losses (83 %) were incurred by four sectors: internal trade, transportation and communications, manufacturing and mining [59]. The crisis has cost the telecommunication sector in Syria just over one and a half billion Syrian Pounds [26]. Since 2011, the Syrian economy has shrunk by 35-40 percent [24]. Unemployment has ballooned to 60% and government coffers are empty; oil production is down to 20,000 barrels per day, from 380,000. Oil sanctions and sabotage have cost the government at least $13 billion by its own reckoning. Farming, trade and manufacturing are running at less than a third of pre-war levels. The Syrian pound has tumbled from 47 to the dollar when fighting broke out to around 250 today. In Beirut UN experts reckon that 19% of Syrians now live below the poverty line, compared with less than 1% before the war [22]. Repairing the damage caused by two years of fighting could cost up to $80 billion, says Abdullah al-Dardari, former deputy premier for economic affairs under President Bashar al-Assad. This figure has caused shockwaves, amid warning signs in recent months of a looming fiscal collapse. While waging a military war against opposition fighters, resulting in tens of thousands of civilian casualties, the Syrian government is struggling to address evident economic decline. Dwindling foreign-exchange reserves, rising budget and trade deficits, and the plunging value of the Syrian pound, are the main financial issues. However, more important than the "Big figures of the macro-economy" is the "Collapse of the micro-economy," [24].

The United Nations Development Programme (UNDP) in its 2013 Human Development Report presented Human Development Index (HDI) values and ranks for 187 countries and UN-recognized territories, along with the Inequality-adjusted HDI for 132 countries, the Gender Inequality Index for 148 countries and the Multidimensional Poverty Index for 104 countries. The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living [74]. In other words, HDI is one of the key indices which are used to statistically measure the human development. As outlined by Soeftestad and Sein (2003), HDI includes life expectancy at birth, level of education and gross national product (GNP) per capita [28]. However, the Syrian Arab Republic's HDI value for 2012 is 0.648—in the medium human development category—positioning the country at 116 out of 187 countries and territories. Between 1980 and 2012, Syrian Arab Republic's HDI value increased from 0.501 to 0.648, an increase of 29 percent or average annual increase of about 0.8 percent. These figures refer to Syrian Arab Republic's progress in each of the HDI indicators. Between 1980 and 2012, Syrian Arab Republic's life expectancy at birth increased by 9.8 years, mean years of schooling increased by 3.1 years and expected years of schooling increased by 2.4 years. Between 1980 and 2012, the Syrian Arab Republic's GNI per capita increased around 36 percent[75]. The Syrian Arab Republic has achieved considerable progress in social development. Infant and under-five mortality rates have declined. With high immunization coverage rates, the country is certified as polio-free: no polio cases have

been reported since 1995. Primary education is compulsory and according to the multiple indicator cluster survey (MICS 2000), primary school net enrolment rates are high – 98 and 99 per cent for girls and boys respectively [81]. According to the UN_UNESCO Institute for Statistics (UIS), the literacy rate from 2007 to 2011 in Syria was 83%[72]. By definition: Adult literacy rate is the total percentage of the population age 15 and above who can, with understanding, read and write a short, simple statement on their everyday life[65]. With a growing population, Syria has a good basic education system. Since 2000, the government of Syria has significantly increased the expenditure on education from 1 to 6. In 2002, elementary and primary educations were combined into one basic education stage and education was made compulsory and free from grades 1 to 9. Arabic is the medium of instruction in the Syrian Arab Republic. English is taught from grade 1 in the basic learning stage as the primary second language, and French is taught in grades 7-12[84]. Before the conflict broke out, almost all primary school-aged children in Syria were attending classes, according to a recent Save the Children report. Three years later, in addition to the death toll of more than 100,000 and psychological trauma for those who survived, more than 1 million children were not attending school at all. Of Syria's five million displaced people, 2.5 million are children between 4-18 years of age, and half of those aren't in school. More than a fifth of Syria's schools have been destroyed or are no longer accessible for education. The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) estimates that it will require $45 million to support the minimum education needs for Syrian refugees. As of June 2012, only $9 million of this funding had been received [29]. The assessment findings indicate that access to education for the Syrian refugee children and youth in urban, peri--urban and rural areas is inadequate. Roughly 90% of school-aged refugee children and youth in non-camp settings are not participating in formal education. Of those, 76% were attending school in Syria. This gap mainly represents a reduction in the numbers of school--aged children attending primary education. According to this assessment, youth (aged to 24) were largely not engaged in formal education in Syria [55]. Schooling remains a priority that international organizations and aid groups, as well as Syrian expatriates, are trying to address both within Syria and in refugee camps along its borders, amidst the most challenging circumstances. Activists across Syria have started improvised, informal community schools and educational programs in mosques and homes across the country. There are dozen of unofficial schools set up along the Turkish border for Syrian refugees and thousands throughout refugee camps and populations across the region. These ad-hoc schools are often over-populated and lacking in funding for not only basic supplies but also for teachers salary. In countries neighbouring Syria such as Jordan, Turkey, and Lebanon, some Syrian refugee children have been able to enter local schools. But the numbers of children in need of education have increasingly created an unmanageable burden on host government and school systems. A few Syrian universities are still able to operate, primarily in regime-controlled areas where there tends to be more consistent electricity and stability. A 29-year old physics graduate student told Andrea Glioti, reporting for Al Monitor, "My brother is still attending university classes in Homs, where power supplies are almost continuous." But many universities have closed, and many students, professors, and scholars have fled due to violence, financial constraints, and corruption. Universities in the United States are working to provide Syrians with opportunities for higher education and scholarship even while the conflict prevails. Approximately, 40 universities have joined a consortium led by the Institute for International Education to provide emergency scholarships for students and host scholars who have fled from Syria[29]. In fact, Syria lost an important part of the existing infrastructure and human capital in education (teachers and supervisors). Moreover, the Syrian Center for Policy Research (SCPR) estimates that the decline in attendance rates 10.9%, and 22.8% in 2011, 2012 respectively, have decreased the mean years of schooling in Syria by about 1.74%. This will have a negative and a long term

impact on human capital and hence on economic growth, employment and productivity [59]. However, in response to the challenges posed by the escalating influx of Syrian refugees into the Hashemite Kingdom of Jordan, the UNESCO Amman Office is launching a €4.3 million project funded by the EU to sustain quality education and promote skills development opportunities for young Syrian refugees and young Jordanians impacted by the humanitarian crisis [78]. Furthermore, to help the children and families caught up in the horrific conflict in the Syrian Arab Republic, the United Nations International Children's Emergency Fund (UNICEF) worked with partners there and in nearby countries to supply vaccines to more than 1.4 million children against measles, to deliver winter provisions, medicines and non-food items to more than 263,000 people and to provide an uninterrupted education for some 79,000 affected children. This assistance included the growing number of refugees beyond the country's borders [80]. In short, the human development impact of Syrian crises is a catastrophic human and social loss [59].

3. Overall ICT Market Overview in Syria

Prior to the crisis in Syria, fair telecommunication system was undergoing significant improvement and digital upgrades, including fibre-optic technology and expansion of the network to rural areas [67]. However, like its inhabitants, Syria's telecom sector has been caught up in the ongoing civil war. Reports include instances of information warfare, proposed sanctions against telecom companies and damage to telecoms infrastructure [23]. The armed insurgency that began in 2011 has led to major disruptions to the network and has caused telephone and Internet outage [67]. Also, this dynamic worsened in 2011 and 2012, as inflation and electricity outages increased dramatically following public protests and the government's corresponding repression. The communications infrastructure was badly damaged, especially in cities like Homs those were subjected towards a particular severe shelling by the Syrian armed forces [8].

The deteriorating situation is having an impact on market development with regulatory developments delayed [23]. Prior to the Syrian civil war, telecommunications in Syria were slowly moving towards liberalization, with a number of licenses awarded and services launched in the Internet service provision market. The initiative reflected the government's change in attitude towards liberalization, following its promise to the European Union to liberalize markets by 2010[43]. However, all other forms of fixed-lined services are solely owned and provided by the state owned operator, Syrian Telecommunications Establishment (STE), which is currently upgrading and extending its network, aiming to achieve 100% coverage by the end of 2013. In fact, the telecommunications sector in the Syrian Arab Republic is the most regulated in the Middle East [11]. Appendix (2) shows an overview of the regulatory landscape of the key telecommunication services in Syria [37]. However, given the utility nature of telecoms, services are likely to be restored once fighting ceases [23]. In fact, the Syrian Telecommunications Establishment (STE) was responsible for regulating the telecommunication market and providing telecommunication services according to plans and policies approved by the Ministry of Communications and Technology [37], which its name recently has been amended into the Ministry of Communication and Information Technology Development. The new name has been approved by the Syrian Prime Ministry in connection with the strategy of restructuring the ICT sector in Syria [17]. According to the Syrian Telecommunication Law of 2010, a new regulatory authority named the Telecommunications Regulatory Authority will be established in the Syrian Arab Republic. Furthermore, the Syrian Telecommunications Establishment (STE) will be replaced by a joint stock company called the Syrian Telecommunications Company (SyTC) The telecommunications sector is considered a national resource and it shall be regulated under this new law for the purpose of: Firstly,

setting the rules for regulation and development of the telecommunications sector and the telecommunications services of all forms in Syria, to meet the needs of the society and the national economy. Secondly, restructuring the telecommunications sector and specifying the roles of the key stakeholders, particularly the Ministry of Communications and Technology and the Telecommunications Regulatory Authority established pursuant to this law. Thirdly, ensuring fair competition among operators and service providers, operating in the telecommunications sector and protecting the customers and users of telecommunications services [7].

On March 11 1996, Syrian Telecommunications Establishment (STE) signed a collaboration agreement with the Syrian Computer Society (SCS) after getting the approval from the Syrian government and authorities to set a pilot project to get internet services to government organizations and institutions for initial assessment of all aspects including utility, suitability to Syrian culture and possible security problems. Apart from the obstacles that was faced by the pilot project, this project formed the cornerstone for Syrian Telecom in order to modernize the internet backbone and telecom infrastructure later [27]. (However, there were 5,069,418 Internet users in Syria as of June 2012 for a 22.5 % Internet penetration rate of the Syrian population. Syria ranks 12th out of 14 countries in the Middle East region, just behind Jordan (38.1%) and ahead of Yemen (14.9%) and Iraq (7.1%) (Appendix 3)[42]. This puts Syria on the list of the less developed Arab states in terms of Internet service provision [4]. However, growth in the number of Internet users in Syria has been fairly steady since 2005 (Appendix 4) [86], following the concerted efforts of the National ICT Strategy for Socio-Economic Development in Syria [4]. In reference to, broadband Internet market in Syria, broadband subscriber levels are on the rise, with fixed broadband growth in the short medium term assured given by fixed broadband which makes up approximately a quarter of all fixed Internet subscriptions. The growing appetite for data coincides with Syria's involvement with two relatively new terrestrial cables[23]. By December 2011, there were 13 operational Internet Service Providers (ISPs): Syrian Telecom (190.sy and Tarassul), Aya, SCS, Sawa, INTE, Rannet, Tarnet, Elecom, Syriatel, Zaad, MTN Syria and Best Italia (satellite Internet provider). It is noteworthy that all fixed-line ISPs are reselling services offered through the network of the incumbent fixed operator, STE. By the end of 2010, fixed (wired)-broadband Internet subscriptions reached 67'600, corresponding to a fixed (wired)-broadband Internet penetration rate of only 0.3 per cent. During the first six months of 2011, the fixed (wired)-broadband market grew by 60.7 per cent, adding 40'800 subscriptions. Despite the rise in broadband accounts, Syria remains a primarily dial-up market [37]. In fact, affordable broadband Internet (ADSL) service in Syria has been available since 2007[6]. However, the Asymmetric Digital Subscriber Line (ADSL) service is not available in all locations and, where it is available, the local Public Switched Telephone Network (PSTN) may not have enough ports for immediate activation. Through 2009, broadband Internet access had reached less than 0.2% of the Syrian population [86]. However, any house with a landline can access the net using a dial-up modem and pay-as-you-go cards, a much more affordable solution although computers are still a rarity in most Syrian homes [58]. According to the indicators of the World Bank, in 2008, there were 1800000 personal computers in Syria [16]. In other words, only 8.8 % of the Syrian population was having personal computers in 2008[33]. However, 43% of households in Syria were having computers in 2012 [39].

In reference to Internet host, there were 416 Syrian Internet hosts in 2012, placing Syria 188th out of 231 in the world [67]. With a measured download speed that averages 1.10 Mbps, the speed of the Internet in Syria is relatively very slow compared to the world-wide average of 14.20 Mbps. The data comes from Ookla, a broadband research company that "Crowd sourced" research and download and upload speeds through its website SpeedTest.net, where people can test the speed of their internet connection. The Syrian Arab

Republic ranks behind 181 other countries on a list of the world's fastest download speeds. Results were obtained by analyzing test data between July29, 2013 and August 27, 2013. Tests from 117,844 unique Internet Protocols (IPs) have been taken in this country and of 336,310 total tests, 5,430 are being used for the current Index [54]. In fact, Internet cafes are now popular in Damascus [55], where high-speed Internet is available. Internet cafes, which are wide spread and accessible to the public for a fee, can be used to access blocked sites [39]. However, more restrictions have been placed on Internet cafes. All public Internet centres, including Internet cafes, need operating approval from the security services and are required to keep detailed records of their customers' surfing habits, and people have been arrested after accessing blocked content [55]. Moreover, broadband services are expensive and difficult for a residential user to subscribe to, with ADSL in Syria reported to be the least affordable in the Middle East [9]. Syria's telecommunications infrastructure is one of the least developed in the Middle East, with broadband connections being among the most difficult and expensive to acquire [8]. In fact, besides understanding ICT trends in terms of such factors as infrastructure access and ICT skills, it is also important to analyze and track prices of ICT services. The cost and affordability of ICT services will influence and in some cases determine whether or not people will be able to subscribe to certain services and use ICTs. The ICT Price Basket (IPB) is composed of three distinct prices – for fixed-telephone, mobile-cellular and fixed-broadband services – and computed as a percentage of countries' average gross national income (GNI) per capita [38]. However, an analysis of the three sub-baskets (fixed-telephony, mobile-cellular-telephony, and fixed-broadband Internet) suggests that prices in Syria as a whole are relatively expensive in comparison with the rest of the Arab countries (Appendix5). This finding suggests that more must be done to make ICT services and fixed-broadband services in particular, more affordable in the region, especially if the region is to achieve the target set by the Broadband Commission for Development, which is "To make sure that by 2015, entry-level broadband services should amount to less than five per cent of average monthly income" [37].

In reference to fixed-telephone market in Syria, STE is the sole fixed-service provider, providing mainline services over its own network. It is a state owned. By the end of 2010, there were 4.069 million fixed-telephone subscriptions, translating into a penetration rate of 19.9 per cent. During the first six months of 2011, fixed-telephone subscriptions increased by 3.1 per cent, as 128'000 subscriptions were added. By the end of June 2011, Syria's total fixed-telephone subscriptions stood at 4.197 million, corresponding to a penetration rate of 20.4 per cent [37]. The number of fixed-line connections has increased markedly since 2000 [67], and although penetration rates are low, they are higher than in many more wealthy Middle Eastern countries [9]. STE is investing in upgrading and extending its network and aims to gain 100% coverage by the end of 2013 [44]. On the other hand, Syria's mobile market is served by a duopoly comprised of two operators Syriatel and MTN Syria [23]. Both companies obtained a Build Operator Transfer (BOT) agreement from STE to establish a network covering the country. Syriatel is locally owned and MTN is a subsidiary of MTN of South Africa, which gained ownership through its purchase of Invest COM [44]. However, there has been a talk of a third operator, with keen investors likely given mobile penetration in Syria is the second lowest in the Middle East [23]. In other words, mobile penetration rates are relatively low - Syria is one of the few markets in the region with room for expansion [9]. In September 2010, the Ministry of Communications and Technology announced the tender for the third mobile license. From a short list of five operators, Saudi Telecom Company (STC) and Qatar Telecom (QSC) submitted bids for the tender. The process has been postponed due to political unrest in the country. By the end of 2010, total mobile-cellular subscriptions amounted to 11.8 million, translating into a penetration rate of 57.8 per cent. During the first six months of 2011, 521'000 mobile-cellular subscriptions were cancelled. By the end of June 2011, Syria's total mobile-cellular subscriptions stood at 11'278

subscriptions, corresponding to a penetration rate of 54.8 per cent [37]. However, call quality ranges from acceptable to poor. Many international calls fail or are less clear over the mobile network compared to the landline network [86].Mobile data services are becoming an increasingly important source of new revenue as the mobile voice market begins to mature. With 3G/HSPA networks in place, the focus for mobile data is beginning to shift to mobile broadband offerings; already mobile broadband subscriptions exceed those of fixed broadband [23]. Syriatel and MTN are the only mobile-cellular operators; they have deployed 3G mobile-broadband technology. STE announced in May 2011 that it will be working with the mobile-cellular operators to expand 3G networks. Moreover, in April 2011, Syriatel held a trial of HSPA+ technology. The new technology enables Internet speeds up to 20 Mbps, compared with the current Syriatel 3G service speed of up to 7.2 Mbps. As for the mobile-broadband market, by end of 2010, active mobile-broadband Internet subscriptions amounted to 256'242, corresponding to a mobile-broadband penetration rate of 1.3 per cent [37]. The 3G wireless Internet is available in all major cities as well as cities with significant tourism. 3.5G EDGE wireless Internet is available through mobile network operators, Syriatel and MTN. Wireless Internet is accessed using a USB stick purchased from the mobile operators. In addition, 3G SIM cards for use on mobile phones may be purchased with a data plan. However, only W-CDMA phones support data at the moment [86]. As for other wireless-broadband technologies, VSAT services are provided by the ISP Best Italia. In March 2011, STE announced that it aims to employ technologies such as W-CDMA and that it will prepare for LTE trials according to contracts with mobile-cellular operators. Concerning fixed (wired)-broadband projects, STE is working to complete the requirements needed for FTTB technology [37]. To sum up, the Little Data Book on Information and Communication Technology 2012, is a joint publication between the World Bank and the International Telecommunication Union (ITU), summarized the key telecom parameters in Syria (Appendix6) [63].

4. Measuring National ICT readiness in Syria

Over the last decade, several attempts have been made to assess ICT developments [87]. In his study to analyze and measure the diffusion of ICT in developing countries, [49] used four ICT indicators. These indicators are cellular mobile subscribers per 100 inhabitants, personal computers per 100 inhabitants, Internet host per 10,000 inhabitants and Internet users per 10,000 inhabitants. The first three variables may be viewed as indicators of the state of ICT infrastructure, while the fourth indicator-Internet users-measures access to the Internet. In addition, previous research has associated the level of a country's basic telecommunications infrastructure with its teledensity [51]. Teledensity is defined as the number of telephone lines (land lines) for every one hundred inhabitants [50]. However, one of the most authoritative exercises has been the Networked Readiness Index (NRI), which has been adopted by several governments as a valuable tool for assessing and leveraging technology for competitiveness and development. Its success emphasizes the importance of continuing to adapt its framework in alignment with the changing landscape of technology and its new opportunities. The networked readiness framework translates into the NRI, comprising four sub indexes that measure the environment for ICT; the readiness of a society to use ICT; the actual usage of all main stakeholders; and, finally, the impacts that ICT generates in the economy and society. The three first sub indexes can be regarded as the drivers that condition the results of the fourth sub index– that is, ICT impacts. These four sub indexes are divided into 10 pillars and 53 variables (Appendix 7) [87]. However, according to the Global Information Technology Report 2012 which resulted from the collaboration between the World Economic Forum and INSEAD, Syria occupied low positions in the regional as well as in the global Networked Readiness Index (NRI) rankings. In 2012, Syria's NRI score is 2.9, positioning the country at 129 out of 142countries and

territories. Between 2010 and 2012, Syria's NRI score decreased from 3.06 to 2.9. This means that Syria fell five ranks, from 129 to 124, in the total Networked Readiness Index (NRI) [53]. Furthermore, the ICT Development Index (IDI) is a composite index combining 11 indicators into one benchmark measure that serves to monitor and compare developments in information and communication technology (ICT) across countries. Appendix (8) summarizes the indicators of the IDI and their weights. In fact, the IDI was developed by International Telecommunication Union (ITU) in 2008 and presented in the 2009 edition of Measuring the Information Society [36]. However, there are three stages in the evolution towards the information society. These three stages are ICT Readiness (infrastructure, use), ICT Use (intensity) and ICT Capability (skills) [38]. The latest IDI, which is based on the end of 2010 data, shows that ICT uptake continues to accelerate worldwide, with all countries, including those in the Arab region, improving their IDI scores. Within the Arab States region, however, Syria occupied low positions in the regional as well as in the global IDI rankings. According to IDI 2010, Syria ranked 96th globally and 11th regionally (Appendix 9) [37]. However, Syria remains a market with great potential for expansion for ICT services but requires much market liberalization to achieve that potential [9].

5. Conclusion:

In its ambitious plans for economic and administrative role, the Syrian government highlighted the essential role of the ICT sector and its potential in opening new opportunities for the Syrian market [4]. However, it is clear that Syria has not been successful in adopting technologies. The findings indicate that Syria on the list of the less developed Arab states in terms of ICT uptake. In fact, the lack of basic telecommunications infrastructure is a severe hindrance to the growth of the Internet in any country [46] and hence to the adoption and diffusion of e-commerce in developing countries [48] [56] [69]. From ICT perspective, the findings indicate that e-commerce in Syria is still in its infancy. In fact, Syria's current ICT infrastructure is a major barrier to the adoption and diffusion of e-commerce there. However, Syria remains a market with great potential for future expansion of ICT services but requires much market liberalization to achieve that potential. Also, our paper shows that, like its inhabitants, Syria's telecom sector has been caught up in the ongoing civil war. The ICT infrastructure was badly damaged. However given the utility nature of telecoms, services are likely to be restored once fighting ceases [23].

To bridge the digital divide, the Broadband Commission for Digital Development endorsed four ambitious but achievable targets for 2015. The targets cover broadband policy, affordability and uptake. First, by 2015, all countries should have a national broadband plan or strategy or include broadband in their universal access/service (UAS) definitions. Second, by 2015, entry level broadband services should be made affordable in developing countries through adequate regulation and market forces (e.g. be priced at less than 5 per cent of average monthly GNI per capita). Third, by 2015, 40 per cent of households in developing countries should have Internet access. Fourth, by 2015, Internet user penetration should reach 60 per cent worldwide, 50 per cent in developing countries and 15 per cent in LDCs [38]. On the other hand, smart phones are booming in the Arab world as % of the total handsets [1]. Therefore, any successful mobile infrastructure must be supported by massive IP infrastructure; there will also continue to be growth opportunities for fixed services. Communications operators in the Middle-East countries including the Syrian Arab Republic must be serious about investing in high-speed mobile LTE networks, including next-generation mobile broadband. In other words, the Arab countries including Syria must invest in communications connectivity, especially high-speed broadband and wireless access [87].

REFERENCES:

[1]. Abbassi, J. (2013). Arab Telecom Markets: Present & Potential. The 10th Convergence Summit 2013. Enterprise Ireland Seminar, Dublin, Ireland, April 16 2013. Available at: http://www.enterprise-ireland.com/.../Telecoms-Seminar-Jawad- pdf. [Accessed 22 August 2013 Time: 9.30 pm.].

[2]. Al-Ammar, A. (2012). E-Commerce is expanding in the Syrian Local Market. Available at: http://sana.sy/ara/82/2012/07/18/432296.htm. [Accessed 26 August 2013 Time: 11.35 pm.].

[3]. Aljifri, H., Pons, A., and Collins, D. (2003), "Global e-commerce: a framework for understanding and overcoming the trust barrier", *Journal of Information Management & Computer Security*, Volume11 Number3, PP.130-138.

[4]. Anon, (2004). National ICT Strategy for Socio-Economic Development in Syria: A study prepared by a national team of experts and consultants. Available at: http://www.arab-hdr.org/publications/other/undp/hdr/2004/syria-ict-04e-strategy.pdf. [Accessed 10 August 2013 Time: 12.05 am.].

[5]. Anon. (2005), "Middle East economy: Population dynamics", EIU Views Wire, New York, Pg. n/a.

[6]. Anon, (2007). Broadband internet comes to Syria. Available at: http://newsfromsyria.com/2007/01/16/broadband-internet-comes-to-syria/. [Accessed 29 August 2013 Time: 2.10 am.].

[7]. Anon, (2010). Syrian Telecommunication Law. Available at: http://www.moct.gov.sy/moct/sites/default/files/TelecomLawEnglish.pdf. [Accessed 29 August 2013 Time: 1.30 am.].

[8]. Anon, (2012). Freedom on the Net: Syria. Available at: http://www.freedomhouse.org/report/freedom-net/2012/syria. [Accessed 16 August 2013 Time: 1.30 am.].

[9]. Anon, (2012). Syria - Telecoms, Mobile, Broadband and Forecasts. Available at: http://www.businesswire.com/news/home/20120924005691/en/Research-Markets-Syria---Telecoms-Mobile-Broadband. [Accessed 28 August 2013 Time: 2.50 pm.].

[10]. Anon, (2012). Syria Urbanization. Available at: http://www.indexmundi.com/syria/urbanization.html. [Accessed 29 August 2013 Time: 4.35 pm.].

[11]. Anon, (2012). Syria: Syria Profile. Available at: http://www.fosigrid.org/middle-east/syria. [Accessed 27 August 2013 Time: 2.30 am.].

[12]. Anon, (2012). The Syrian government approves the Law of Setting up a State-Owned Company for E-Payment Services. Available at: http://www.youropinion.gov.sy/sessions. [Accessed 27 August 2013 Time: 12.45 am.].

[13]. Anon, (2013). The Central Bureau of Statistics indicates that the Number of Syria's Population is 22 million. Available at: http://syrianmasah.net/arabic/articaldetails24145.html. [Accessed 29 August 2013 Time: 4.30 pm.].

[14]. Anon, (2013). Changing the Name of the Ministry of Communications and Technology in Syria.

[15]. Anon, (2013). EUMEDIS-Information and Communication Technologies. Available at: http://www.enpi-info.eu/mainmed.php?id=36&id_type=10. [Accessed 21 August 2013 Time: 12.05 am.].

[16]. Anon, (2013). Personal Computers in Syria. Available at: http://www.tradingeconomics.com/syria/personal-computers-wb-data.html. [Accessed 29 August 2013 Time: 2.40 am.].

[17]. Anon, (2013). Syria Economy - overview. Available at: http://www.indexmundi.com/syria/economy_overview.html. [Accessed 30 August 2013 Time: 12.15 am.].

[18]. Anon, (2013). Syria death toll at least 93,000, says UN. Available at: http://www.bbc.co.uk/news/world-middle-east-22886730. [Accessed 5 August 2013 Time: 7.30 pm.].

[19]. Anon, (2013). Syria Profile. Available at: http://www.bbc.co.uk/news/world-middle-east-14703856. [Accessed 29 August 2013 Time: 2:15 pm.].

[20]. Anon, (2013). Syria: Country Profile. Available at: http://www.fosigrid.org/middle-east/syria. [Accessed 9 August 2013 Time: 4.20 pm.].

[21]. Anon, (2013). Syria's losses are $48 Billion. Available at: http://www.aljazeera.net/ebusiness/pages/0238d17d-8d8f-4eba-aec1-afc774b20a83. [Accessed 14 August 2013 Time: 12.05 am.].

[22]. Anon, (2013). Syria's war economy: The regime is fighting a financial battle. Available at: http://www.economist.com/news/middle-east-and-africa/21583290-regime-fighting-financial-battle-bullets-and-bank-accounts. [Accessed 30 August 2013 Time: 1.15 am.].

[23]. Anon, (2013). Syria-Telecoms, Mobile, Broadband and Forecasts: Executive Summary. Available at:http://www.budde.com.au/Research/Syria-Telecoms-Mobile-Broadband-and-Forecasts.html?r=51. [Accessed 7 August 2013 Time: 1.15 pm.].

[24]. Anon, (2013). The cost of war: Syria's economy pays a painful price. Available at: http://english.alarabiya.net/en/business/2013/03/15/The-cost-of-war-Syria-s-economy-pays-a-painful-price.html. [Accessed 3 August 2013 Time: 2.10 pm.].

[25]. Anon, (2013). Syrian refugees in neighbouring countries. Available at: http://libraryeuroparl.wordpress.com/2013/05/20/syrian-refugees-in-neighbouring-countries/. [Accessed 5 August 2013 Time: 10.45 pm.].

[26]. Anon, (2013). The crisis has cost the telecommunication sector in Syria just over one and a half billion Syrian Pounds..].

[27]. Askhita, H. (2000), "The Internet in Syria", *Online Information Review*, Vol.24, Issue.2, Pg.144.

[28]. Boateng, R., Heeks, R., Molla, A., and Hinson, R. (2008), "E-commerce and Socio-economic development: conceptualizing the link", *Journal of Internet Research*, Volume 18 Number 5. PP.562-594.

[29]. Brandenburg, R. (2013). Syrian Children's Future Jeopardized in Education Too. Available at: http://www.usip.org/olivebranch/syrian-children-s-future-jeopardized-in-education-too. [Accessed 3 August 2013 Time: 12.30 pm.].

[30]. Central Bureau of Statistics, (2011). Statistical Yearbook: Sixty Fourth Version. Office of the Syrian Prime Ministry. Syrian Arab Republic.

[31]. El-Leithy, A., and Sweldens, W. (2012). Time for a Middle East communications revolution. Available at: http://forumblog.org/2012/06/time-for-a-middle-east-communications-revolution/. [Accessed 15 Dec 2012 Time: 8.20 pm.].

[32]. ESCWA: United Nations Economic and Social Commission for Western Asia, (2012). Survey of Economic and Social Developments in the ESCOWA Region-2011-2012. Available at: http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA_EDGD_12_2_e.pdf. [Accessed 30 August 2013 Time: 1.45 pm.].

[33]. Grau, J. (2010). US retail e-commerce forecast: room to grow. e-Marketer.

[34]. Iglesias-Pradas, S., et al. Barriers and drivers for non-shoppers in B2C e-commerce: A latent class exploratory analysis. Computers in Human Behaviour (2012), doi:10.1016/j.chb.2012.01.024.

[35]. Islamic Development Bank, (2012). Key Socio-Economic Statistics on IDB Member Countries: STATISTICAL MONOGRAPH NO. 32. Available at: http://www.isdb.org/irj/go/km/docs/documents/IDBDevelopments/Internet/English/IDB/CM/Publications/Statistical_Monograph/Monograph2012.pdf. [Accessed 18 August 2013 Time: 10.10 pm.].

[36]. ITU: International Telecommunication Union, (2009).Measuring the Information Society 2009: The ICT Development Index. Available at: http://www.itu.int/ITU-D/ict/publications/idi/material/2009/MIS2009_w5.pdf. [Accessed 28 August 2013 Time: 3.50pm.].

[37]. ITU: International Telecommunication Union, (2012). Connect Arab Summit 2012, Connecting the unconnected by 2015: ICT Adoption and prospects in the Arab region. Available at: http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf. [Accessed 24 August 2013 Time: 2.00 pm.].

[38]. ITU: International Telecommunication Union, (2012). Measuring the Information Society 2012. Available at: http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2012/MIS2012_without_Annex_4.pdf . [Accessed 26 August 2013 Time: 11.30 pm.].

[39]. ITU: International Telecommunication Union, (2013). Syria Profile (Latest data available 2012). Available at: http://www.itu.int/net4/itu-d/icteye/CountryProfile.aspx#ArabStates. [Accessed 19 August 2013 Time: 1.25 am.].

[40]. ITU: International Telecommunication Union, ITU Regional Seminar on E-Commerce for the Arab Region (15-17 May 2001) Worksheet of the Syrian Administration to the ITU Regional E-Commerce for the Arab Region, Tunis-Tunisia 15-17/5/2001. Available at: http://www.itu.int/ITU-D/ecdc/Seminars/arabstatesregion2001/Presentations/syria.html. [Accessed 27 August 2013 Time: 12.05 am.].

[41]. IWPR, (2008). Syrian youth break through internet blocks. Available at: http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?lng=en&id=88422. [15 August 2013 Time: 4.45 pm.].

[42]. IWS: Internet World Stats, (2013). Middle East Internet Users, Population and Facebook Statistics. Available at: http://www.internetworldstats.com/stats5.htm. [Accessed 29 August 2013 Time: 1.45 am.].

[43]. IWS: Internet World Stats, (2013). Syria Telecoms Market Overview & Forecast Report. Available at: http://www.internetworldstats.com/me/sy.htm. [Accessed 29 August 2013 Time: 1.00 am.].

[44]. Hamdan, M. (2013). E-learning in Syria. Available at: http://webcache.googleusercontent.com/search?q=cache:kaFvi_Kg5ucJ:hamdaneducation.com/arabic/EPeJdocs/4th6.htm+http://hamdaneducation.com/arabic/EPeJdocs/4th6.htm&cd=1&hl=en&ct=clnk. [Accessed 10 August 2013 Time: 12.15 am.].

[45]. Javalgi, R., and Ramsey, R. (2000), "Strategic issues of e-commerce as an alternative global distribution system", *Journal of International Marketing Review*, Volume. 18 No 14, PP.376-391.

[46]. Jensen, M. (1999), "Continental Connectivity Indicators", The Association for Progressive Communications: South Africa.

[47]. Kshetri, N. (2007), "Barriers to e-commerce and competitive business models in developing countries: A case study", *Journal of Electronic Commerce and Applications*, Vol. 6 No. 4 pp. 443-452.

[48]. Lawrence, J., and Tar, U. (2010), "Barriers to ecommerce in developing countries", *Journal of Information, Society and Justice*, Volume. 3 No. 1, PP. 23-35.

[49]. Lutz, M. (2003), "An analysis of the determinants and effects of ICT diffusion in developing countries", *Journal of Information Technology for Development*, Vol. 10, PP. 151-169. IOS Press.

[50]. Mbarika, V. (2002), "Re-thinking Information and Communications Technology Policy Focus on Internet versus Teledensity Diffusion for Africa's Least Developed Countries.", *The Electronic Journal of Information Systems in Developing Countries*, Vol.9 No. 1, PP.1-13.

[51]. Mbarika, V., Byrd, T., and Raymond, J. (2002), "Growth of Teledensity in Least Developed Countries: Need for a Migrated Ethiopia." *Journal of Global Information Management*, Vol.10 No. 2, PP. 14-27.

[52]. Mulpuru, S. (2008). US ecommerce forecast: 2008 To 2012. Forrester Research.

[53]. NCO: National Competitiveness Observatory, (2012). Syria in the Networked Readiness Index 2012. Available at: http://www.ncosyria.com/arabic/news/51.html. [Accessed 12 August 2013 Time: 5.10 pm.].

[54]. Net Index, (2013). Household Download Index: Syrian Arab Republic. Available at: http://www.netindex.com/download/2,106/Syrian-Arab-Republic/. [Accessed 29 August 2013 Time: 3.30 am.].

[55]. Norwegian Refugee Council, (2013). One in ten in school: An overview of access to education for Syrian refugee children and youth in the urban areas of the Kurdistan Region of Iraq (KR-I). Available at:http://reliefweb.int/report/iraq/one-ten-school-overview-access-education-syrian-refuee-children-and-youth-urban-areas. [Accessed 3 August 2013 Time: 12.30 pm.].

[56]. Okoli, C., and Mbarika, V. (2003), "A framework for assessing e-commerce in Sub-Saharan Africa", *Journal of Global Information Technology Management*, Vol.6, Issue.3, Pg.44.

[57]. Quibria, M., Ahmed, S., Tschang, T., and Macasaquit, M. (2003), "Digital divide: determinants and policies with special reference to Asia", *Journal of Economics*, Vol. 13, PP.811-825.

[58]. Sands, P. (2008). Syria tightens control over internet. Available at: http://www.thenational.ae/news/world/middle-east/syria-tightens-control-over-internet. [Accessed 15 August 2013 Time: 4.20 pm.].

[59]. SCPR: Syrian Center for Policy Research, (2012). Social- economic Roots and Impacts of the Syrian Crisis. Available at: http://scpr-syria.org/att/1360464324_Tf75J.pdf. [Accessed 13 August 2013 Time: 11.30 pm.].

[60]. Tawileh, A. (2012). The internet and corruption in Syria. Available at: http://giswatch.org/en/country-report/internet-and-corruption/syria. [Accessed 9 August 2013 Time: 4.15 pm.].

[61]. The Euromed Agrifood B2B Exchange, (2005). Federation of the Syrian Chambers of Commerce. Available at: www.emed-tds.com/agrifooddocs/.../dissemination%20Syria.pp. *[Accessed 28 August 2013 Time: 4.00 pm.].*

[62]. The World Bank, (2012). Syria Overview. Available at: http://www.worldbank.org/en/country/syria/overview. [Accessed 26 Jan 2013 Time: 4: 30 pm.].

[63]. The World Bank, (2012). The Little Data Book on Information and Communication Technology 12: Country tables: Syrian Arab Republic. Available at: http://data.worldbank.org/sites/default/files/little-data-book-on-info-comm-tech-2012.pdf. [Accessed 12 August 2013 Time: 4.30 pm.].

[64]. The World Bank, (2013). Data: Syrian Arab Republic. Available at: http://data.worldbank.org/country/syrian-arab-republic. [Accessed 29 August 2013 Time: 11.20 pm.].

[65]. The World Bank, (2013). Literacy rate, adult total (% of people ages 15 and above). Available at: http://data.worldbank.org/indicator/SE.ADT.LITR.ZS. [Accessed 30 August 2013 Time: 4.20 am.].

[66]. The World Bank, (2013). Syria: Country At A Glance. Available at: http://www.worldbank.org/en/country/syria. [Accessed 30 August 2013 Time: 12.35 am.].

[67]. The World Fact Book, (2013). Middle East: Syria. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/sy.html. [Accessed 29 August 2013 Time: 12.20 am.].

[68]. Transparency International, (2013). Corruption By Country/Territory: Syria. Available at: http://www.transparency.org/country#SYR. [Accessed 6 August 2013 Time: 7.30 pm.].

[69]. Travica, B. (2002), "Diffusion of electronic commerce in developing countries: The case of Costa Rica.", *Journal of Global Information Technology*, Volume. 5 No. 1, PP. 4-24.

[70]. UK FCO: Foreign & Commonwealth Office-Gov.UK, (2013). UK FCO Country Profiles- Syria. Available at: http://www.factba.se/fco-page.php?bc=SY. [Accessed 29 August 2013 Time: 4.40 pm.].

[71]. UN: United Nations, (2013). Syrian Arab Republic. Available at: http://data.un.org/CountryProfile.aspx?crName=Syrian%20Arab%20Republic. [Accessed 24 August 2013 Time: 12.20 pm.].

[72]. UN: United Nations, (2013). UNdata-Adult literacy rate: Syrian Arab Republic. Available at: http://data.un.org/Data.aspx?d=SOWC&f=inID%3A74. [Accessed 30 August 2013 Time: 4.00 am.].

[73]. UN: United Nations, (2013). Responding to the Crisis in Syria. Available at: http://www.undp.org/content/rbas/en/home/ourwork/crisispreventionandrecovery/successstories/Responding_to_crisis_Syria/. [Accessed 5 August 2013 Time: 10.30 pm.].

[74]. UNDP: United Nations Development Programme, (2013). Human Development Report 2013- The Rise of the South: Human Progress in a Diverse World. Available at: http://hdr.undp.org/en/media/HDR_2013_EN_complete.pdf. [Accessed 30 August 2013 Time: 3.10 am.].

[75]. *UNDP*: United Nations Development Programme, (2013). Syrian Arab Republic's HDI value and rank. *Available at: http://www.undp.org/content/dam/rbas/.../Syrian%20Arab%20Republic.docx* Cached. [Accessed 30 August 2013 Time: 3.20am.].

[76]. UNDP-Syria: United Nations Development Programme-Syria, (2004). National ICT Strategy for Socio-Economic Development in Syria. A study prepared by a national team of experts and consultants. Damascus. Syria. SY/02/001.

[77] UNDP-Syria: United Nations Development Programme-Syria, (2005). Indicators OF Information Society in Syria for 2004. Damascus. Syria. SYR/02/00.

[78]. UNESCO: The United Nations Educational, Scientific and Cultural Organization, (2013). UNESCO/EU €4.3 million project for young Syrian refugees in Jordan. Available at: http://www.unesco.org/new/en/amman/about-this-office/single-view/news/supporting_the_futures_of_young_syrian_refugees_in_jordan/. [Accessed 6 August 2013 Time: 12.20 am.].

[79]. UNHCR: *United Nations High Commissioner for Refugees, (2013).* SYRIA REGIONAL RESPONSE PLAN (RRP 5). Available at: http://www.data.unhcr.org/syrianrefugees/regional.php. [Accessed 5 August 2013 Time: 11.20 pm.].

[80]. UNICEF: United Nations Children's Fund, (2013). UNICEF Annual Report 2012. Available at:http://www.unicef.org/mena/MENA-UNICEF-AnnualReport2012_8July2013.pdf. [Accessed 30 August 2013 Time: 5.15 am.].

[81]. UNICEF: United Nations Children's Fund, (2013). At a glance: Syrian Arab Republic. Available at: http://www.unicef.org/infobycountry/syria_949.html. [Accessed 3 August 2013 Time: 12.30 pm.].

[82]. Warf, B., and Vincent, P. (2007), "Multiple geographies of the Arab Internet", Royal Geographical Society (with The Institute of British Geographers), Area, Vol. 39 No. 1pp. 83-96.

[83]. WFP: World Food Programme, (2013). WFP's operations inside Syria. Available at: http://www.wfp.org/crisis/syria/map?gclid=CI7-5avg5rgCFSQ44godo0MAfA. [Accessed 5 August 2013 Time: 10.20 pm.].

[84]. Wikipedia, (2013). Education in Syria. Available at: http://en.wikipedia.org/wiki/Education_in_Syria. [Accessed 30 August 2013 Time: 4.30 am.].

[851]. Wikipedia, (2013). Syria Profile. Available at: http://en.wikipedia.org/wiki/Syria. [Accessed 29 August 2013 Time: 3.00 pm.].

[86]. Wikipedia, (2013). Telecommunications in Syria. Available at: http://en.wikipedia.org/wiki/Telecommunications_in_Syria. [Accessed 29 August 2013 Time: 1.55 am.].

[87]. World Economic Forum, (2013).The Global Information Technology Report (2013): Growth and Jobs in a Hyperconnected World. Available at: http://www3.weforum.org/docs/WEF_GITR_Report_2013.pdf. [Accessed 12 August 2013 Time: 3.30pm.].

Appendix 1

Estimates of Population Actually Living in Syria in Mid Year 2011 by Province

Province	Total Population
Damascus (the capital)	1745000
Aleppo	4806000
Rural Damascus	2790000
Homs	1783000
Hama	1611000
Lattakia	999000
Idlep	1482000
Al-Hasakeh	1495000
Deir-ez-Zor	1221000
Tartous	792000
Al-Rakka	933000
Daraa	1012000
Al-Sweida	367000
Al-Quneitra	88000
Total	21124000*

*The number does not include Syrian population abroad

Source: Central Bureau of Statistics-2011.

Appendix 2

Regulatory Landscape of telecommunication services in Syria

Fixed Telephony		Fixed Internet			Mobile-cellular services		Mobile-broadband services		Local Loop Unbundling (LLU)	voice over IP (VoIP)		Launch dates of wireless networks		
Regulatory Landscape	Number of Service Providers	Regulatory Landscape	Number of Service Providers	Number of infrastructure providers(excluding LLU)	Regulatory landscape	Number of service providers	Regulatory landscape	Number of service providers	LLU Regulation	VoIP Regulation	VoIP provider(s)	Date of 3G (UMTS, HSPA) launch	Date of WiMAX launch	Date of LTE launch
Monopoly	1	Competitive	12	1	BOT duopoly	2	Duopoly	2	Operational	Illegal	-	January 2009	Not launched yet	Not launched yet

Source: http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf

Appendix 8

ICT Development Index: Indicators and Weights

ICT access (Indicators)	Ref. value	(%)	Weight of ICT access as of IDI
1. Fixed-telephone lines per 100 inhabitants	60	20	40
2. Mobile-cellular telephone subscriptions per 100 inhabitants	180	20	
3. International Internet bandwidth (bit/s) per Internet user	408'813*	20	
4. Percentage of households with a computer	100	20	
5. Percentage of households with Internet access	100	20	

ICT use (Indicators	Ref. value	(%)	Weight of ICT use as of IDI
6. Percentage of individuals using the Internet	100	33	40
7. Fixed (wired)-broadband Internet subscriptions per 100 inhab.	60	33	
8. Active mobile-broadband subscriptions per 100 inhab.	100	33	

ICT skills	Ref. value	(%)	Weight of ICT skills as of IDI
9. Adult literacy rate	100	33	20
10. Secondary gross enrolment ratio	100	33	
11. Tertiary gross enrolment ratio	100	33	

Source: http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2012/MIS2012_without_Annex_4.pdf.

Appendix 4

Internet Growth and Population Statistics-Syria

Year	Internet Users	Population	% Population
2000	30,000	17,868,100	0.2 %
2002	220,000	18,586,743	1.2 %
2005	800,000	19,046,520	4.2 %
2009	3,565,000	21,762,978	16.4 %
2010	3,935,000	22,198,110	17.7 %
2011	4,469,000	4,469,000	19.8%

Source: http://en.wikipedia.org/wiki/Telecommunications_in_Syria.

Appendix 5

ICT Price Basket and sub-baskets, Arab countries, 2010 and 2008

Global IPB rank	Regional IPB rank	Country	ICT Price Basket		Fixed telephone sub-basket as a % of GNI per capita		Mobile cellular sub-basket as a % of GNI per capita		Fixed broadband sub-basket as a % of GNI per capita		GNI per capita, USD, 2009 (or latest available year)
			2010	2008	2010	2008	2010	2008	2010	2008	
5	1	United Arab Emirates	0.4	0.4	0.1	0.1	0.2	0.2	0.8	0.8	57'340
18	2	Bahrain	0.7	0.7	0.2	0.2	0.7	0.7	1.3	1.3	25'420
36	3	Saudi Arabia	1.1	1.5	0.6	0.6	1.0	1.1	1.8	2.7	17'700
39	4	Oman	1.2	1.1	0.9	0.7	0.6	0.7	2.1	2.1	17'890
65	5	Tunisia	2.5	3.1	0.8	1.0	3.2	4.3	3.4	4.1	3'720
70	6	Qatar	2.7	2.7	0.9	0.9	1.8	1.7	5.5	5.5	12'000
71	7	Algeria	3.0	3.5	1.5	1.3	3.4	4.4	4.0	4.8	4'420
72	8	Lebanon	3.0	3.8	1.5	1.8	4.1	5.7	3.4	4.0	8'060
78	9	Egypt	3.5	4.4	1.7	2.0	4.1	5.6	4.6	5.5	2'070
84	10	Jordan	3.9	4.4	2.9	3.1	3.2	3.4	5.7	6.7	3'980
107	11	Syria	7.1	N/A	0.6	N/A	9.9	N/A	10.8	N/A	2'410
117	12	Morocco	9.6	12.5	9.2	11.1	14.3	17.2	5.1	9.2	2'770
129	13	Mauritania	23.4	38.0	22.5	18.2	18.3	18.6	29.4	77.1	960
130	14	Djibouti	24.7	40.4	7.7	8.1	14.0	13.1	52.3	111.6	1'280
144	15	Yemen	24.7	37.4	1.2	1.0	9.2	11.0	134.9	281.6	1'060
158	16	Comoros	49.1	53.7	13.8	17.9	33.5	43.2	534.5	690.8	870

Source: http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf

Appendix 6
Key Telecom Parameters in the Syrian Arab Republic

Middle East & North Africa			Lower middle income
	Country data		lower middle-income group
	2005	2011	2011
Sector structure			
Separate telecommunications/ICT regulator.	No	No	
Status of main fixed-line operator.	Public	Public	
Level of competition (competition, partial comp., monopoly).			
International gateway(s).	..	..	
Mobile telephone service.	P	P	
Internet service.	P	P	
Foreign ownership (not allowed, restricted, allowed).	A	No	
Reg. treatment of VoIP (banned, closed, no framework, allowed)	B	B	
Sector efficiency and capacity			
Telecommunications revenue (% of GDP).	2.6	2.9	2.5
Telecommunications investment (% of revenue).	7.5	15.4	29.0
Sector performance			
Access			
Fixed-telephone subscriptions (per 100 people).	15.7	20.9	5.6
Mobile-cellular telephone subscriptions (per 100 people).	16.0	63.2	80.1
Fixed (wired)-broadband subscriptions (per 100 people).	0.01a	0.58	1.25
Households with a computer (%).	28.0	40.4a	10.7
Households with Internet access at home (%).	26.0	35.2a	7.7
Usage			
nt'l.voice traffic, total (minutes/subscription/month).	13.6	11.7	6.5
Domestic mobile traffic (minutes/subscription/month.	130.2	0.1	..
Individuals using the Internet (%)	5.6	22.5	16.2
Quality			

Population covered by a mobile-cellular network (%).	92	*98*	*86*
Fixed (wired)-broadband subscriptions (% of total Internet).	1.3	*7.1*	58.8
International Internet bandwidth (bit/s per Internet user).	328a	3,489	6,560
Affordability			
Fixed-telephone sub-basket ($ a month).	..	1.3	5.1
Mobile-cellular sub-basket ($ a month).	..	21.3	11.3
Fixed-broadband sub-basket ($ a month).	..	21.6	21.6
Trade			
ICT goods exports (% of total goods exports).	0.0	0.0	5.7
ICT goods imports (% of total goods imports).	3.3	2.2	6.7
ICT service exports (% of total service exports).	9.3	2.5	43.4
Applications			
Online service index (0-1, 1=highest presence).	0.36	0.23	0.32
Secure Internet servers (per million people).	*0.1*	0.3	*3.5*

Source: https://openknowledge.worldbank.org/bitstream/handle/10986/14453/978082139166.pdf?sequence=2.

Appendix 7

ELEMENTS OF THE NETWORKED READINESS INDEX (NRI)

Sub Indexes	Pillars
Environment	1. Political and regulatory environment. 2. Business and innovation environment.
Readiness	3. Infrastructure and digital content 4. Affordability. 5. Skills
Usage	6. Individual usage. 7. Business usage. 8. Government usage.
Impact	9. Economic impacts. 10. Social impacts.

Source: http://www3.weforum.org/docs/Global IT Report 2012.pdf.

Appendix 8

ICT Development Index: Indicators and Weights

ICT access (Indicators)	Ref. value	(%)	Weight of ICT access as of IDI
1. Fixed-telephone lines per 100 inhabitants	60	20	40
2. Mobile-cellular telephone subscriptions per 100 inhabitants	180	20	
3. International Internet bandwidth (bit/s) per Internet user	408'813*	20	
4. Percentage of households with a computer	100	20	
5. Percentage of households with Internet access	100	20	

ICT use (Indicators	Ref. value	(%)	Weight of ICT use as of IDI
6. Percentage of individuals using the Internet	100	33	40
7. Fixed (wired)-broadband Internet subscriptions per 100 inhab.	60	33	
8. Active mobile-broadband subscriptions per 100 inhab.	100	33	

ICT skills	Ref. value	(%)	Weight of ICT skills as of IDI
9. Adult literacy rate	100	33	20
10. Secondary	100	33	

Appendix 9

ICT Development Index (IDI) 2010 and 2008, Arab countries

	Regional rank 2010	Global rank 2010	IDI 2010	Global rank 2008	IDI 2008	Global rank change 2008- 2010
United Arab Emirates	1	32	6.19	32	5.63	0
Qatar	2	44	5.60	48	4.50	4
Bahrain	3	45	5.57	42	5.16	-3
Saudi Arabia	4	46	5.42	55	4.13	9
Oman	5	60	4.38	68	3.45	8
Jordan	6	73	3.83	73	3.29	0
Lebanon	7	79	3.57	77	3.12	-2
Tunisia	8	84	3.43	82	2.98	-2
Morocco	9	90	3.29	100	2.60	10
Egypt	10	91	3.28	92	2.73	1
Syria	11	96	3.05	96	2.66	0
Algeria	12	103	2.82	105	2.41	2
Yemen	13	127	1.72	127	1.49	0
Comoros	14	128	1.67	130	1.44	2
Djibouti	15	129	1.66	124	1.56	-5
Mauritania	16	131	1.66	126	1.50	-5
Regional average (simple)			3.57		3.04	

Source: http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf.

List of abbreviations

E-Commerce	Electronic-Commerce
ICT	Information and Communication Technology
UNDP	United Nations Development Programme
EU	European Union
CCI	Chambers of Commerce and Industries
EUMEDIS	Euro-Mediterranean Information Society Initiative
ITU	International Telecommunication Union
MEDA	Euro-Mediterranean Partnership
E-Government	Electronic-Government
MOCT	Ministry of Communication and Technology (Syria)
E-Health	Electronic -Health
m-health	Mobile-Health
E-Signature-Legislation	Electronic-Signature-Legislation
E-Payment	Electronic-Payment
NANS	National Agency for Network Services (Syria)
ISC	Information Security Center (Syria)
SCPR	Syrian Center for Policy Research
OHCHR	The United Nations Office of the High Commissioner for Human Rights
WFP	The World Food Programme
GDP	Gross Domestic Product
CPI	The Corruption Perceptions Index
GNI	Gross National Income
SANA	The Syrian Arab News Agency
HDI	Human Development Index
GNP	The Gross National Product per Capita
UNESCO	United Nations Educational, Scientific, and Cultural Organization
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNICEF	United Nations International Children's Emergency Fund
STE	Syrian Telecommunications Establishment
SyTC	Syrian Telecommunications Company
SCS	Syrian Computer Society
ISP	Internet Service Provider
ADSL	Asymmetric digital subscriber line
PSTN	local Public Switched Telephone Network
IPs	Internet Protocols
IPB	ICT Price Basket
BOT	Build operate transfer
STC	Saudi Telecom Company
QSC	Qatar Telecom
3G	Third-generation (mobile technology
HSPA	High speed packet access
HSPA+	Evolved high speed packet access
3.5G	Enhanced third-generation (mobile technology)
W-CDMA	Wideband code division multiple access
VSAT	Very small aperture terminal
LTE	Long term evolution
NRI	Networked Readiness Index
IDI	the ICT Development Index