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Role of Microcredit for Poverty alleviation in Pakistan: A Case Study of Punjab Rural Support Programme

Nadia Asghar & Muhammad Waqas Chughtai,
Research Scholar in National Defence University, Sector E-9, Islamabad
&
Bashir Ahmad Khilji, Preston University, Sector H-8/1, Islamabad

Abstract

Poverty is a global phenomenon which is adversely affecting the economy of the country. In rural areas of the country situation is more adverse as people don’t have much financial resources to spend a prosperous life. Most of the population of the country is spending their lives under the poverty line. Micro credit is considered a vital tool to alleviate poverty. This study depicts that microcredit helps the poor in reducing poverty by increasing their incomes. For the purpose, borrowers and non-borrowers are interviewed through a detailed questionnaire. Multiple Linear Regression Model (MLRM) is used for the empirical analysis of the primary data. The results show that loan participation has positive and significant impact on the incomes of the beneficiaries. Moreover Paper includes the borrowers’ opinions regarding services of Punjab Rural Support Programme (PRSP) and also presents some suggestions/ Policy implications for the improvement of microfinance sector in Pakistan.

Key Words: Microcredit, Poverty Alleviation, Income, PRSP-Pakistan

Introduction

Poverty is a complex phenomenon which cannot be defined in a single term. It may not contain any absolute definition. It has multiple dimensions which vary from country to country according to the norms and values of the particular societies. In Pakistan, poverty is defined as unavailability of basic human needs i.e. foods, clean drinking water, proper sanitation system, sufficient health, education facilities, cloths and shelter etc, where even life is at risk.

The main causes of the poverty in Pakistan are based on poor policies of government, corruption, political instability, economic devastation, lack of education and health facilities, obliterated agricultural system, raising inflation, unemployment and burden of overpopulation etc. In rural areas of Pakistan, lack of education, landlessness, unemployment and overpopulation have become the most prominent causes of poverty. In these areas, people have skills but they don’t have adequate finance to utilize and enhance such skills for income generating activities. Most of the people are unbanked and they don’t have access to the formal or commercial banks to borrow loans because of their tight security conditions and high collateral.

Some people borrow money from private money lenders at high interest rate. Sometimes, the amount of interest rate reaches to high which is more than the actual amount. Borrowers have to borrow money at high interest rate from any other informal source just to pay back to the first lender. In this way, once again they have to borrow the money to pay back the second one. Consequently, a debt cycle starts and the poor revolve around it and they may not come out from the vicious circle of poverty. In 1976, Dr Muhammad Younas introduced the concept of microfinancing through “Grameen Bank” to empower the poors. Now the concept has gained greater importance in all over the world and also has been initiated in Pakistan.
Definition of Micro finance

“Micro finance is a financial services for those who are unbanked and don’t have collateral to borrow from commercial banks. In broader meanings micro finance not only provides the facility of borrowing to the poors but also other services like account opening, saving accounts, security lockers and cash deposits etc”.

Microfinance provides financial service to the poor who are unable to become a part of formal banks because of their tight conditions with heavy collateral. Almost in all over the world traditional banks do not facilitate the poor population because they consider that poor are less credit worthy and they are not able to repay the loan. Moreover formal banks generally charge high interest rate. Therefore poor avoid borrowing a loan from such banks.

Although the poverty has multiple dimensions but when it is discussed through microfinance that describes income poverty. In rural areas, the numbers of people are dependent on credit for daily spending due to less assets and small unit of agricultural land etc, that’s why credit has become their dire need. Formal banks don’t target to the poor population because they have not any collateral in response of borrowing. More over formal banks can not ensure the positive utilization of loans. Micro credit institutions address all these problems and take part to alleviate poverty especially from rural areas. Microfinance Institutions (MFIs)’ force the borrower to use the loan within a week in the particular activity which he/she has mentioned at the time of borrowing. Hence, micro finance programs are bringing positive change in the income level of the poor.

Like other developing counties MFIs’ are now functional in almost all over the Pakistan. The targeted population of MFIs’ is poor people who are mostly unbanked. These people borrow a loan and then utilize in income stimulating activities. Most of the poor people use the loan in enhancing their small scale businesses so that they can not only generate income for their families but also spend a financially sustainable life. Microfinance financially stables the poor people for contingency planning in order to manage hazards like sudden infirmity, death of any family member or marriages of children etc. It is also observed that MFIs’ help the poor to improve their socio economic status. After working three or four years with MFIs’ poor people shift from poor class to well to do. Most of the borrowers of MFIs in developing countries are women. In some countries few institutions are only targeting the women community. The aim of these MFIs is not only to eradicate poverty but also empower the women in income generating and decision making activities.

Microfinance generates self employment opportunities for the poor, allows them to enhance their efficiency to handle risky situations, increase their incomes and profits. Microfinance also supports to the poor borrowers by providing a good, respectable socio economic status in order to financially secure and sustainable economic activities.

Punjab Rural Support Program (PRSP)

The Punjab Rural Support Program (PRSP) was established in November 1997. It is operating in 20 districts of Punjab Province and its regional offices are located in six cities of Punjab namely Faisalabad, Lahore, Gujranwala, Sialkot, Sahiwal, and Multan. These offices are operating core programs of PRSP through micro lending to the poor community of rural Punjab.

PRSP disburses group loan and every group is called Community Organization (CO). A loan is disbursed through the manager and president of the group and also collects monthly installments through the same channel. PRSP gives one day training to managers and presidents of COs to manage the groups. Moreover, proper utilization of the credit by the borrowers is also ensured by the manager and president of particular CO. PRSP disburses loan in different circles only for
ongoing business or an economic activity and charge 20% interest rate per annum at decreasing balance approach.

The study in hand is conducted to assess the impact of microfinance by PRSP on poverty alleviation in the rural areas of district Sialkot.

Objectives of the Study

- To find out the impact of micro credit on poverty alleviation.
- To give suggestions/policy implications for improvement of PRSP and the micro finance sector in Pakistan.

Literature Review

Hassan and Lu (2011) conclude that microcredit programmes are mostly targeting to those families who are living in extreme poverty. Microcredit has positive impact on food consumption, nutrition and income of the beneficiaries. Evidences show that the quality of life of the families who were involved with microcredit schemes has been improved. Moreover, micro credit not only increased the income of the borrowers but also improved the health care, education, house conditions as well as the socio economic status of the beneficiaries.

Khan et al (2011) discusses that women are always remain financially neglected. In developing countries, women are not allowed to take part in decision making. Therefore, microfinance programmes are mostly targeting to the poor women. The main objective of this function is to empower the women. Moreover, women are found more trust worthy in proper utilization of credit and repaying the loan installments. They analyze that after borrowing women borrowers have become confident, active and empower in decision making. It helps them to become not only socially strong but also raise a voice for their social rights.

Khilji (2011) concludes that poverty has been increased in Pakistan due to certain reasons but financial constraints and desert of Human Resource Development (HRD) are the most prominent causes. Micro financing is a supportive tool which works with HRD in order to alleviate the poverty from the country.

Yusuf et al (2011) describe that in rural areas most of the people belong to farming or have some small scale business. In the past, due to unavailability of credit poor people could not purchase necessary inputs for forming which resulting in less output or low productivity level. Moreover they were not able to enhance their small scale business which could bring sufficient income for their families. But now micro financing fulfills their needs of credit and helps them to escape from poverty.

Hypothesis

H₀: Loan participation has no impact on income of the beneficiaries.
H₁: Loan participation has positive impact on income of the beneficiaries.

Material and Methods

District Sialkot consists three tehsils, namely Sialkoat, Pasroor and Daska. From each tehsil; two villages are randomly selected and then from each village 20 respondent (10 borrowers and 10 non borrowers) are randomly selected. (The clients who have completed at least one year with PRSP were treated as borrowers while the clients who recently entered in the organization were treated as non borrowers). Hence total sample of 120 (60 borrowers and 60 non borrowers) is completed. Face
to face interviews were conducted through a detailed questionnaire and in order to collect the required information. *Multiple Linear Regression Model (MLRM)* was used to analyze the collected data.

**The Model**

\[ Y = \text{Income of the respondents (In Rupees)} \]

(Income (farm and non-farm) of the borrowers and non borrowers was asked during the interview, and used in the analysis as dependent variable.)

**Independent Variables**

- \( X_1 = \text{Loan participation (0 for non-borrowers and 1 for borrowers)} \)
- \( X_2 = \text{Education Level (Number of Year of Schooling)} \)
- \( X_3 = \text{Size of Household (Total number of Family Members)} \)

\[ b_0 = Y - \text{Intercept} \]

\[ y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \mu \]

\((b_1, b_2, b_3 \text{ are the coefficients of parameters while } \mu \text{ is the error term.})\)

**Results and Discussion**

**Table: No: 1 Results of Regression**

<table>
<thead>
<tr>
<th>Model (Variables)</th>
<th>Coefficients</th>
<th>t-value</th>
<th>Sig (p-value)</th>
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<tr>
<td>Constant</td>
<td>1544.24</td>
<td>14.377</td>
<td>.000</td>
</tr>
<tr>
<td>( X_1 ) (Loan Participation)</td>
<td>621.22</td>
<td>4.281</td>
<td>.001</td>
</tr>
<tr>
<td>( X_2 ) (Education)</td>
<td>544.47</td>
<td>4.073</td>
<td>.000</td>
</tr>
<tr>
<td>( X_3 ) (Size of Household)</td>
<td>-102.20</td>
<td>-0.759</td>
<td>.641</td>
</tr>
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\( F\text{-value} = 316.58 \quad R^2 = .849 \)

(Source: Researchers’ own calculations)

The results of empirical analysis (MLRM) are presented in above table. The constant of the model is found 1544.24, which represents the income of the respondents, keeping all other independent variables zero. The coefficient of \( X_1 \) (Loan Participation) is found 621.22 which shows that if the amount of credit will increase 1 rupee, it will increase the income of the borrowers by Rs.622.22/-. The coefficient of \( X_2 \) (Education) is found 544.47 which depicts that increase in 1 year/level of education, will increase in income by Rs.544.47/-. The variable \( X_3 \) (Size of Household) is found insignificant. So, \( H_1 \) is accepted against \( H_0 \) and conclude that loan participation has positive and significant impact on income level of the beneficiaries. These results are also aligned the previous studies. (Abbas et al. (2005), Asghar (2012), Bashir et al. (2010)).

F-value is found 316.58 which indicates the overall significance of the model. The value of \( R^2 \) is found .849 which shows that 84.9% variation in dependent variable (income) is explained by these above mentioned independent variables.

**Borrowers’ opinions about the Amount of Loan, Loan Procedure, Recovery Procedure, Interest Rate and PRSP Staff’s Behavior**

Borrowers were asked about the amount of loan, borrowing and recovery procedures, interest rate and staff’s behavior. All these questions are much significant for future policy making. Results are as follows.
The above table shows that most of the borrowers are not satisfied from the loan amount. They said that due to high inflation the inputs of any economic activity are getting expensive day by day. The disbursed amount of credit is not sufficient especially for livestock, dairy and poultry farming etc.

PRSP disburses group loans through the manager of the concerned CO. Second row in the table shows that most of the borrowers are satisfied from procedure of borrowing loan. They said that it is much easier for them to borrow a loan through manager of CO instead of visiting PRSP’s office.

In the third row of the table borrowers’ response about the recovery procedure is given. It is found that most of the borrowers are satisfied from the recovery procedure. They said that it is easy for them to deposit their monthly installment to the manager of CO instead of visiting every month to the PRSP’s office.

PRSP is charging 20% interest per annum on decreasing balance. Borrowers were asked about their satisfaction of interest rate. Fourth row shows that most of the borrowers are unsatisfied from interest rate. They said that it is reducing the purchasing power of the borrowers because they can’t afford the high amount of interest rate with the principal amount.

PRSP’s staff often visits the COs in their respective areas. An official must have to attend the monthly meetings of COs. Fifth row shows that most of the borrowers are satisfied from the staff’s behavior which represents a good quality of any organization.

Conclusion

The study was conducted to find out the impact of microcredit by PRSP in rural areas of District Sialkot. The empirical results reject the null hypothesis and conclude that loan participation has positive impact on the income of the beneficiaries. As the income of the beneficiaries increases, poverty automatically decreases. Microcredit helps the poors to expand their small business and earn greater profit to spend a prosperous life. It is observed that after loan participating by three or four years, most of the beneficiaries shifted upward from the poor class to lower middle class. Education also has positive impact on income while size of household is found insignificant. Some suggestions are given below for the betterment of PRSP and microfinance sector in Pakistan.

Suggestions/Policy Implications

- PRSP is charging 20% interest rate per annum. Borrowers have to pay not only the principal amount but also the amount of interest. Interest rate put on extra burden to the borrowers and decreases their profit as well as purchasing power. So, interest rate may be significantly decreased.
- PRSP and most of the other microfinance institutions are disbursement credit only for running business. Some persons have technical skills but don’t have adequate finance to initiate their
business. If a person has skills along with certified diplomas, PRSP may also give loan to him/her to start the related business.

- Education is the fundamental right of every person. PRSP may introduce some Student Loan Schemes at low markup and duration of repayments should be started after the completion of their studies on easy installments.
- PRSP launched skill development and short training programmes in some villages. These programmes may be started at macro level so that every interested borrower or villager can obtain benefits.
- State Bank should have effective and favorable policy for microfinance institutions/banks to promote the microfinance sector in Pakistan.

References


Cloud Technology and Business Strategies

Li Zhong Zhang, School of Economics, La Trobe University, Bendigo, Australia
l.zhang@latrobe.edu.au

Abstract— In today's business world, everything is becoming mobile, connected, interactive, immediate, and fluid. This is one of the driving forces behind the rise in cloud computing technology. As cloud computing is transforming global IT in the 21st century and creating surprising new opportunities for re-thinking business processes, this paper analyses how cloud technology can provide new levels of collaboration, agility, speed, and cost savings for enterprises of any size and type, and what business strategies should be adopted to utilize the power of cloud technology to enhance knowledge management and business performance. To ensure sustainable cloud market growth and, more importantly, increase the likelihood of cloud initiatives delivering positive return on investment (ROI), enterprises must evolve from ad hoc, disjointed cloud approaches to well-defined, effectively managed cloud procurement. On the other hand, the best cloud solutions can be designed to help enterprises become the builder and broker of services, maintaining control, building value, and leveraging the power of private and public clouds. In conclusion, the paper emphasizes that, as most enterprises are creating a hybrid service portfolio comprising services from many sources, it is critical that business management must align the right model to the right service in order to build, consume, and manage appropriate cloud services in an effective and secure way.

Index Terms— Cloud Technology, Cloud Computing Services, Cloud Solutions, Business Value, Business Strategies.

I. INTRODUCTION

Cloud technology has been described as an umbrella term to specify a range of sophisticated on-demand computing services initially offered by commercial providers, such as Amazon, Google, and Microsoft. It denotes a model on which a computing infrastructure is viewed as a cloud, from which businesses and individuals access applications from anywhere in the world on demand. The main principle behind this model is offering computing, storage, and software as a service [1].

The computing industry has seen several large paradigm changes over the past four decades. The first paradigm was established during the 1980s in a mainframe computing era which enabled business growth to be untethered from the number of employees needed to process transactions manually. The second paradigm was developed during the early 1990s in a personal computing era which empowered business users to run their businesses based on individual data and applications on their PCs. From the mid-1990s to mid-2000s, a decade of network computing built up an unprecedented level of transparency of information across multiple groups inside a company and an amazing rate of data exchange between enterprises. Each of these paradigm changes brought with it new economies of scale [2]. The cost-per-transaction, the cost of automating office and desktop processes, and finally the cost of network bandwidth fell quickly and enabled business users to apply ICT solutions more broadly to create business value. It is believed that cloud computing will help unleash the next wave of tech-enabled business innovation, which is called Smart Computing. The advent and eventual widespread adoption of cloud computing infrastructure and applications will be a major stimulus for the Smart Computing paradigm.

As an evolving paradigm, cloud technology can be adopted as a service model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Many researchers in the academic and business spheres have attempted to define exactly what cloud technology is and what
unique characteristics it presents. Buyya, Broberg, and Goscinski have defined it as follows: “Cloud is a parallel and distributed computing system consisting of a collection of inter-connected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resources based on service-level agreements (SLA) established through negotiation between the service provider and consumers [3].” Chee and Franklin have stated that “cloud computing is an information-processing model in which centrally administered computing capabilities are delivered as services, on an as-needed basis, across the network to a variety of user-facing devices [4].”

Cloud technology can be adapted as a service-delivery model to instantiate new business flexibility and scalability. Beyond the potential economic benefits, perhaps the most important attribute of cloud computing services is that they enable completely new business and technology solutions with enhanced business value. Certainly, there are numerous issues to be considered and perhaps addressed as the computing industry transitions to a new IT infrastructure model so as to serve growing business demands.

II. CLOUD SERVICES AND BUSINESS VALUE

In an attempt to analyze the evolution of cloud computing markets, Ried, Kisker, and Matzke from Forrester Research [5] have designed a reference frame of cloud computing taxonomy with a vertical dimension of levels of sharing cloud services (private cloud, hosted cloud, and public cloud), and a horizontal dimension of shared resources (infrastructure, middleware, applications, and information and processes).

To guide business professionals toward the cloud market opportunities, and improve industry understanding as a prerequisite for realizing those opportunities, Forrester’s cloud computing taxonomy (see Figure 1) introduces a comprehensive way to categorize cloud market offerings and understand their relationship with more traditional deployment models such as application service provider (ASP) and business process outsourcing (BPO). Forrester’s taxonomy of cloud computing markets provides vendors and customers with clear definitions and labels for cloud capabilities. With this taxonomy in hand, vendor strategists can position their offerings in the overall cloud market and better articulate their business value propositions to customers.

Figure 1: Forrester’s Cloud Computing Taxonomy
Private cloud (also called internal cloud or corporate cloud) is a marketing term for a proprietary computing architecture that provides hosted services to a limited number of people behind a firewall. Advances in virtualization and distributed computing tools have allowed corporate network and datacenter administrators to effectively become service providers that meet the needs of their staff and customers within the corporation.

Hosted (virtual private) cloud is a private cloud existing within a shared or public cloud. For enterprises and organizations who need a private cloud but don’t want to worry about the underlying hardware, a virtual private cloud service provides a compelling alternative. By focusing on resources and not hardware, the virtual private cloud increases the ease of management and provides a range of services, such as infrastructure services, integration-as-a-service, and business process outsourcing (BPO) services, to multiple departments within an enterprise or organization.

Public cloud is one based on the standard cloud computing model, in which a service provider makes resources, such as applications and storage, available to the general public over the Internet. Public cloud services, such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), and Business Process as a Service (BPaaS), may be free or offered on a pay-per-usage model. The main benefits of using a public cloud service are: (1) Easy and inexpensive set-up because hardware, application and bandwidth costs are covered by the provider. (2) Scalability to meet needs. (3) No wasted resources because you pay for what you use [6].

Modern computing is no longer about devices but is all about providing services, a natural progression that both consumers and enterprises are eager to embrace. As it can deliver those services, efficiently and with quality, at compelling price levels, cloud technology offers businesses to reduce capital expenses and allow users more functionality that they previously had accessed with foreseeable costs. Ubiquitously and quite definitively, cloud computing is answering the demand for sophisticated and flexible services.

From a business perspective, cloud services are composed of five essential characteristics which contribute to increasing business value [7] :

1. On-demand self-service. A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service provider.

2. Broad network access. Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, tablets, laptops, and workstations).

3. Resource pooling. The provider’s computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. There is a sense of location independence in that the customer generally has no control or knowledge over the exact location of the provided resources but may be able to specify location at a higher level of abstraction (e.g., country, state, or datacenter). Examples of resources include storage, processing, memory, and network bandwidth.

4. Rapid elasticity. Capabilities can be elastically provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be appropriated in any quantity at any time.

5. Measured service. Cloud systems automatically control and optimize resource use by leveraging a metering capability1 at some level of abstraction appropriate to the type of service (e.g., storage, processing, bandwidth, and active user accounts). Resource usage can be monitored, controlled, and reported, providing transparency for both the provider and consumer of the utilized service.
The wide variety of services categorized as cloud computing will change the computing industry significantly. New supplier business models will become evident in each pillar of the cloud taxonomy, with different market dynamics and evolution, ranging from incubation to mass adoption. Cloud service providers will also develop new engagement models with enterprise customers, for example, focusing on application standardization versus customization. And business strategists will come to grips with an increasing shift in user spending from products to services. Cloud computing will require an increased focus on community-driven innovation, capitalizing on the power of people both inside and outside the organization to define and create new offerings and services. It will demand IT-without-boundaries systems and processes that break down traditional silos and simplify access to information in order to deliver better business outcomes. On the other hand, implementing a cloud computing model means encouraging innovation by simplifying and standardizing underlying infrastructure. It entails the creation of efficient yet flexible computing foundations that can support the development of new services and the consistent delivery of quality user experiences. And it demands a focus on ensuring interoperability, resiliency and security in an integrated fashion [8].

III. CLOUD SOLUTIONS AND BUSINESS STRATEGIES

At the foundation of cloud solutions and applications is the broader concept of infrastructure convergence and shared platforms (see Figure 2). This type of data exchange and networking environment allows enterprises to get their applications up and running faster, with easier manageability and less maintenance, and enables an enterprise to more rapidly adjust IT resources to meet fluctuating and unpredictable business demand.

Cloud computing is a new model of consuming and delivering IT and business services. It enables users to get what they need, as they need it, from advanced analytics and business applications to IT infrastructure and platform services, including virtual servers and storage. It can provide significant economies of scale and greater business agility, while accelerating the pace of innovation [9].

Many business leaders have posed the question of whether the business adoption of cloud technology is just a new form of outsourcing. In fact, cloud solutions, in terms of their sourcing, management, and risk/opportunity profiles, more closely resemble managed services. Broadly, a managed service is the practice of transferring day-to-day management responsibility as a strategic method for improved
effective and efficient operations including production support and life-cycle management activities. Managed services and outsourcing are conceptually similar; however, the difference is in how they are structured and the degree to which they are customized. IT outsourcing has become a metaphor for a complex and highly structured transfer of operational and management processes to a third-party provider [10]. A managed service is the selection of a standard offering to source out a specific set of responsibilities or activities. In this way, managed/hosted services attempted to drive better costs through standardization, in contrast to the traditionally one-off structure of outsourcing deals. In this regard, public cloud services are a next logical step from hosted services, in the standardization of cloud services.

Cloud computing and solutions, in their many forms and flavors, will continue to evolve rapidly and assume increasingly critical roles within organizations as these technology platforms mature. Further, it is important to note that most organizations will use a combination of public, private, and hybrid cloud services. The hybrid cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability. Many enterprises and organizations have used managed services successfully; conversely, outsourcing remains a somewhat loaded term within the computing industry as many organizations have had somewhat mixed results with the strategy. At the risk of oversimplifying, the more standardized nature of managed services and solutions is a major part of their success. Building once and delivering many is a much more efficient process for a service provider than building once and delivering once. As business executives and IT leaders approach a potential public cloud services contract, leveraging the organization's experience and best practices with managed services contracts such as standardization, service-level definition, and contract management would enhance outcomes [11].

The availability of public cloud services sourcing, provisioning, and delivery options creates critical new enterprise questions and opportunities for business and technology architecture. When selecting external public cloud service options, it is not just about technology architecture, but the implications for other aspects of the computing infrastructure. At issue is how the technology infrastructure and business processes interact to shape operations, service delivery, and employee enablement. As the industry is still in the early phases of public IT cloud services evolution, the architectural implications are still evolving. Virtually all IT leaders and business executives within buyer organizations have been exposed to the term “cloud computing”, but as industry best practices, nomenclature and industry offerings continue to evolve rapidly, internal discussions, strategy formulation, and sourcing evaluations can often be confusing and frustrating. Because lower cost is often cited as a chief advantage of cloud computing, business executives often seek to embrace new options without a fully reasoned discussion of options [12].

It is certain that businesses can develop new services based on cloud technology as well as using the cloud to manage data intensive activities more efficiently. The major reduction in capital costs that cloud computing provides makes it attractive to small and medium sized enterprises (SMEs) with limited access to capital. However, it goes without saying that shifting potentially sensitive data outside of an organization's direct control creates risks. However, organizations have been managing similar risks for years. Yes, this is a new and evolving technology, but companies have long relied upon business process outsourcers to handle payroll and employee benefit administration. There are clear precedents for managing sensitive data within most organizations. Security and privacy affect the entire cloud computing stack, since there is a massive use of third-party services and infrastructures that are used to host important data or to perform critical operations. In this scenario, the trust toward providers is fundamental to ensure the desired level of privacy for applications hosted in the cloud. The use of cloud services raises new issues in regard to privacy, security, trust, data transfer capacity and lock-in with service providers. Privacy legislation which pre-dates the development of cloud-based services needs to be reviewed. Trust arrangements between service providers and users of cloud services may
need new and additional elements to cover all critical interactions. Service providers need to ensure that data is not lost. Data transfer capacity will need to be enhanced and the cost reduced. These issues can all be addressed and managed, but some changes to laws and regulations may be required [13].

Securing information within a cloud computing environment requires three levels of security: network security, host security, and application security. These security needs are also present within in-house infrastructure, and are impacted directly by access policies and work flows of an entity which owns and manages its resources. When an entity moves to cloud computing there are security challenges at each of the three levels, as well as those dealing with the operation of the business and the individuals involved in the system’s deployment and management. Although these security challenges are exacerbated by cloud computing, they are not specifically caused by it [14].

International legal issues also need attention. When data are moved into the cloud, providers may choose to locate them anywhere on the planet. The physical location of data centers determines the set of laws that can be applied to the management of data. For example, specific cryptography techniques could not be used because they are not allowed in some countries. Similarly, country laws can impose that sensitive data, such as patient health records, are to be stored within national borders.

IV. CLOUD MARKET GROWTH: THE CASE STUDY OF AUSTRALIA

The worldwide market for cloud services continues to grow at a blistering pace, reaching $21.5 billion in 2010. It is forecast that public IT cloud service spending will reach $72.9 billion worldwide in 2015, a compound annual growth rate of 27.6%, and a tripling of public IT cloud spending. As the nature of IT evolves to the next technology platform, a virtual computing–based architecture, it is not just the technology that is changing, but the role of the IT organization and the professionals within it. Australia is the most mature cloud market in the Asia Pacific region by most measures. According to Forrester's Forecast [15], the public cloud market (BPaaS, SaaS, PaaS, IaaS) in Australia will grow from $732 million in 2011 to $3.2 billion in 2020. The three segments (applications, cloud-based integration and infrastructure) of the virtual private cloud market in Australia will grow from $157 million in 2011 to $2.4 billion in 2020. Strong concerns over data residency and sovereignty remain potential barriers to broad cloud adoption, along with existing regulatory constraints limiting offshore storing of data. However, the benefits of cloud computing in reducing capital expenditures and simplifying service access for Australian businesses and government agencies will outweigh these concerns (see Figure 3).
Successful rollout of the National Broadband Network (NBN) in Australia will spur cloud demand. Along with the release of the Australian Federal Government's Cloud Computing Strategic Direction Paper in April 2011, it is expected government initiatives to drive increased demand for cloud-based services across all cloud market segments. It is also expected that the Australia government's "Whole-of-Government" approach to data center consolidation over the next 10-plus years to increasingly steer agencies such as the Australian Taxation Office (ATO) and Department of Immigration and Citizenship (DIAC) toward cloud-based delivery of services, both internally and externally.

The presence of well-known global players has also helped spur cloud adoption. This is particularly true for SaaS solutions as most global SaaS vendors established a presence in Australia long before expanding into the rest of Asia, hence driving early penetration relative to the broader region. For 2011, SaaS represented 65% of total public and virtual private cloud spending in Australia, dropping to 43% by 2015 and 34% by 2020. However, we expect growth to slow after 2015 as the SaaS market comes closer to saturation. SaaS growth from 2015 to 2020 will by 8.4%.

Dynamic infrastructure services will grow strongly over the next three to four years. By 2014, the dynamic infrastructure market in Australia will overtake IaaS, reflecting the strong desire among Australia-based organizations to control how and where their data is stored. Currently 7% of total Australian public and virtual private cloud spending, the dynamic infrastructure services segment will grow to 17% by 2015 and 24% by 2020.

V. CONCLUSION

The world is changing. A new reality is emerging for enterprises and organizations of every size from every part of the planet. It’s called the cloud, a profound evolution of the computing industry with revolutionary implications for business and society, creating new possibilities and enabling more efficient, flexible and collaborative computing models. Technology adopting processes are often time consuming and often involve multiple organizational constituencies with various agendas. Business executives remain acutely focused on cloud projects that create business differentiation, accelerate time to market, or enable new capabilities with potential business impact. Business leaders are often focused on platforms, sourcing options, or delivery models that fuel capability as well as improve cost efficiency.

The cloud market is in a period of rapid expansion, affecting both providers and their service offerings. Pricing varies from very short-term contracts, literally minutes of usage, to multiyear contracts with associated discounts. The scope of the public cloud service offerings varies even more widely. The long-term outlook is that externally sourced virtual resources, that is, the public cloud, have the potential to reduce the cost of capacity. However, there is no guarantee, even likelihood that any particular project or application will certainly be hosted more effectively with hosted or virtual compute resources. As with most complex engineering questions, the answer is a function of many variables. Nevertheless, public cloud services will evolve rapidly into a major platform, and for that reason, enterprises should continue to explore new options and applications albeit with the caution appropriate to an evolving technology platform. As most enterprises are creating a hybrid service portfolio comprising services from many sources, it is critical that business management must align the right model to the right service in order to build, consume, and manage appropriate cloud services in an effective and secure way.

REFERENCES


Production and Marketing of Fresh Mangoes in Krishnagiri District of Tamil Nadu

T. Samsai, Assistant Professor, Department of ARM, CARDS, TamilNadu Agricultural University, Coimbatore – 641003, TamilNadu, India. (tsamsai@yahoo.co.in)

K.Mahendran, Associate Professor, Department of ARM, CARDS, TamilNadu Agricultural University, Coimbatore – 641003, TamilNadu, India. (mahanan@gmail.com)

S.Praveena, Research Scholar, Department of ARM, CARDS, TamilNadu Agricultural University, Coimbatore – 641003, TamilNadu, India. (sspriyamba@gmail.com)

Abstract

The present study was conducted in Krishnagiri district of TamilNadu for the mango growers of different farm size groups. This study was to examine the production and marketing of mango in Krishnagiri. However, the study also looked at markets, information flows, technology, service provision, problem faced by the farmers, and other factors affecting the mango marketing. A sample of 30 mango growers was selected based on the Convenience sampling. The study was conducted in the month of May- June 2012. The relevant information was gathered through primary and secondary data. Percentage analysis, Garrett ranking and benefit cost ratio were used for the analysis of data. The farmers were facing problems in processing and getting market information. The extension service providers also lack information on changing market needs and are not able to advise the producers appropriately. Bringing various stakeholders together through different forums would strengthen the linkages and improve information flow regarding the production and marketing of Mango.

Keywords: Benefit cost ratio, Cost of cultivation, Garrett ranking techniques and Marketing

I. Introduction

Mango is the world’s most popular fruit and is referred to as the King of Fruits. Worldwide Mangoes are grown in over 60 countries and half of the produced and traded tropical fruits are mango. The mango fruit grows well under (warm) tropical climate, with long dry season (over three months) followed by sufficient rains. Originally from India, mangoes have been around for over 5,000 years. Mangoes are excellent source of vitamins A, C and Fibre. Indian mangoes come in various shapes, sizes and colours with a wide variety of flavour, aroma and taste.

The Indian mango is the special product that substantiates the high standards of quality and bountiful of nutrients packed in it. A single mango can provide up to 40 percent of the daily dietary fibre needs – a potent protector against heart disease, cancer and cholesterol build-up. In addition, this luscious fruit is a warehouse of potassium, beta- carotene and antioxidants. In India, mangoes are mainly grown in tropical and subtropical regions from sea level to an altitude of 1,500m. Mangoes grow best in temperatures around 27˚C. India is the home of about 1,000 varieties. However, only a few varieties are commercially cultivated throughout India. Andhra Pradesh, Uttar Pradesh, Karnataka, Bihar and TamilNadu are the major states producing mangoes in India. These mangoes could be value added and it can be exported to various countries like Arab countries, Japan, Spain, Bangladesh, Nepal Singapore etc.,
Table 1. Major States Producing Mango in India during 2009-10

<table>
<thead>
<tr>
<th>States</th>
<th>Area (‘000ha)</th>
<th>Production (‘000MT)</th>
<th>Productivity (ha/MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>480.4</td>
<td>4058.3</td>
<td>8.4</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>276.4</td>
<td>3588.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Karnataka</td>
<td>153.8</td>
<td>1694.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Bihar</td>
<td>146.3</td>
<td>995.9</td>
<td>6.8</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>132.7</td>
<td>636.9</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Source: National Horticulture Board, India

Tamil Nadu accounted for 6-7 per cent of the total Indian mango production in recent years. Krishnagiri, Dindugal, Theni and Dharmapuri are the major districts producing mango in Tamil Nadu. The important commercial varieties in Tamil Nadu are Alphonso, Totapuri, Banganapalli Neelum and Sendura. Bangladesh, Arab countries and Kuwait are the main importers of fresh mango from Tamil Nadu. The mango pulp can be exported into Arabia, Netherlands and UK from Tamil Nadu. The main objective of the study is to examine the production and marketing of mango and problems faced by the farmers in mango marketing in Krishnagiri district.

II. Review of Literature

Ivan-Damir and Mustafa (2009) examined the performance of apple value chain in Croatia and reported that investing in the apple processing industries and infrastructure can increase value addition.

FAO (2007) studied the Value analysis of mango in Kenya and reported that capacity building of farmers on crop husbandry, technological application and overall farm management are key to the development of the value chain.

According to Rathore (2007) the quality of mangoes are highly influenced by postharvest handling techniques due to its high perishable nature and its susceptibility to postharvest disease, extremes of temperature and physical injury. Mangoes thus have short shelf life and reaches respiration peak of ripening process between three to four days after harvest at ambient temperature.

Nora Patricia and Castaneda (2010) examined the assessment of Haitian Mango Value Chain and reported that it is important to generate and establish technical assistance services including training to local personnel, participatory development of technological packages adapted to local conditions with support of experts and to improve current harvest quality and quantity for further development of value chain.

Jabir Ali and Sushil Kumar (2010) examined the contractual Arrangements in the Mango Value Chain. They reported that important implication for the contract theory, contract design and enforcement in the era of agricultural transformation and integration. Designing effective value chain models based on successful contract system.

III. Methodology

Period of Study
The study was conducted during May- June 2012.

Statistical Techniques used

The statistical techniques used to analyze this study are Percentage analysis, Garrett’s ranking technique and Benefit cost ratio.

In order to analyze the production and marketing of mango in Tamil Nadu, both primary and secondary data were collected. Krishnagiri district was purposively selected for this study because it has large number of Mango growers. For this study, thirty mango growers have been selected for the study based on convenience sampling method. Secondary data was collected from different magazines, websites, newspapers and government publications. For collection of primary data from respondents (farmers) separate well structured interview schedule was prepared based on the objectives of the study and pretested.
IV. Results and Discussion

The general characteristics of the sample farmers include the age, education, type of farmers and farming experience. The demographic details are presented in Table 2.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Characteristics</th>
<th>No. of respondents</th>
<th>In %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>4</td>
<td>13.33</td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>6</td>
<td>20.00</td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>11</td>
<td>36.67</td>
<td></td>
</tr>
<tr>
<td>&gt;50</td>
<td>9</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>Educational qualification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>4</td>
<td>13.33</td>
<td></td>
</tr>
<tr>
<td>SSLC</td>
<td>8</td>
<td>26.67</td>
<td></td>
</tr>
<tr>
<td>HSC</td>
<td>9</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>Under Graduates</td>
<td>5</td>
<td>16.67</td>
<td></td>
</tr>
<tr>
<td>Post Graduates</td>
<td>4</td>
<td>13.33</td>
<td></td>
</tr>
<tr>
<td>Annual Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;2,00,000</td>
<td>6</td>
<td>20.00</td>
<td></td>
</tr>
<tr>
<td>200,001-500,000</td>
<td>17</td>
<td>56.67</td>
<td></td>
</tr>
<tr>
<td>&gt;5 lakh</td>
<td>7</td>
<td>23.33</td>
<td></td>
</tr>
<tr>
<td>Type of farmers (land holdings)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marginal (&lt;1 ha)</td>
<td>6</td>
<td>20.00</td>
<td></td>
</tr>
<tr>
<td>Small (1-2 ha)</td>
<td>17</td>
<td>23.33</td>
<td></td>
</tr>
<tr>
<td>Medium (2-5 ha)</td>
<td>10</td>
<td>33.33</td>
<td></td>
</tr>
<tr>
<td>Large (&gt;5 ha)</td>
<td>7</td>
<td>23.33</td>
<td></td>
</tr>
<tr>
<td>Experience in Mango cultivation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 years</td>
<td>4</td>
<td>13.33</td>
<td></td>
</tr>
<tr>
<td>5-10 years</td>
<td>12</td>
<td>40.00</td>
<td></td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>14</td>
<td>46.67</td>
<td></td>
</tr>
</tbody>
</table>

The general characteristics of the sample farmers include the age, education, type of farmers and farming experience were discussed. It could be concluded that most of the mango growers were old age persons and they had a very good exposure towards mango cultivation and better experience. Mostly all the farmers were educated and it was easy to get information through newspaper and other modes. Majority of the farmers had annual income of 2-5 lakh category followed by more than 5 lakh. Most of the farmers were small and medium size farmers.

Awareness about GAP practices

Good Agricultural Practices (GAP) are practices that address environmental, economic and social sustainability for on-farm processes, and result in safe and quality food and non-food agricultural products. Economic viability, environmental sustainability, social acceptability and food safety and quality are the four pillars of GAP.

<table>
<thead>
<tr>
<th>Awareness of GAP</th>
<th>No of respondents</th>
<th>Percentage to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware</td>
<td>22</td>
<td>73.33</td>
</tr>
<tr>
<td>Not Aware</td>
<td>8</td>
<td>26.67</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.00</td>
</tr>
</tbody>
</table>

It could be concluded that most of the mango growers aware about the GAP practices. Nearly 27 per cent of the farmers not aware about the GAP practices for mango cultivation. So, effort should be taken increase the awareness level of GAP practices of mango cultivation.
Table: 4 Sources of information about GAP practices

<table>
<thead>
<tr>
<th>Sources</th>
<th>No of respondents</th>
<th>Percentage to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>18</td>
<td>81.82</td>
</tr>
<tr>
<td>Neighbors</td>
<td>2</td>
<td>9.09</td>
</tr>
<tr>
<td>Media</td>
<td>2</td>
<td>9.09</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Majority of the farmers aware about the GAP practices through trainings given by National Horticulture board and TamilNadu Agricultural University. So, the NHB & TNAU should improve the number trainings to the farmers which will lead to the better mango cultivation. Nearly 18 per cent of the respondents were aware through neighbors and media. So effect should be taken to increase source of information through media and neighbors.

Table: 5 Sources of market information

<table>
<thead>
<tr>
<th>Sources</th>
<th>No of respondents</th>
<th>Percentage to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends and Neighbors</td>
<td>19</td>
<td>63.33</td>
</tr>
<tr>
<td>Traders</td>
<td>7</td>
<td>23.33</td>
</tr>
<tr>
<td>Magazines</td>
<td>2</td>
<td>6.67</td>
</tr>
<tr>
<td>Media</td>
<td>2</td>
<td>6.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

It is evident from the table 5 indicates friends and neighbors were the main source of market information for the mango growers followed by traders, magazine and media. Thus it could be concluded that advertisements in magazines and exhibitions related to mango cultivation should be improved by the traders. Market information in magazine and media will leads to the higher reach of message to the farmers.

Problem faced by the farmers

Garrett rank was used to analyze the problems faced by the respondents in Mango production and marketing was analyzed and given in the table 6.

Table: 6 Problem faced by the farmers

<table>
<thead>
<tr>
<th>Problems</th>
<th>Garrett score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Price</td>
<td>75</td>
<td>I</td>
</tr>
<tr>
<td>Processing</td>
<td>59</td>
<td>II</td>
</tr>
<tr>
<td>Packaging</td>
<td>51</td>
<td>III</td>
</tr>
<tr>
<td>Lack in market identification</td>
<td>34</td>
<td>IV</td>
</tr>
<tr>
<td>Risk financing</td>
<td>33</td>
<td>V</td>
</tr>
</tbody>
</table>

From the above table it could be explained that most of the farmers got low price for their production followed by difficulty in processing of mangoes, packaging problem, difficulty in market identification and difficulty in getting finance for the working capital management for the mango production. Information regarding the market price and market identification will be given to the farmers through media to get higher price for their products. Training will be provided with the help of NHB in processing and packaging.

Cost of Cultivation

The cost of cultivation (Alphonso and Thothapuri) for producing better quality mangoes were showed in the table 7. Working expenses were only considered for calculation. The total cost for production of Alphonso and Thothapuri (Rs.37,440/acre and Rs.30,460/acre) consists of land preparation, farm yard manure, chemical fertilizer, labour cost, processing cost etc., The farmer sold the produce of Alphonso for export at the rate of Rs.50/kg and(Alphonso and Thothapuri) for
domestic market Rs.28/kg and Rs. 23/kg. The total selling price of both was Rs.90,800 and Rs.73,100. The respondents got the net profit of Rs.53, 400 for alphonso and Rs.42, 640 for Thothapuri every mango season. The BC ratio was 2.4. The average yield was 2.8 tonnes for alphonso and 3.8 tonnes for thothapuri.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Particulars</th>
<th>Alphonso</th>
<th>Thothapuri</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Land Preparation (Ploughing)</td>
<td>60 trees/ac</td>
<td>60 trees/ac</td>
</tr>
<tr>
<td>2</td>
<td>FYM</td>
<td>Rs. 48/tree</td>
<td>Rs. 37/tree</td>
</tr>
<tr>
<td>3</td>
<td>Chemical Fertiliser</td>
<td>Rs. 97/tree</td>
<td>Rs. 86/tree</td>
</tr>
<tr>
<td>4</td>
<td>Application of Pesticides</td>
<td>Rs.146/tree</td>
<td>Rs.90/tree</td>
</tr>
<tr>
<td>5</td>
<td>Labour Cost for all operation</td>
<td>Rs.73/tree</td>
<td>Rs.73/tree</td>
</tr>
<tr>
<td>6</td>
<td>Spraying machinery cost</td>
<td>Rs.50/tree</td>
<td>Rs.50/tree</td>
</tr>
<tr>
<td>7</td>
<td>Watering Charges</td>
<td>Rs.100/tree</td>
<td>Rs.80/tree</td>
</tr>
<tr>
<td>8</td>
<td>Harvesting Charges</td>
<td>Rs.50/tree</td>
<td>Rs.50/tree</td>
</tr>
<tr>
<td></td>
<td><strong>Total Cost of Production</strong></td>
<td>37440</td>
<td>30460</td>
</tr>
<tr>
<td></td>
<td>Farmer Selling Price for Export Quality (1 ton)</td>
<td>Rs.50/Kg</td>
<td>Rs.23/Kg</td>
</tr>
<tr>
<td></td>
<td>Better Quality in Domestic Market (1 ton)</td>
<td>Rs.28/Kg</td>
<td>Rs.12/kg</td>
</tr>
<tr>
<td></td>
<td>farmers' Selling price</td>
<td>90800</td>
<td>73100</td>
</tr>
<tr>
<td></td>
<td>Farmers' Net Profit</td>
<td>53400</td>
<td>42640</td>
</tr>
<tr>
<td></td>
<td>Benefit Cost Ratio</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Average yield</td>
<td><strong>2.8 tonnes</strong></td>
<td><strong>3.8 tonnes</strong></td>
</tr>
</tbody>
</table>

**Conclusion and Recommendations**

Adding value to the product creates extra value to the final product and makes it demanded by consumers. Every ripening stage of mango used in processing into different product and the value added processed produce hereof have market opportunity in local as well as export markets. Value additions at the farm level ensure the shelf life of fresh fruits and quality of the processed product. Different alternative uses of the byproducts of mango processing can be implemented by processing into valuable products which at local level seems useful. Indian mango farmers need to adopt the scientific cultivation practices, proper post harvest handling, grading and packaging which leads to value addition to the fruit and final product. Quality regulations, certifications such as HACCP and better marketing need to be implemented by the traders and exporters. Some of the recommendations were given below.

- Technology adoption gap to be bridged to upgrade the low grade mangoes to better quality mangoes for domestic markets and to export quality mangoes.
- Information dissemination should be done through mango growers association.
- Fresh mango processing units should be initiated through different supporting schemes.
- Storage facilities should be improved to reduce the price fluctuation, heavy competition and excess supply.

**Reference**


[10] www.apeda.gov.in


[12] www.indiastat.com

Setting up a Joint Venture between Pharma and Biotech companies – A Study

DR.H.N.RAMESH, Associate Professor, Kuvempu University, India
E –Mail: rameshhn2003@yahoo.co.in

Mr. AJAY KUMAR T.R, Research Scholar, Dept. of Business Administration
B.N.Bahadur Institute of Managament Sciences, University of Mysore
E –Mail: ajayphd@gmail.com

ABSTRACT

The competitive and fragmented Indian pharmaceutical market had multiple players but none had a sizable market share. Most leading Indian Biotech and Pharmaceutical companies had adopted Joint Ventures as a global growth and expansion strategy.

Joint venture is an important corporate strategy, the firms follow in recent years to reap the superior benefits from the markets. Although, there are host of factors influence companies to form venture, cost of commercialization and shorter exclusivity duration are the main driver in most of the Joint Ventures. In recent years more number of ventures can be seen in the Pharma and Bio-tech industry than others. Research and Development, Technology, Investment and Cross boarder marketing opportunities are attributed to be responsible for increased ventures in for Pharma and Bio-tech industry.

This paper tries to understand the dynamics, competition and consolidation in the Biotech & Pharmaceutical industry & the need for Joint Ventures as part of the business expansion strategy. The article also discusses the case of joint venture between Sun Pharma & Merck & Co.

Key words: Joint Venture, Strategic alliance, Pharmaceutical, Bio-technology.

INTRODUCTION

A joint venture (often abbreviated JV) is an entity formed between two or more parties to undertake economic activity together (Alvesson, 2008). The parties agree to create a new entity by both contributing equity, and they then share in the revenues, expenses, and control of the enterprise. The venture can be for one specific project only, or a continuing business relationship such as the Fuji Xerox joint venture.

The goal of a joint venture are often the same as those in a licensing/R&D structure, the main difference seems to be that the biotech company has either the technology or the size (with a sizable cash reserve) to engage in an equal partnership with a pharmaceutical company. Another possible reason for entering into joint ventures may be the complexity of the collaboration (more complex projects require closer collaboration) or the number of partners (multiple partners requires a new organizational structure).

Multinational firms are frequently confronted with restrictions about the ownership structure of their foreign operation by local governments. In particular, developing and transition countries often impose shared ownership agreements, hoping that this might facilitate beneficial technology spillovers for their local industries (Bengtsson and Bengtsson, 1995). Multinationals, on the other hand, are not

1 http://en.wikipedia.org/wiki/Joint_venture as on 04th December 2009
always happy about such forced international joint ventures, precisely because of the risk of involuntary spillovers.

Declining productivity, through Research & Development, rising costs of commercialization, increasing buyer influence, and shorter exclusivity durations have driven the average cost of launching a successful new drug to $1.7 billion, reducing minimum expected returns on new investments to an unsustainable level of 5%\(^2\). To facilitate drug development and to lower the cost and risk of launching new drugs on their own, pharmaceutical companies have increasingly turned to strategic alliances with biotechnology companies (Lundahl and Skarvad, 2005). These alliances can be categorized roughly as follows: 1) co-marketing agreements; 2) R&D/ licensing arrangements; 3) joint ventures; and 4) Merger & Acquisitions. In 2003, the U.S. Food and Drug Administration (FDA) approved only 21 new drugs, marking a steady decline since a peak of 53 in 1996\(^3\).

Developing new products involves high costs & longer durations which have resulted in pharmaceutical companies collaborating with biotechnology\(^4\) companies to aid drug development and to lower the cost and risk of launching new drugs on their own. Since 1998, 20,000 alliances have been formed in the industry, with an annual average growth rate of 25%\(^5\).

Alliances among biotech & pharmacy firms are not a unique phenomenon in the industry. The frequency of firms participating in inter-firm collaborations has increased dramatically over the last fifteen years. Revenues from alliances have more than doubled during the 1990s, increasing to 21% for the top 1,000 U.S. firms by 1997\(^6\). This trend reflects the perceived benefits from collaboration. Firms may transfer technologies, achieve economies of benefit, and access unique advantages that may be difficult to develop in-house. Firms may also partner with competitors to set standards in an industry or to meet difficult time goals for development of new technologies.

The below table indicates the Volume and Value of deals during 1997-2007. It clearly shows that both the value & volume are increasing rapidly over the past decade & has gained a sprint effect since 2005 (in de Wit and Meyer, 1998).

![Figure 1](http://www.globalbusinessinsights.com/)

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\(^3\) Peter Landers, *Drug Industry’s Big Push into Technology Falls Short*, WALL ST. J., February 24, 2004


\(^6\) J.R. HARBISON & P. PEKAR, JR., *SMART ALLIANCES: A PRACTICAL GUIDE TO REPEATABLE SUCCESS* pg. 24
Intellectual property rights are under risk during alliances due to unintended transfer of valuable technology or know-how to their partners. These risks can be mitigated by choosing an appropriate alliance structure. Firms have a myriad of forms to choose from in organizing their alliance activities, ranging from simple licensing arrangements to more complex forms, such as the equity & non-equity joint venture (Banal Estanol and Seldeslachts, 2003). These collaborations generally involve a contribution of technology and/or R&D efforts by at least one party (usually the smaller party) and some sort of investment and/or service by at least one party (usually the larger party). Formal structure provides a means for firms to set out partner rights and obligations, articulate alliance goals and expectations, align incentives, and provide a framework for decision making and adapting to unforeseen contingencies.

The unique formation of the pharma-biotechnology industry which has all the ingredients such as the staggering financial needs, the unpredictable and catastrophic liability from drug development—has helped trigger the recent boom in alliances. Recent studies have shown that pharma-biotech alliances are 30% more likely to gain FDA approval than a drug developed independently.  

PHARMA-BIOTECH INDUSTRY

The makeover of the pharmaceutical industry over the past ten years has profoundly altered the environment of technology transfer in life sciences industry. With the expiration of key patents for many of the industry’s leaders, the pharmaceutical industry has come under increasing pressure to invigorate its channels with potential transfers with their biotech counterparts.

PHARMACEUTICAL INDUSTRIES

The pharmaceutical company spends hundreds of millions of dollars to pass the drug through the regulatory authorities and to market the drug to consumers, with the goal of extracting as much profit as possible before the patent on the drug expires. This business model primarily aims to do three things jointly: 1) fill the regulatory channel with new drugs; 2) finding new competitive drugs for the ones already in the market; and 3) developing new formulations of proven highly popular drugs.

The business model that has served the pharmaceutical industry well for much of its existence is under attack from two different trends. First, the cost of drug development has risen over the years, requiring larger investments to discover the highly popular drugs. Secondly, the in-house research departments of large pharmaceutical companies have not been able to match the fast growing innovative new technologies. In 2003, the U.S. Food and Drug Administration (FDA) approved only 21 new drugs, marking a steady decline since a peak of 53 in 1996.

The number of joint ventures in pharma-biotech industry has swelled in the last ten years. Pharmaceutical companies contribute to pharma-biotech partnerships in two major ways. Pharmaceutical companies generate revenues from their patented drugs, which they use to promote their internal and external R&D efforts. Secondly, they are capable of significant manufacturing, distribution, marketing and legal expertise to sustain in the market—skills that are vital to bring a drug contender to market.

BIOTECH INDUSTRY

The biotech industry has evolved over the past twenty five years. In the initial years, many players tried to follow the examples of Genentech and Amgen in becoming self and fully run pharmaceutical companies, expecting to displace the big pharmaceutical companies. When the odds of successfully launching an independently marketed therapeutic product were found to be economical
than once expected, many of these firms switched gears to focus more on research and adopted multiple alliances to outsource the sales and distribution and legal tasks that the big pharmaceutical companies were better equipped to handle.

Although private investment in biotech startups reached $41 billion in 2000, two years later, there was net investment of only $1.9 billion (less than the venture capital investment of 20 years earlier)\(^9\). And since 2000, there have been very few significant public equity financing windows open to biotechnology companies. In a down market, the cost of equity capital can be prohibitively high, assuming that it is available at all.

There are two points of concern in any collaboration between a pharmaceutical company and a biotech company. For the pharmaceutical company, there is always a danger that it is budding a potential competitor through its collaboration with the biotech. A second point of concern lies in the fact that big and small companies have varied interests & many a times cannot be achieved along with the partner whose strategy is different and difficult to mitigate. In such cases, it is feasible to enter into a Joint Venture wherein the identities & strengths of both the partners remain without any compromises.

Alliances between pharmaceutical companies and biotech firms can take a variety of organizational forms and involve many different payment structures—milestone compensation, equity inoculation, royalty, etc. Thoughtful and properly structured collaborations can cut down costs, inject new product lines, increase market penetration and profits, and create long-term value for participants.

The basic organizational forms, as are follows:

- Joint ventures, either formal or informal, in which a new entity is created to develop and/or market the candidate drug.
- Co-promotion or co-marketing deals under which both partners market approved products, the former under a single name—typically with a unified marketing effort directed by the pharma company—and the latter with separate marketing efforts not under a common name.
- Licensing agreements that give the pharmaceutical company rights to use the technology combined with discovery research and/or product development activities in which each party has a continuing role.
- A purchase of equity in the biotech partner by the big pharma partner.

JOINT VENTURE BETWEEN PHARMA AND BIOTECH

ABOUT SUN PHARMACEUTICAL INDUSTRIES LTD.

Established in 1983, listed since 1994 and headquartered in India, Sun Pharmaceutical Industries Ltd. (Reuters: SUN.BO, Bloomberg: SUNP IN, NSE: SUNPHARMA, BSE: 524715) is a Global, integrated, specialty pharmaceutical company. The company manufactures and markets a large number of pharmaceutical formulations as branded and incrementally innovative generics in India, the United States and across several Emerging Markets.

ABOUT SUN PHARMA ADVANCED RESEARCH COMPANY LTD. (SPARC)

SPARC Ltd. is a listed, independent R&D company that discovers and develops new molecules and novel drug delivery systems, with a 220+-strong team of scientists and four R&D centers.

SPARC's delivery system projects focus on developing platform technologies that enhance patient convenience or compliance, such as oral (gastro retentive innovative device, wrap matrix technology), injectables (nanoparticulate formulations, biodegradable depots), dry powder inhalers, ophthalmic technologies (swollen micelle and gel free reservoir). Some products based on these technologies are marketed in India.

ABOUT MERCK & CO. INC

Today's Merck is a global healthcare leader working to help the world be well. Merck is known as MSD outside the United States and Canada. Through our prescription medicines, vaccines, biologic therapies, and consumer care and animal health products, Merck has customers and operate in more than 140 countries to deliver innovative health solutions. They have stern commitment to increasing access to healthcare through far-reaching policies, programs and partnerships.

THE MARRIAGE BETWEEN SUN PHARMA & MERCK & CO.

Indian pharma major Sun Pharmaceutical Industries announced a 50:50 strategic joint venture partnership in April 2011 with global drugmaker Merck and Co Inc to develop, manufacture and commercialize new innovative drugs in emerging markets over the next 2-3 years.

The JV is likely to develop new combinations and formulations in Asia-Pacific, Latin America, Eastern Europe, West Asia and Africa.

"This joint venture reinforces our strategy of partnering to launch products using our highly innovative delivery technologies around the world," Sun Pharma Chairman and Managing Director Dilip S Shanghvi said.

Merck, known as MSD outside the US and Canada, operates in 140 countries in prescription medicines, vaccines and biological therapies, while Sun Pharma manufactures and markets a large number of pharmaceutical formulations as branded generics in India, the US and several other markets.

MSD expects that by 2013 over 25 per cent of its total revenues would come from the EMs that are expected to drive 90 per cent of the world's pharma growth, 75 per cent of it coming from branded generics. In these markets, the growing burden of chronic disease, such as cardiovascular disease, diabetes and hepatitis, along with an increasing population and economic prosperity, is leading to an increased demand for branded generics. Merck, will provide the clinical and registration expertise, besides the geographical footprint. Sun would provide access to its research technologies and manufacturing facilities.

The partnership combines Sun Pharma's proven track record in product development using Sun Pharma Advanced Research Company (SPARC) proprietary platform technologies, and Sun Pharma’s world-class manufacturing network with Merck's clinical development and registration expertise and a broad, geographic footprint.

CONCLUSION

The Joint Venture landscape is evolving, particularly at large pharma corporations looking for the next blockbuster. As their R&D productivity continues to decline, smaller companies with attractive products have taken advantage of the seller’s market for new compounds. Businesses that only a decade ago would have been happy to sell marketing rights are now equally interested in acquiring new capabilities. For drug candidates that are in early stages of development, a joint venture structure seems to make the most sense. Biotech companies ceded the greatest control when their relative position vis-à-vis the pharmaceutical company was weakest.

Although biotech companies take a substantial discount on their first deal, this nevertheless appears to be rational, because a deal with a pharmaceutical company sends a positive signal to prospective investors. We find that biotech firms that have signed a deal receive substantially higher valuations from venture capitalists and other investors at subsequent financing rounds. The magnitude of this premium ($19.5 million in the preferred first-difference specification) offsets most of the discounted deal payments accepted by inexperienced biotech firms ($26.9 million). This evidence of positive effects of deals on subsequent financing is more consistent with the signaling model than with the simple gains from trade model.

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Fiscal Federal System in India

Dr. B.ADDAI, Associate Professor & Head, Department of Economics, Dr. B.R. Ambedkar University, Srikakulam, Andhra Pradesh – 532410

N. Santosh Ranganath, Faculty Member, Dept. of Commerce and Management Studies Dr. B.R. Ambedkar University, Srikakulam, Andhra Pradesh – 532410

Abstract: Among developing countries, India with a federal constitution is a case with relatively greater degree of fiscal federalism. However, in terms of delivering public services, mobilizing physical and human resources, harnessing the synergies and unleashing incentives to exploit the developmental potential, regional and local fiscal autonomy has worked with varying degrees of successes even within the country. In some states, fiscal federal system has been more successful than in others. The important reason for the examination of fiscal federalism in Indian context is the statutory recognition of the third tier of fiscal structure and evolution of formal three-tier federalism subsequent to the 73rd and 74th Constitutional amendment in 1992. The introduction of the third tier of fiscal authority has met with varying degree of successes in delivering public services in different States and it is important to examine extent of sub-State decentralization in different States. This paper is an attempt to provide a more complete picture of the fiscal federalism incorporating all the three tiers of government.

Keywords: Economist, Empirical Evidence, Federal System, Macroeconomic Stability.

Introduction

The idea of fiscal federalism has been paid a great attention by academicians and policy makers alike in recent period. Many Economists find inherent merit in fiscal federal system in India which is considered to be a component of human wellbeing. In this concept, the policy makers see a panacea for many ills afflicting the society. It is expected to achieve many things like, enable efficient allocation of resources, improve governance, accelerate economic growth, reduce poverty, attaining a gender balance and empowering weaker sections of the society. Of course, there have been a variety of reasons and motivations for decentralization in different countries. This includes democratization of polity, advent of multi-party system, transition from planned to market economy and accommodating diverse ethnic, linguistic and religious secular spirit of identity. Empirical evidence is shown as an important condition for decentralization to achieve efficient and equitable delivery of public services. The experiences in developing countries in particular, underline the fact that there is much to be done to create necessary conditions for fiscal federalism achieving its objectives. The co-ordination requirements between different governmental levels are even more stringent in regard to achieving effective macroeconomic stabilization and desired State of redistribution. The problems are particularly severe in developing and transitional countries.

In India there are number of reasons for the analysis of fiscal federal system. The adoption of market oriented reforms since 1991 has redefined the role of the State and this has necessitated a reexamination of fiscal arrangements between different levels of government. The transition from centralized planning and market based resource allocation has enhanced the role of sub national governments in delivering social and physical infrastructure, increasing trend in regional inequalities has necessitated greater central role. Inter-regional distribution of incomes has shown increasing inequality during the 1990s according to Rao, Shand and Kalirajan, in1998. There is also considerable debate on the trends in poverty in recent years. Efficient antipoverty interventions warrant a solution within the co-operative federalism framework as pointed out by Inman and Rubinfeld in 1992. The
fiscal imbalances at both central and State levels continue to pose serious threat to macroeconomic stability in the country.

The analysis assumes that the institutional environment for the delivery of services has significantly changed with the advent of a coalition of parties in power at the Central level and emergence of regional parties in the States and as partners in Central coalition. While there is a large body of literature on Indian fiscal federalism, much of this is confined to the discussion of the fiscal relationship between the Union and States. Despite constitutional recognition of the third tier in 1992, analysis of fiscal federalism incorporating the role and functions of the third tier in conjunction with the first two tiers does not exist.

India is a federation with constitutional demarcation of functions and sources of finance between union state and local governments. However, statutory introduction of the third tier is a recent phenomenon – after the 73rd and 74th amendments of the Constitution in 1992 gave the rural and urban local governments the constitutional status. Until this development, India had evolved as a two-tiered federal structure with the powers and functions demarcated between the Union and the States. Of course, informally some degree of decentralization below the state level existed for a long time.

Some Historical Factors

Historical factors have played an important role in the adoption of a federal constitution with strong unitary features in India. During the British rule, administrative and fiscal centralization was a colonial necessity. At the same time, the difficulty of terms “Union” and “Center” are used interchangeably in this paper. The country with a number of principles, different languages, cultures and traditions did force the Central government to devolve some powers to regional units. Indeed, for a period of about two decades in British India prior to the enactment of Government of India Act 1935, the system required the provinces to make a contribution to the union.

There were strong arguments for decentralization before independence and the Cabinet Mission sent by the imperial government envisaged limited powers to the Union in a three-tiered federal structure. Nevertheless, the Constitution that was eventually adopted by the Indian Republic closely followed the Government of India Act, 1935, with pronounced "quasi-federal" features. The shift probably occurred for two reasons: First, once the Muslim majority areas opted out of India to separate country (Pakistan), the principal reason for a loose federal structure had vanished. Second, a strong center was found desirable to safeguard against fissiparous tendencies among constituent units according to Chelliah, in 1991. The federal system framework provided by the founding fathers of Indian Constitution was an experiment in adopting the federal idea to a large and extremely diverse economic, cultural, social and linguistic society. The heavy reliance on the 1935 Act was justified on the grounds of "continuity and harmony" according to Chanda, in1965.

The important features of the Act including a heavy centripetal bias and administrative and judicial arrangements enacted for the limited purpose of colonial administration were formally incorporated into the Constitution. The centripetal bias in fiscal matters was seen mainly in the assignment and vesting of residuary powers with the center. The most important factor that concentrated economic powers with the union government, however, was entry 22 in the concurrent list – "Economic and Social Planning" and the consequent experiment on social engineering attempted through centralized planning in a mixed economy frame work. The most important event that concentrated the financial powers of the Union government was the nationalization of major financial Institutions including of banking and insurance.

The Constitution of Indian Republic, like the 1935 Act, provided the three-fold division of powers. The matters of national importance were placed in the Union list, those of regional importance
were placed in the State list and those that would require a co-operative solution were placed in the Concurrent list. The residuary powers were assigned to the Union government. The Indian federalism was evolved as a two-tier structure until 1992. The local government units existed both in urban and rural areas, which basically acted as agencies of the State government. In rural areas historically, Panchayat Raj (PR) institutions in villages provided basic community services and dispensed justice. The committee was appointed by the Government of India to review the functioning of these local government agencies in 1957. The Committee recommended that: (i) these local governments should be constituted through democratic electoral process, (ii) the elected members should represent the local interest and should ensure proper selection and supervision of various projects to conform to the preferences of the residents and (iii) the local governmental units should be vested with adequate financial powers. Subsequent to the recommendations of the Committee, most State governments introduced the third level of government in rural areas.

The evolution of urban local governments was on similar lines. By necessity, the States had to create local bodies though the Constitutional recognition came only after the 74th amendment in 1992. Each State legislated separate Municipal Acts assigning the civic functions and sources of revenue. In general the assignment of revenues was inadequate. Though all municipal bodies could levy property taxes, revenue productivity from the tax was low. Most of the States were allowed to levy "Octroi", a tax on the entry of goods into a local area for consumption, use or sale. In general, the standards of services Some of the State governments implemented the recommendations of the committee in modified forms subsequently. Karnataka was one of the States, which pioneered in implementing the recommendations with certain modifications in 1985. Provided by the municipal bodies were poor and the State governments had to create a number of independent agencies such as housing boards, water supply authorities, and various improvement trusts to ensure minimum services.

**Fiscal Federal System – An Indian Experience**

The amendment of the Constitution also assigned 37 activities to urban local governments. The new arrangement, in addition to those functions that were already assigned, also gave the functions of secondary and adult education, housing and land use, promotion and development of industrial and commercial estates, and electricity distribution to the urban local bodies concurrently with the State governments. Indian experience shows that attempt to decentralize below the State level has come about more from the Center than the States. Many states did not find it necessary to decentralize below their level until the Constitution was amended.

Thus, sub-state federalism in India is mostly a ‘top-down’ process Federalism in India is characterized by constitutional demarcation of revenue expenditure powers among the three levels of government. Thus, one billion people in the country are spread over twenty five States and seven centrally administered territories. The Seventh schedule to the Constitution specifies the legislative, executive, judicial and fiscal domains of Union and State governments in terms of Union, State and concurrent lists.

The Constitution also requires the President to appoint a Finance Commission every five years or earlier to review the finances of the Union and States and recommend devolution of taxes and grants-in aid of revenues to them for the ensuing five years. In addition to these transfers, the Planning Commission also gives assistance to the States based on a formula determined by the National Development Council and specific purpose transfers for various central schemes implemented by different ministries of the Union government.

The government has taken the decision to create three more new States. The State of "Uttaranchal" will be carved out of Uttar Pradesh, "Chattisgarh" will be carved out of Madhya Pradesh
and "Jharkahnd" will be carved out of Bihar. This has already been approved in the Parliament and the three additional States are expected to come into existence before the end of the year.

This is called the 'Gadgil' formula after the name of the Deputy Chair man of the Planning Commission Prof. D. R. Gadgil who introduced the formula for the first time in 1969.

An important precondition for the efficient functioning of a multi-level fiscal system is to have a proper assignment system. The most important feature of a proper assignment system is that (i) the functions and sources of finance should be based on comparative advantage; (ii) revenue powers should be, as far as possible, aligned to the assignment of expenditure functions; (iii) sub national governments should not have powers to undo the national initiative on stabilization and redistribution; (iv) a proper mechanism should be instituted to deal with vertical and horizontal overlapping of tax and expenditure systems and (v) there should be a mechanism to offset the fiscal disabilities through a system of well designed intergovernmental transfers.

The tax powers are assigned on the basis of the principle of separation and are assigned exclusively either to the Center or the States. However, the separation is only in legal and not in economic sense. Thus, the center can levy taxes on production (excise duty) whereas, the tax on sale or purchase of goods has to be levied by the States. Similarly, only the States can levy the taxes on agricultural incomes and wealth and only the Central government can levy taxes on non-agricultural incomes and wealth. The States have found taxing agricultural incomes politically infeasible besides being administratively difficult. At the same time, the separation of the tax base has opened up a floodgate for avoidance and evasion of personal income tax.

Participation of State and Central Governments

The most anomalous part of the assignment between the Union government and State governments is the distinction drawn between goods and services for tax purposes. Entry in the State list empowers the States to levy “taxes on the sale and purchase of goods other than newspapers”. Taxation of services does not find a specific mention in any of the schedules. As all residuary powers are vested with the Union government, it has been imposing taxes on services selectively. The compartmentalized treatment of goods and services for tax purposes has violated neutrality in taxation, rendered the levy of co-ordinated system of consumption tax difficult, and has led to significant evasion and avoidance of the sales tax [NIPFP,] 1994.

The Constitution assigns the borrowing powers to both the Union and State governments. The States can borrow from the market as well as from the Union government. However, if a State is indebted to the Union government, it has to obtain the latter’s permission. As all the States are heavily indebted to the Center, the borrowing by the States essentially is determined by the Union Ministry of Finance, the Reserve Bank of India and the Planning Commission. The States’ can also resort to some borrowing from Public Accounts and the most important item under this is the share of small savings loans and borrowing from the public provident fund. By and large, in principle, the attempt in the Constitution has been to enable the Union government to exercise overall control over sub national borrowing. However, in practice, the States have found several ways to soften their budget constraint.

The Constitution recognizes that the assigned revenue powers are inadequate to meet expenditure responsibilities of the State governments and provides for the mechanism to transfer funds from the Union to State governments by way of tax devolution and grants in aid. To effect the transfers on an objective basis, the constitution provides for the appointment of the Finance Commission every five years. The functions of the Commission include (i) distribution of the proceeds from sharable taxes [ii] provision of grants in aid to the States in need of assistance and (iii) measures to augment resource of the State government to supplement the resources of the Panchayats and Municipalities in
the States and (iv) address any other matter referred to the Commission in the interest of sound finance. Since the adoption of Indian Constitution, Eleven Finance Commissions have submitted their reports.

Planning Commission too has been giving substantial assistance to the States to finance developmental plans. The assistance is given both as grant and loan in the ratio 30:70 for the larger States and 90:10 for the special category States. In addition to Finance and Planning Commissions, Central Ministries give assistance to the States to implement Central schemes. The Central sector schemes are entirely funded by the Central government and the States are merely implementing agencies.

With the constitutional amendments in 1992, roles and responsibilities of rural and urban local governments have been specified. Accordingly, in separate schedules, a list of 29 subjects to rural local bodies and another list of 18 subjects to urban local bodies have been specified. However, the revenue and expenditure assignments in the lists are concurrent with the States’ responsibilities and the actual assignment of specific revenue sources and expenditure depends on the extent to which the State is willing to devolve. The extent of devolution of powers and functions to local governments show wide variation depending on the willingness of the State government to devolve functions and powers to the local governments. Despite wide variations, some of the common functions performed by the Panchayats at the three levels as well as urban local bodies are listed in this concern.

The revenues of local governments in each State are to be determined by the State Finance Commission to be appointed by the State every five years. The responsibilities of the Commission include (i) distribution of the of the revenues of the State between the State and local governments and determining the allocation of individual local governments’, (ii) assignment of tax and non tax powers to village panchayats and urban local bodies; and (iii) determination of the grants in aid to the local governments from the consolidated fund of the State. In addition to the transfers recommended by the State Finance Commissions, the State government passes on the funds for implementation of various central sector and centrally sponsored schemes to the local governments. The most important of them is for poverty alleviation, but there are also other schemes on social and community services in which, the local governments have a comparative advantage in implementation. Analysis shows that local governments have very little flexibility in the use of funds. After deductions of charges for electricity and other facilities by state government in the general purpose transfers, very little is left. A bulk of what is available is needed for administration and the local governments are hardly in a position to execute any developmental schemes.

Salient Features of Fiscal Federalism in India

Although it is difficult to bring out qualitative aspects of decentralization from any quantitative measure, the shares of different levels of government in raising revenue and incurring expenditures provide insights into the working of fiscal federalism in India. For the first time, the report of the Finance Commission (India, 2000) has put together data on revenues and expenditures of local bodies and these estimates are combined with the revenues and expenditures of Union and State governments to get a comprehensive picture of fiscal decentralization in Indian federalism. works out to almost 15 per cent of GDP, which is about seven percentage points more than the deficit estimate only when the Center and States are considered. Second, it is seen that maximum deficits are incurred at the local government level. While the fiscal deficit at the Central level was 4.4 per cent of GDP, the volume of deficit at State and local levels was estimated at 11.7 per cent of GDP. This has serious implications for macroeconomic stability. Third, among local governments, the deficit is in urban local bodies and that too mainly in two States, Andhra Pradesh and Maharashtra. Asymmetry between expenditure and revenue decentralization.
Another salient feature fiscal federalism in India is that decentralization is mainly in incurring expenditures and not in raising revenues. Thus, the Central government could exercise control over one-third of the revenues, but its share in raising revenues is two-thirds. In contrast, State and local governments raised only about one-third of revenues but the revenue accrual to them was about two-thirds. Each of the three levels incurred about one-third of the expenditures. At local level, urban local bodies incurred 28 per cent of total expenditures and the share of rural local bodies was less than 4 percent. Even within the urban local bodies, the expenditures were mainly in Andhra Pradesh and Maharashtra. Like in all federal systems, the States have significant revenue raising powers. The States raise 35 per cent of total revenues, which finances 51 per cent of their expenditures. The expenditure share of the State governments after giving grants to local governments is 35 per cent. In social services, particularly in education and health sectors, the expenditure share of the States is more than 80 per cent and in economic services, it is about 50 per cent. Even then, the States still have to depend on central transfers to finance a significant portion of their expenditures. Almost 37 per cent of States’ revenues accrue from transfers.

The asymmetry in revenue and expenditure decentralization is particularly glaring at local government level. As mentioned above, total revenue raised by local bodies was just about 0.6 per cent of GDP or 2 per cent of total revenues. In fact, Panchayats raised a negligible amount of 0.05 per cent of GDP. They received 1.3 per cent of GDP or as transfers. Their share in total expenditures was less than 4 per cent. Thus, over quarter million local governments in rural India incur less than 4 per cent of total expenditures and this includes expenditures on core as well as discretionary services. The expenditures incurred by them also include expenditures on various centrally sponsored schemes such as poverty alleviation and social development programs implemented through the local governments. Such as,

1. States' total expenditure has been netted out transfers to local bodies
2. Center’s expenditure is net of Grants and Loans to States and Union Territories.
3. Core services are water supply, street lighting, sanitation and roads.

A large part of the deficit arises from the borrowings undertaken by urban local bodies in Andhra Pradesh in recent years. The paper brings out the anomalies in assignments both between Center and States and States and local bodies. There is considerable need to rationalize the assignment system to enable the decentralized governments to raise revenues and incur expenditures according to the preferences of their citizens. The analysis shows that there has been an increasing trend in structural deficits and both Center and States are guilty of fiscal profligacy. The deficits are not the result of higher transfers. The States on their part have not bothered to observe fiscal discipline and have found several ways to soften their budget constraints at the cost of macroeconomic stability.

Conclusion

Despite weaknesses, the central transfers are generally equalizing. The major contributor to equalization is Finance Commission transfer. The Planning Commission transfer and assistance given to Centrally Sponsored Schemes are not equalizing. Despite the overall equalizing impact, per capita expenditure of States is positively related to taxable capacity. In spite of constitutional recognition to the third tier, the local governments seem to play a very limited role both in raising revenues and in spending. It is also seen that initiative for fiscal federalism at the third level has come from the Center and not the States. In raising revenues, their role is negligible. Nor have the States given enough transfers to enable them to play a meaningful role even in implementation. The transfers at local level do not follow any clear pattern. The level of development of the States does seem to be a factor contributing to the success of decentralization in terms raising revenues. However, in absolute terms the local role is not substantial. From this, it will not be an exaggeration to say that the institutional environment does not seem conducive to the success of decentralization at local level in India. It is necessary to understand the policies and institutions necessary for the success to make the local fiscal governance successful.
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Risk and Return Analysis of Open-ended Equity Linked Mutual Fund Schemes in India

Dr. S. Krishnaprabha, Associate Professor, Department of Management Studies, Sri Ramakrishna Engineering College, Coimbatore, India.

Abstract

The volatility and risk in the capital market affect the mutual fund industry to a great extent and had led the investors in dilemma regarding the choice of funds for investment. This study focused on Risk and Return Risk-return relationship of all the open ended equity linked mutual fund schemes based on 7 investment styles in relation to the benchmark portfolio is computed. The study also describes the number of schemes that fall under each class of variance in portfolio returns among the 7 investment styles. The study also analyses the return and systematic risk associated with the selected open-ended equity mutual fund schemes and the same are classified under seven Investment Styles.

Key words: Risk, Returns, Investment styles, Open ended equity mutual fund

INTRODUCTION

India has witnessed significant reforms in the capital market; trading platform has become automatic and electronic, as a result of this, speed and efficiency have become the hallmark of the current system. Across the system, multitude of market participants trade with one another anonymously and simultaneously. Information is flashed on real time basis. Equal opportunity is provided for all concerned to access the information.

Globally recognised economic fundaments of the country and widely perceived robustness of the Indian Capital Market system have gradually restored the confidence of the global and local investors. The Indian capital market has out performed many developed capital markets in the world. Many developments have been taking place in the Indian money market and capital market. Indian financial sector has undergone radical transformation in the post financial liberalization period. As a result of this, the mutual fund industry has come to occupy an important place in recent years which is beneficial for small investors.

There was a time when the only mutual fund that an Indian investor could invest in was the Unit Trust of India's Unit Scheme-64. It was only in 1987, the first non UTI mutual fund, the State Bank of India (SBI) promoted as SBI MF, was launched. UTI held a monopoly in the market for about 30 years and the retail investors in India were earning guaranteed high returns on their investments in UTI. This situation prevailed till the liberalization of mutual fund industry in the year 1992. New entrants with aggressive marketing techniques, led to expectations of high profits by investors who began to invest strongly in the new private mutual funds.

The notification of the SEBI (Mutual Fund) Regulations of 1993, brought about a restructuring of the mutual fund industry. Earlier, Trusteeship, Custodianship, and Asset Management, were often performed by one body, usually the fund Sponsor or its Subsidiary but, after restructuring, the three functions are required to be done separately. The SEBI regulation permitted the entry of private sector Mutual funds and allowed the Foreign Institutional Investors registered with SEBI to invest in domestic mutual funds, whether listed or unlisted. The revised regulations strongly emphasize the governance of mutual funds and increase the responsibility of the Trustees in overseeing the functions of the Asset Management Company.
Mutual funds are required to obtain the consent of investors for any change in the “fundamental attributes” of a scheme, on the basis of which unit holders have invested. The revised regulations require disclosures in terms of portfolio composition, transactions by schemes of mutual funds with sponsors or affiliates of sponsors, with the Asset Management Company and Trustees, and also with respect to personal transactions of key personnel of Asset Management Companies and of Trustees.

The Assets under Management of the Private sector Mutual Fund was only Rs.600 crores in the year 1984, but in May 2012 it has increased to Rs.6,00,000 crores. The impressive growth can be attributed to the entry of commercial banks and the more private players in the mutual fund industry coupled with the rapid growth of the Indian capital markets during the last three years.

The main objective of investing in a mutual fund scheme is to diversify risk. Given a mandate of investment objectives by the Asset Management Company, the fund managers adopt a variety of investment styles, such as, Growth, Dividend, Income, Balanced, Small Cap, Large Cap and Value etc., which give rise to different return and risk levels.

The future of the mutual fund industry depends on the financial returns made available by the mutual funds to their investors. The equity mutual funds are expected to earn higher returns, vis-à-vis, the risk-free return and return on market portfolio. Further, the funds are expected to earn returns in tune with risk exposure of the portfolio. Higher the portfolio risk, more the expected return by the investors.

Review of Literature

Rao (2006) studied on “Investment Styles and Performance of Mutual Funds in India”. The study classified the 419 open-ended equity mutual fund schemes into six distinct investment styles, analysed the financial performance of select open-ended equity mutual fund schemes. The analysis indicated that Growth plans have generated higher returns than that of Dividend plans but at a higher risk. Further, 17 Growth plans have generated higher returns than that of corresponding Dividend plans.

Debashis Acharya, Gajendra Sidana (2007) studied on “Classifying Mutual Funds in India: Some Results from Clustering” This study attempted to classify hundred mutual funds employing cluster analysis and using a host of criteria like 1 year total return, 2 year annualized return, 3 year annualized return, 5 year annualized return, alpha, beta, R-squared, sharpe's ratio, mean and standard deviation etc., the results revealed that there were inconsistencies between the investment style/objective classification and the return obtained by the fund.

Research Methodology

Secondary data were collected from the following sources:

Net Asset Values (NAV) were taken every day for 3 years of the study period (1st April 2008 to 31st March 2012).

Monthly Bombay Stock Exchange 100 National Index values have been drawn from Bombay Stock Exchange directory for the study period to compute market return. The BSE 100 Index was taken to study the market return which accounted for approximately 75% of market capitalization.

Risk-free rate of return: Return on 364 days T-bills had been taken as surrogate measure of risk-free return in this study. Data on coupon rates of 364 days T-bills for the period 1st April 2008 to 31st March 2012 have been collected from the Directory of Statistics of Reserve Bank of India.

Study Area

This study was restricted to open-ended equity Mutual fund schemes. There were 35 Mutual Fund Companies in India on 1st April 2008.
Period of Data Collection
The study aimed at analysing the performance of selected open-ended Mutual Fund schemes in India from 1st April 2008 to 31st March 2012.

Sampling Design
A sample of 114 schemes was considered for the study which was in operation till March 2012.

Calculation of Returns
Monthly returns have been based on month-end NAV’s per unit. The monthly returns for each of the single periods so computed have been compounded to get single compounded monthly rate of returns on the mutual fund portfolio as per the equation given below.

\[
R_p = \frac{NAV_n - NAV_{n-1}}{NAV_{n-1}} \times 100
\]

where,

- \( R_p \) = Single period return on fund
- \( NAV_{n-1} \) = Net asset value at the end of (n-1)th day
- \( NAV_n \) = Net asset value at the end of nth day

Monthly return is calculated by taking the compounded average for every month.

Risk Analysis

**Standard Deviation**: Standard Deviation is a measure of the values of the variables around its mean or it is the square root of the sum of the squared deviations from the mean divided by the number of observations.

**Variance**: The variance is also called the mean square deviation and square of standard deviation. It indicates how far the values deviate from the group. Lesser the variation more is the consistency.

Classification of Mutual Fund Schemes
In this section, the classification of Mutual Fund schemes are performed for open-ended Equity schemes using Stock Style Box method suggested by Morning Star Inc.

Table1 describes the number of schemes that fall under each category based on the Size and Investment Style using Stock style box method.

Table1 classifies the open-ended equity mutual fund schemes into different investment styles.

| Investment Style of the open-ended Equity linked Mutual Fund Schemes. |
|---|---|---|---|
| **Size** | **VALUE** | **BLEND** | **GROWTH** | **TOTAL** |
| LARGE | 12 | 70 | 82 |
| MID | 3 | 11 | 15 |
| SMALL | 16 | 17 |
| TOTAL | 16 | 97 | 114 |
It is found from the above table that out of 114 open-ended mutual fund schemes 82, 15 and 17 belong to Large, Medium and Small capital funds respectively, further out of these 114 schemes 97, 16 and 1 belong to Growth, Blend and Value Investment Style respectively.

It is concluded from table that out of the total open-ended mutual fund schemes a majority of 70 schemes come under large capital growth fund followed by 16 schemes under Small Cap Growth fund and 12 under Large Cap Blend funds.

**Classification of mutual funds into Risk-Return class**

Risk-return relationship of all the sample schemes in relation to the benchmark portfolio is computed. The schemes are classified under different risk class.

<table>
<thead>
<tr>
<th>Investment Style</th>
<th>Monthly Return</th>
<th>Variance &lt;=30.000</th>
<th>Variance 30.001 to 40.000</th>
<th>Variance 40.001-50.000</th>
<th>Variance 50.001-60.000</th>
<th>Variance &gt;60.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Cap growth</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>&lt; 1.001</td>
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<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1.001-2.001</td>
<td>-</td>
<td>2</td>
<td>12</td>
<td>13</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>&gt;2.001</td>
<td>-</td>
<td>1</td>
<td>26</td>
<td>7</td>
<td>3</td>
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<tr>
<td>Mid Cap Growth</td>
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<td>&lt; 1.001</td>
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<td>1.001-3.001</td>
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<td>&gt;3.001</td>
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<td>Small Cap Growth</td>
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<td>1.001-3.001</td>
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<td>&gt;3.001</td>
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<td>1</td>
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<tr>
<td>Large Cap Blend</td>
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<tr>
<td>&lt; 1.001</td>
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<td>1.001-3.001</td>
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<td>1</td>
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<td>Small Cap Blend</td>
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<td>Mid Cap Blend</td>
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<tr>
<td>&gt;3.001</td>
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<tr>
<td>Mid Cap Value</td>
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<td></td>
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<tr>
<td>&lt; 1.001</td>
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<tr>
<td>1.001-3.001</td>
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<tr>
<td>&gt;3.001</td>
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<td></td>
</tr>
</tbody>
</table>

**High Return Low Risk**
The Mutual Fund schemes are classified under high return low risk class when the funds portfolio return is higher than the market return and standard deviation of the portfolio return is lower than the benchmark index (BSE 100).

**High Return High Risk**
The Mutual Fund schemes are classified under high return low risk class when the funds portfolio return is higher than the market return and standard deviation of the portfolio return is higher than the benchmark index (BSE 100).

**Low Return Low Risk**
The Mutual Fund schemes are classified under high return low risk class when the funds portfolio return is less than the market return and standard deviation of the portfolio return is less than the benchmark index (BSE 100).
Low Return High Risk
The Mutual Fund schemes are classified under Low return low risk class when the funds portfolio return is less than the market return and standard deviation of the portfolio return is higher than the benchmark index (BSE 100).

Table 2 classifies the selected open-ended mutual fund schemes into different risk and return class under 7 Investment styles for the year 2008-2012.

Table 2: RISK – RETURN STRUCTURE

<table>
<thead>
<tr>
<th>RISK &amp; RETURN</th>
<th>HIGH RETURN LOW RISK</th>
<th>HIGH RETURN HIGH RISK</th>
<th>LOW RETURN LOW RISK</th>
<th>LOW RETURN HIGH RISK</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(R_p &gt; R_M); (σ_p &lt; σ_m)</td>
<td>(R_p &gt; R_M); (σ_p &gt; σ_m)</td>
<td>(R_p &lt; R_M); (σ_p &lt; σ_m)</td>
<td>(R_p &lt; R_M); (σ_p &gt; σ_m)</td>
<td></td>
</tr>
<tr>
<td>Large Cap Growth</td>
<td>20</td>
<td>24</td>
<td>18</td>
<td>8</td>
<td>70</td>
</tr>
<tr>
<td>Mid Cap Growth</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Small Cap Growth</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Large Cap Blend</td>
<td>-</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Small Cap Blend</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Mid Cap Blend</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Mid Cap Value</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>34</td>
<td>33</td>
<td>20</td>
<td>114</td>
</tr>
</tbody>
</table>

It is shown from the above table that in the year 2008 – 2012, 27 schemes fall under high return and low risk class & 34 schemes are in the high return and high risk class and only 20 schemes are under the low return and high risk category.

Computation of variance of portfolio returns
Table 3 describes the number of schemes that fall under each class of variance in portfolio returns among the 7 investment styles for the period 2008-2012.

Table 3: Risk (Variance) and Return of Mutual Funds (Number of Schemes)

Table 3 shows that the total risks of the mutual fund schemes are above average level. It conveys that the total risk is above average with low market risk and the mutual fund’s risk diversification is very poor. Out of the 114 schemes, 54 are at one extreme of high risk and 8 are at other extreme of low risk and only 51 are in between.

It is concluded from table that out of 54 high risky schemes 22 schemes belong to Mid Cap and Small Cap growth Schemes.

Computation of Beta (β)
Beta describes the relationship between the stock’s return and the index returns. Beta indicates the percentage change in the portfolio index when market index change. When Beta value is + 1.0 then 1% cent change in the market index return causes exactly 1% change in the stock return. It indicates that the stock moves in tandem with the market. When the Beta value is negative it can be inferred that the stock moves in opposite direction to the market return. Stock with negative beta resist the decline in the market return, but stocks with negative beta are very rare. Beta indicates the Systematic Risk which affects the market as a whole.
Table 4 describes the return and systematic risk associated with the selected open-ended equity mutual fund schemes and the same are classified under seven Investment Styles.

**Table 4: Risk (Beta) and Return of Mutual Funds (Number of Schemes)**

<table>
<thead>
<tr>
<th>Invest Style</th>
<th>Monthly Return</th>
<th>Low Risk β&lt; 0.3</th>
<th>Below Avg. Risk 0.3&gt; β&lt;0.5</th>
<th>Average Risk 0.5&gt; β&lt;0.7</th>
<th>Above Avg. Risk 0.7&gt; β&lt;0.9</th>
<th>High Risk β&gt;0.9</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Cap growth</td>
<td>&lt; 1.001</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.001- 3.001</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>11</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>&gt;3.001</td>
<td>2</td>
<td>1</td>
<td>16</td>
<td>12</td>
<td>9</td>
<td>40</td>
</tr>
<tr>
<td>Mid Cap Growth</td>
<td>&lt; 1.001</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1.001- 3.001</td>
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<td>2</td>
<td>5</td>
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<td></td>
<td>&gt;3.001</td>
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<td>1</td>
<td>1</td>
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<td>2</td>
</tr>
<tr>
<td>Small Cap Growth</td>
<td>&lt; 1.001</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td>1.001- 3.001</td>
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<td>1</td>
<td>7</td>
<td>3</td>
<td>11</td>
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<tr>
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<td>&gt;3.001</td>
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<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Large Cap Blend</td>
<td>&lt; 1.001</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
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<td>1.001- 3.001</td>
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<td>1</td>
<td>3</td>
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<td>&gt;3.001</td>
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</tr>
<tr>
<td>Small Cap Blend</td>
<td>&lt; 1.001</td>
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<td>1</td>
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<td>0</td>
</tr>
<tr>
<td>Mid Cap Blend</td>
<td>&lt; 1.001</td>
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<td>-</td>
<td>-</td>
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<td>0</td>
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<td>&gt;3.001</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Mid Cap Value</td>
<td>&lt; 1.001</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
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<td>1.001- 3.001</td>
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<td>-</td>
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<td>0</td>
</tr>
<tr>
<td></td>
<td>&gt;3.001</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>3</td>
<td>31</td>
<td>49</td>
<td>26</td>
<td>114</td>
<td></td>
</tr>
</tbody>
</table>

\( \beta \) - Beta

Table 4 show that from the systematic risk point of view (\( \beta \)) 5 schemes are of low risk, 3 are of below average risk, 31 are of average risk and 49 are in above average risk and 26 are in high risk class. It is concluded from the findings that majority (75) of the schemes are in above average risk class.

Table 5 describes the average total risk (\( \sigma \)), systematic risk (\( \beta \)) and average portfolio return for selected 114 open ended equity schemes, classified under seven investment styles.

**Table 5: Risk and Return – Open-ended Equity Schemes, Investment Style Wise**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number Of Funds</th>
<th>Average Returns %</th>
<th>Average Risk % (( \sigma ))</th>
<th>Average Risk % (( \beta ))</th>
<th>Systematic Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Cap Growth</td>
<td>70</td>
<td>2.994</td>
<td>7.447</td>
<td>0.913</td>
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</tr>
<tr>
<td>Mid Cap Growth</td>
<td>11</td>
<td>1.801</td>
<td>8.345</td>
<td>0.861</td>
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</tr>
<tr>
<td>Small Cap Growth</td>
<td>16</td>
<td>1.521</td>
<td>8.623</td>
<td>0.871</td>
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</tr>
<tr>
<td>Large Cap Blend</td>
<td>12</td>
<td>1.926</td>
<td>7.884</td>
<td>0.952</td>
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</tr>
<tr>
<td>Small Cap Blend</td>
<td>1</td>
<td>1.554</td>
<td>6.435</td>
<td>0.812</td>
<td></td>
</tr>
<tr>
<td>Mid Cap Blend</td>
<td>3</td>
<td>1.174</td>
<td>8.234</td>
<td>0.664</td>
<td></td>
</tr>
<tr>
<td>Mid Cap Value</td>
<td>1</td>
<td>1.672</td>
<td>9.453</td>
<td>0.932</td>
<td></td>
</tr>
</tbody>
</table>

\( \sigma \) – Standard deviation ; \( \beta \) - Beta
It is shown from the above table that the Large Cap Growth schemes earn highest average monthly compounded Returns (2.994) and Mid Cap Blend schemes earns lowest return(1.174) but with comparatively less systematic risk(0.664). It is concluded from the findings that Large Cap Growth Schemes earns a highest average monthly compounded return with a high systematic risk and comparatively less average risk.

**Conclusion**

The investors in India are generally confused, regarding their choice of investing in mutual funds due to innumerable schemes available in the market. The fancy labels coined by the mutual fund companies (AMCs) add to this confusion. The study aimed at classifying the schemes into different investment styles of the total plans offered by the AMCs. The study also attempted to highlight whether there are significant differences between these investment styles in terms of returns, risks and risk-profiles. The study also revealed that different investment styles often have different levels of risk and lead to differences in returns. Therefore, it is crucial that investors understand the style of investment adopted by the mutual fund companies.

Most of the open-ended equity mutual funds offered in India are large cap growth schemes and the average compounded market return out of this scheme is comparatively higher than the other investment styles and hence it is suggested to invest in large cap growth schemes.

**References:**


Total Quality Management in Secondary Education: Perception of Teacher in Meerut Region

Prof. Shweta Batra, HOD, Management, FIT Group of Institutions, Meerut  
s.batrahrd@gmail.com, shweta.batra@forte.ac.in  
Amit Shankar, Assist. Professor Management, NET, FIT Group of Institutions, Meerut  
amit.kumar971@gmail.com, amit.sankar@forte.ac.in  
Amit Kumar, Assist. Professor, Management, FIT Group of Institutions, Meerut  
amit040985@gmail.com, amit.kumar@forte.ac.in

Abstract:
This paper aims to analyze the perception of Secondary school teachers in rural area of Meerut regarding Total Quality Management (TQM) in Secondary education and to explore challenges & suitable strategy for inclusive growth. It is an attempt to understand how these perceptions vary by demographic variable such as, gender & age group. Data were collected from 100 teaching and non teaching staff Meerut region. ‘T’ test is used to find out the significance of difference between variables subscales. Significant difference was found between male and female teachers in the perception of total quality management. Female faculty had higher mean score than male faculty. There is no significant difference between teaching and non teaching staff in the perception of TQM in secondary education.

Keywords:-TQM, Quality control, ANOVA, Perception, professional education, Variance..........

INTRODUCTION

The importance of education for the development of excellence, expertise and knowledge leading to overall development in economy cannot be undermined. This has necessitated a sound strategy for the development of higher education in almost all countries of the world. Establishing leadership in the world is possible only when we have a developed system of higher education in which efficiency remains the sole criterion to evaluate performance. The system of higher education is found efficacious in making available to the society a dedicated, committed, devoted and professionally sound team of human resources to decide the future of any nation. This is possible only when the principles of quality management are inculcated in the system of higher education. Total Quality Management (TQM) is inevitably common factor that will shape the strategies of higher educational institutions in their attempt to satisfy various stakeholders including students, parents, industry and society as a whole. The paper is a theoretical attempt to explain the application of TQM in tertiary education. It deals with issues pertaining quality in higher education and moves on to identify variables influencing quality of education. It also conceptualizes a model for application of TQM in education. The new economic growth theories have emphasized the role of human capital as the key of economic growth and development. The World Bank’s recent study of 190 countries reveals that it is education that helps in enriching the quality of manpower. Thus education is a basic investment necessary to improve the overall quality of life. The strong linkage between the economy and education was never as clearly visible as now. It is the availability of employment in the market that makes the learners chooses their areas of study.

Quality:

The word quality is derived from Latin word quails, which means “what kind of”. It connotes a variety of meanings and implies different things to different people. According to Juran “Quality is fitness for use or purpose”. Crosby considers it as “conformance to standards”. Deming defines quality as “a
predictable degree of uniformity and dependability at low cost and suited to market”. In general quality is one, which satisfies customer needs and continuously keeps on performing its functions as desired by customers as per specified standards.

**Total Quality Management (TQM):**

TQM has been adopted as a management paradigm by many organizations worldwide. Quality movement in across the world starts with quality improvements project at manufacturing companies. But later it spread to other service institutions including banking; insurance, nonprofit organizations, healthcare, government and educational institutions. TQM models, based on the teachings of quality gurus, generally involve a number of “principles” or “essential elements” such as teamwork, top management leadership, customer focus, employee involvement, continuous improvement tool, training etc.

TQM may also be defined as; doing things right for the first time, striving for continuous improvement, fulfilling customers’ need, making quality the responsibility of every employee etc. Most of work of quality and TQM can be traced to the work of gurus W. Edwards Deming and Joseph Juran’s teachings and statistics in Japan during the 1950’s and the revolution that followed in the USA in the 1980s to meet or preferably exceed customer expectations. Common theme in quality management includes consistency, perfection, waste elimination, and delivery speed and customer service. The objective of TQM is to build an organization that produces products or performs services that are considered as quality by those who use them. The quality of a product or a service is the customer’s perception of the degree to which the product or service meets their expectations.

**TQM in education**

Traditionally, the educational services include the three fundamental functions’
- Teaching
- Research; and
- Extension.

Teaching serves to transmit knowledge and skills from the teacher to the taught ones. The purpose of research is to explore new knowledge whereas the function of extension focuses on developing the application of the developed knowledge for addressing the common problems of the society. The functions of the education can also be elaborated as under;
- To seek and cultivate new knowledge, to engage vigorously and fearlessly in the pursuit of truth and to interpret old knowledge and beliefs in the light of new needs and discoveries
- To provide the right kind of leadership in all walks of life by helping the individuals develop their potential
- To provide society with competent men and women trained in all professions who, as cultivated individuals, are inclined with a sense of social purpose
- To strive to promote equality and social justice and to reduce social and cultural differences through diffusion of education
- To foster in the teachers and students, and through them in the society generally, the attitudes and values needed for developing the ‘good life’ in individuals and society
- To bring the universities closer to the community through extension of knowledge and it’s applications for problem solving

**NEED FOR THE STUDY**

Defining quality in education is a massive challenge since it deals with the most sensitive creation on earth –the human being. Industrial products are finished goods- take them or leave them. Nothing can
be done once they are finished. Service is here and now. You can look for better quality only next time. Education has no such finished product, nor even the graduates. They are on the way “to be”. Education only charges the human propensities to evolve and unfold it till the last breath, a process that covers the human journey from ‘womb to tomb’. Quality improvement is a never ending process. Education quality leads to a prospective future. Hence, insight on quality indices and virtual implementation need to be given top priority and due attention should be paid to the category in the wide range of educational strata e.g. school, university, educational management, and the staff.

OBJECTIVES

- To study the level of perception of secondary school staff in Meerut city regarding TQM in education.
- To study the difference between Male and Female secondary school teachers in the level of perception regarding TQM in secondary education.
- To study the difference between teaching and non teaching staff in the level of perception regarding TQM in secondary education.

HYPOTHESES

There is no significant difference between Male and Female secondary school teachers in the level of perception regarding TQM in education.
There is no significant difference between teaching and non teaching staff in the level of perception regarding TQM in secondary education.

METHODOLOGY

Sample
A total of 100 teachers were elected from 8 secondary schools in Meerut. Sample was randomly selected. All the teaching and non teaching staffs of selected school were considered as sample for the study.

Tools
Survey Instrument of Bonstingle (1992) was used to get the data on perception of secondary school teachers regarding TQM in education. The original form of this tool consisted of 84 items based on Bonstingle’s conceptualization of Demming’s 14 points of Total Quality Management (TQM) in Education. All the items under 14 points are to be rated by the sample respondents on 4- point Likert’s scale having the ratings of “ Not applicable”(0), Low (1) Medium (2),and “High” (3). In this study, 6 out of 14 points of Deming consisting of only 30 items were considered because they were very much related to school programmes, teacher teaching and student learning (Mukhopadhyay 2006). They were 1. Create constancy of purpose, 2. Adopt new philosophy, 3. Improve constantly, 4. Institute training on the job, 5. Institute leadership, 6. Drive out fear, so that everyone may work effectively for the institution.

Procedure
The selected school staffs were met individually for explaining purpose of the study and were instructed how to respond to the scale survey instrument of Total Quality Management in Education. Further clarifications were offered on the questions/doubts raised by them.

Statistical Analysis
The scales were scored as indicated above and the data obtained were subjected to statistical analysis using SPSS for windows (Evaluated Version 14.0). Mean and SD were calculated separately for all the 4 points in the scale and the total scale to describe the level of perception of secondary school teachers
regarding TQM in education. The study employed “t” test for significance of difference between means to test the hypotheses formulated for the study. Considering the possible range of total scores on TQM questionnaire (0 to 90), the sample teachers were categorized into 3 groups: AA (Above Average), A (Average) and BA (Below Average) in perception about TQM in education. For this purpose, the total possible score 90 was divided equally into 3 groups: Teachers scoring between 0-30 as Below Average, 31-60 as Average and 61-90 as Above Average. The details of the number and percentage of teachers of 3 categories were: AA (No.25 and 25%) A (No.55 and 55%) and BA (No.20 and 20). The study employed “t” test to find out the significance of difference in the perception about TQM in education between difference categories of teachers, Male and Female, Arts and Science, in Meerut. SPSS for Windows (version 14.0) was used for statistical analysis.

RESULTS

Results indicated that more than 50% secondary school teachers (55%) exhibited Average level of perception about TQM in education. However, the percentage of teachers with Above Average level of perception about TQM was more (25%) than that of teachers with Below Average level of perception about TQM (20%). According to the first null hypothesis “There is no significant difference between Male and Female secondary school teachers in the level of perception regarding TQM in education”. The obtained results taken by SPSS 14 indicated that, there was significant difference between female and male teachers of Meerut in the perception of TQM (t = 2.11 significance of 0.03 level). The observation of means between male and female secondary school teachers in Meerut indicated that the mean score of female teachers (mean = 1.76) was higher than that of male teachers (mean= 1.63). It is concluded that female teachers have better perception than male teachers regarding TQM in education. Thus, rejecting the null hypothesis, it is inferred that, there is significant difference between male and female teachers in the perception about TQM in education. The second null hypothesis stated that “There is no significant difference between teaching and non teaching staffs in the level of perception regarding TQM in education”. The obtained results taken by SPSS 14 indicated that, (t = 1.17 significant of 0.11 level). Thus, respecting the null hypothesis, it is inferred that, there is no significant difference between teaching and non teaching staffs in the perception about TQM in education.

FINDINGS AND DISCUSSION

There is significant difference between male and female teachers in the perception about TQM in education. There is no significant difference between Arts and Science secondary school teachers in the perception about TQM in education. More than 50% secondary school teachers exhibited Average level of perception about TQM in education. Female teachers in secondary schools had better perception about Total Quality Management (TQM) in education than male teachers. Arts and Science teachers in secondary school do not differ in the perception about TQM in education. To conclude, educational organizations, such as schools, colleges and universities should have individuals who are committed to their organization, profession and well- being of their students. The vitality of all educational organizations lies in the willingness of principals to contribute to the development of their organizations. The process of TQM will lead to all round development of the institution, principals, teachers and students.

CONCLUSION

In all fields, especially education quality has an important matter. Total Quality Management as a necessary element always has a direct influence on the human improvement. It can be also led to high commitment and sprit in work environment. According to the study majority of secondary school teachers have exhibited Average level of TQM in education. However, the percentage of teachers with Above Average level of TQM is more than that of teachers with Below Average level of TQM. Usually the common observation is that, females’ teachers are more sincere and committed to their
work. Always give importance to the quality as such female teachers in the present also study have better perception than male teachers about TQM in education. However, it can be suggested that, measures should be taken to see that, male teachers also have better perception of TQM and all the activities of the school to promote quality education. It is better for all the teachers of the institutions to be exposed to more quality in education which in turn would influence the perception of teaching. Teachers should be encouraged towards positive aspect of TQM and to take active participation to render quality education.

REFERENCES