



# SCMS JOURNAL OF INDIAN MANAGEMENT

ISSN 0973- 3167

Volume X Number 2  
April - June 2013

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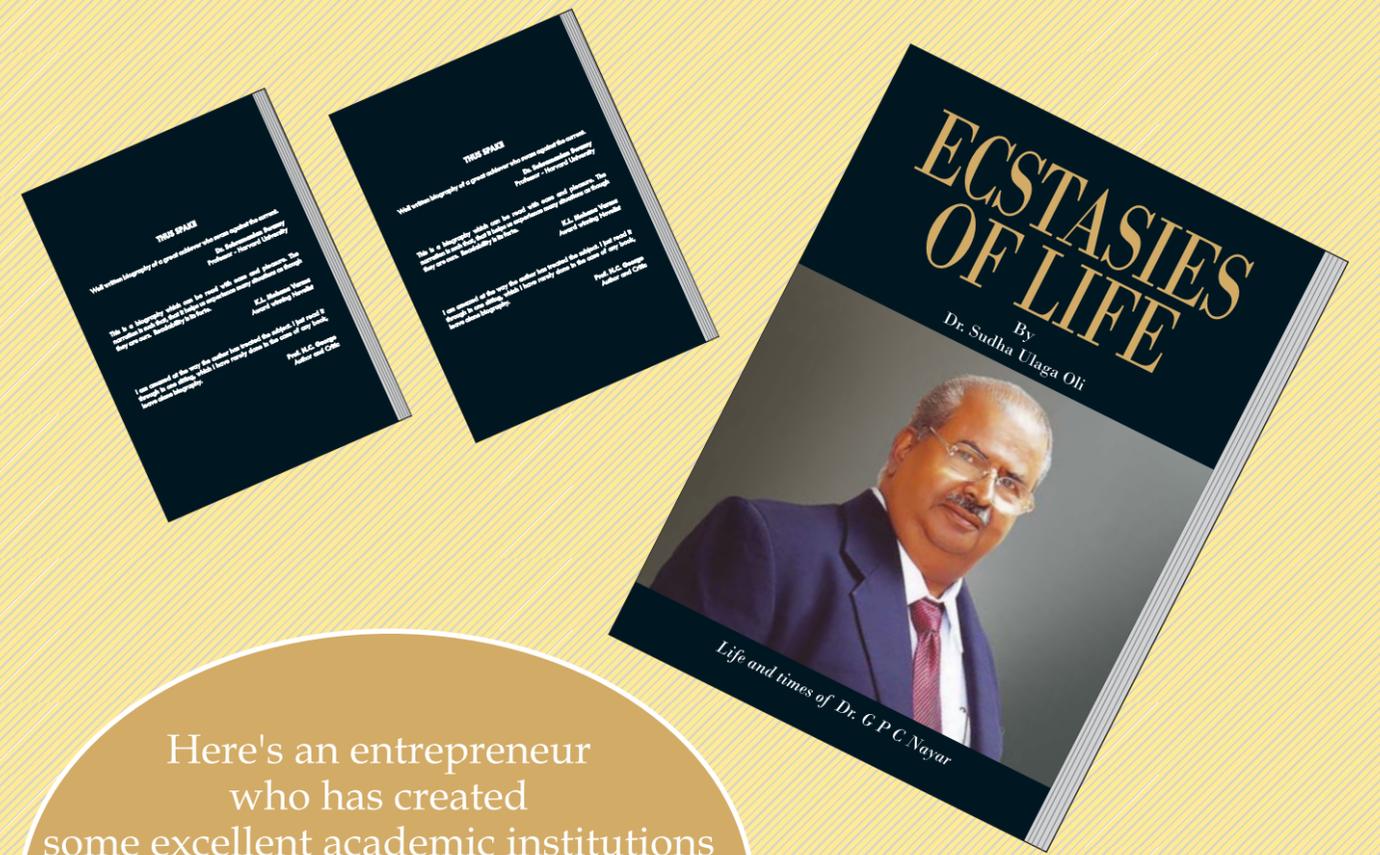
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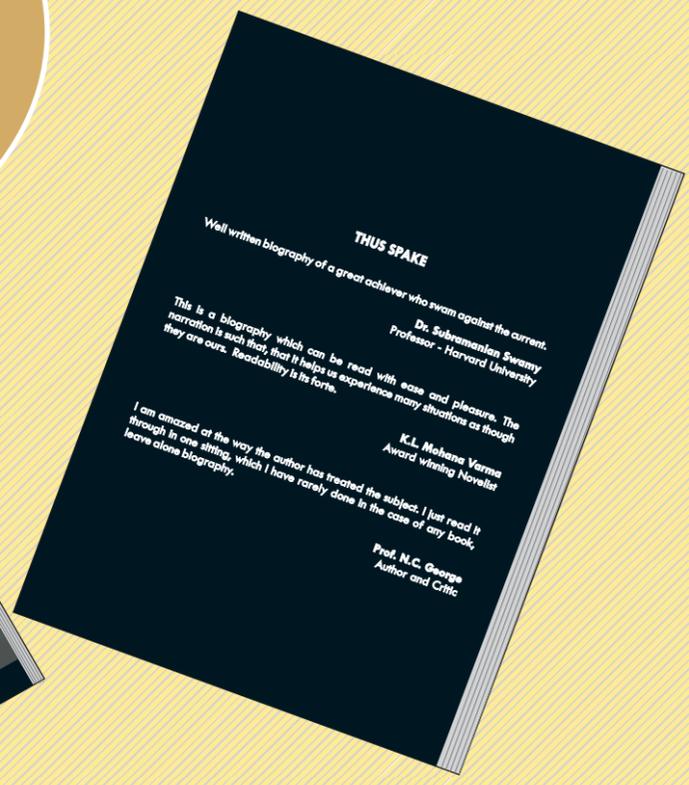
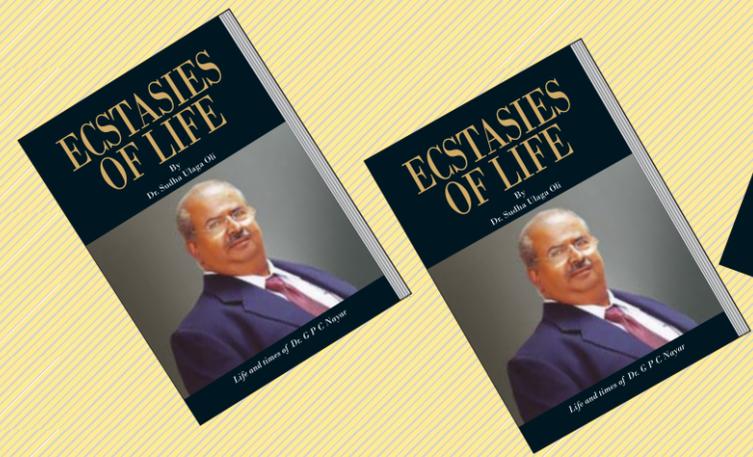
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## Impact : Job Enrichment in Organizational Citizenship Behaviour

Seyed Mehdi Mousavi Davoudi



Here's an entrepreneur who has created some excellent academic institutions in an unfriendly environment. It is a saga of trials and tribulations in an extremely readable manner by a consummate writer in English.



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## Overview

**T**oday, more than ever before, industries are required to find out ways to improve their income and profitability in a complex global marketplace. One of the major challenges before them is to become more efficient and at the same time being able to contribute to high levels of customer satisfaction.

Rapidly growing companies with global operations will have to constantly advance their supply chain efficiency. At the same time, they will have to please a wide variety of customer segments belonging to diverse backgrounds and with varying expectations.

The apparently new concept of demand chain management was derived from the efforts made to create a good balance between high customer satisfaction and supply chain efficiency in a challenging competitive business environment. It is all about building partnerships and collaborations aimed to create unique competence with an eye to provide value to the customer.

This emerging business model is yet to gain wide appreciation and application. However, it has been reported that when implemented by the multinational retailer, TESCO, in South Korea it became a revolution in that retail market.

We hope it will be of interest to our readers to know more on this novel approach. To throw more light on it we bring out in this issue two research papers pertaining to this area as lead articles.

In addition, the issue carries a number of learned articles on a variety of topics like CRM performance, sustainable entrepreneurship, brand recall, stock exchange in Iran, three factor model, job enrichment, et al.

I am confident that you will find this issue truly informative and educative.

**Dr. G. P. C. NAYAR**  
**Chairman, SCMS Group of Educational Institutions.**

# SCMS Journal of Indian Management

A Quarterly Publication of  
SCMS-COCHIN

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## Editorial



### Super Trends in Business

Success in the business world tomorrow means recognizing the sweeping changes of today. Many new trends occur in the global market place comprising Karl Albrecht's "Super Trends."

Customer Super trend focuses on the Micro-segmentation in the Marketplace: Monolithic markets, customer segments, and product categories are continually breaking up into smaller clusters of demand and preference. Customers are becoming ever more differentiated in their lifestyles, and interests, with smaller and more specialized groups. They respond to more narrowly targeted commercial messages. An example of this micro-segmentation can be seen in the rapid rise of blogs or online personal diaries and new columns.

Competitor Super trend deals with value targeting: It aims for whatever matters most to individual consumers. Enterprises which offered a broad range of products or services are now facing specialized competitors providing more specific, targeted solutions, often in two ways and at lower prices. Economic Super trend is built on Chinafication. China's vast pool of cheap labour may dominate world labour markets for decades, giving a near permanent monopoly on cheaply manufactured goods.

Technological Super trend suggests a shift from Information to Knowledge. Today, information is a profitless commodity and knowledge is the new competitive advantage. A shift from industrial based societies to information based societies is noted. Knowledge workers are renamed as data workers. No value is added to the processing of information. The developing state of all-pervasive connectedness imposed by internet use may give rise to a greater appetite for meaningful human contact.

Special Super trend is of Dumb and Dirty. Media environment is forcing marketers of the popular culture to resort to more provocative methods of capturing the attention of the jaded public. It creates a pervasive culture amusement that tends to develop and displace thoughtful discourse. The evermore desperate use of sexualized and violent content as an attention getting strategy in news, advertising, publishing, and entertaining is causing more people to perceive the social values projected by the popular commercial culture as narcissist, hedonistic, anti-intellectual and regressive.

Special Super trend: "Cyber mobbing" speaks about web communities emerging as "smart mobbing" and swarm advocacy spawning temporary or transient political entities that outflank traditional channels and methods of influence. Political segment is becoming much more popular in the broadest media. Specialized advocacy groups form and disintegrate over time. Elected officials and public agencies fall under scrutiny. Political activists can assemble temporary constituencies through online marketing and fund raising. Web based news producers are outpacing traditional radio; TV broadcast sources, and the print media.

Legal Super trend generates Knowledge Warfare. Competitive struggles are fought between knowledge intensive enterprises. They are fought on the legal battlefield and in the market place. The creators, producers, publishers, distributors, and consumers of intellectual property based products pursue their separate interests. High profile law suits have highlighted the increasing vulnerability of copyrights and other intellectual property protections.

Geophysical Super trend points to Counter Americanism. Threats of violence against Americans and US enterprises are significantly increasing the cost of business operations. As the US continues to lose its unique competitive advantages in science and technology, as intellectual capital continues to develop rapidly in competing countries, such as China and India, and as competition for oil and other natural resources intensifies, an American "twilight" of influence is almost likely.

Dr. D. Radhakrishnan Nair

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# Marketing Firms vs. SCM-led Firms: DCM Comparatistics

Prof. Pankaj Madhani

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The paper discusses the issues of the marketing led firms and the supply chain management (SCM) led firms. This paper aims to investigate between the renewed emphasis and interests in integration of marketing and SCM in the form of demand chain management (DCM). The prior literature on marketing and SCM integration is reviewed and an evaluation framework is presented which shows the benefits of DCM and provides a basis for further empirical validation. In many firms, the SCM still seems to be disconnected from the demand side as it has only a faint idea of the drivers behind customer demand. Firms that have integrated their marketing and SCM and developed DCM capabilities are more successful in bringing often-conflicting objectives more closely together.

**Key words:** Demand chain, Demand chain management, Marketing, Supply chain, Supply chain management, Customer value proposition



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A supply chain is defined as “the integration of key business processes from end users through original suppliers that provide products, services, and information that adds value for customers and other stakeholders” (Lambert *et al*, 1998). The supply chain involves “all activities associated with the flow and transformation of goods from the raw material stage, through to the end user, as well as the related information flows” (Handfield and Nichols, 1999). Here, a supply chain includes all the value chain processes from suppliers to end customers. It is imperative that each supply chain participant adds value from the perspective of the end customer in the supply chain. This assumes integration of both supply and demand side activities in the value chain (Jeong and Hong, 2007).

Supply Chain Management (SCM) refers to all of the processes, technologies, and strategies that together form the basis for working with internal as well as external sources of supply. SCM requires integration and coordination of business processes throughout the supply chain for the purpose of satisfying and responding to changes in the

demands of ultimate customers (Vokurka and Lummus, 2000). SCM can be defined as “the management of upstream and downstream relationships with suppliers and customers in order to create enhanced value in the final market place at less cost to the supply chain as a whole” (Christopher, 1998). As SCM focuses on the efficient matching of supply with demand it does not help the firm to find out what the customer perceives as valuable, and how this customer-perceived value can be translated into customer value propositions. Hence, supply chain efficiency by itself will not increase customer value and satisfaction (Rainbird, 2004a). Supply chains capable of implementing and executing an integrated and coordinated marketing strategy at the supply chain level focused on the ultimate customers of the supply chain will gain competitive advantage (Min and Mentzer, 2000).

Thus, it is essential to understand the marketing perspective also instead of solely focusing on SCM decisions. Marketing and SCM often operate as self-optimizing, independent entities. Undoubtedly, one important strategic issue that needs more research is the integration of marketing and SCM activities. Generally, marketing seeks to optimize demand, whereas, SCM seeks to optimize supply; Marketing is revenue focused, and involves identifying and responding to customer needs, whereas, SCM is cost focused, and deals with production and distribution. The result is the marketing and SCM efforts move in independent, even adversarial directions. Marketing combined with dynamic SCM provides greater flexibility to satisfy customer demand based on the needs of individual customers and their value to a firm. To be successful, the business organization not only needs to focus on the supply chain, but also on the demand chain. Hence, Demand Chain Management (DCM) can leverage the strengths of marketing and SCM and meet the challenges of customer value creation in today’s marketplace.

The objectives of this paper are, firstly, to introduce DCM as a model which combines the strengths of marketing and SCM by shifting the focus to the customer and designing customer centred supply chains; secondly, to demonstrate how DCM can leverage the strengths of marketing and SCM and meet the challenges of customer value creation in today’s fast changing and highly competitive marketplace and thirdly; to suggest a conceptual framework for measurement of benefits envisaged on DCM for further empirical research.

### Literature Review

As customers are increasingly becoming more demanding, firms place more emphasis on customer service. Achieving

better levels of customer service requires working together across different departments or functions of a firm (Ellinger, 2000). The notion of the SCM as the new corporate mantra, championing reduced costs, improving efficiencies, and rewarding end customers with reduced prices, seems somewhat inappropriate to those who are influenced by the notion that marketing was the dominant corporate philosophy (Walters, 2006). Cost efficiency is the most cited goal in SCM according to Wang and Wei (2007). The notion that an effective supply chain alone will ensure adequate end customer satisfaction by reducing costs and therefore prices is not necessarily an adequate model by itself.

High-speed, low-cost supply chains are unable to respond to unexpected changes in demand or supply. Efficient supply chains often become uncompetitive because they do not adapt to changes in the structures of markets. Supply chain efficiency is necessary, but it is not enough to ensure that firms will do better than their rivals (Lee, 2004). SCM focuses on the efficient matching of supply with demand but does not help the firm to find out what the customer perceives as valuable, and how this customer-perceived value can be translated into customer value propositions. Hence, SCM efficiency by itself will not increase customer value and satisfaction.

Providing customer service in the value chain is largely the domain of two functional areas – marketing and SCM. Collaborative integration between a firm’s marketing and SCM functions is necessary to fully capitalize on potential service improvements (Christopher, 1993; Bowersox, *et al*, 1995; Mentzer and Kahn, 1996). In short, collaborative integration is how well departments work together when their jobs require them to do so. Thus, collaboration between departments is often needed to ensure delivery of high quality services to customers, and involves the ability to work seamlessly across the “silos that have characterized organizational structures” (Liedtka, 1996). Collaborative behaviour is based on cooperation (willingness), rather than on compliance (requirement). Its success is contingent upon the ability of individuals from interdependent departments to build meaningful relationships (Tjosvold, 1988).

SCM requires integration and coordination of business processes throughout the supply chain for the purpose of satisfying and responding to changes in consumer demand. The efficiency of supplier relationship is influenced by nature and frequency of information sharing among functional areas (Lambert and Cooper, 2000). Gundlach *et al*, (2006) argue that the integration and coordination of marketing strategies

across the supply chain offers “continued opportunity” for cross-disciplinary research. The ability to integrate and coordinate becomes paramount in satisfying the demands of the ultimate customers of the supply chain (Green *et al*, 2008).

As customer needs are ultimately seen spinning around reduced price as a major determinant of satisfaction, supply chain efficiency is mistaken for effectiveness, with undue short-term emphasis on cost reduction at the expense of broader and long-term business goals (Walters and Rainbird, 2004). SCM evolved from a traditional focus on purchasing and logistics to a broader, more integrated emphasis on value creation. According to Kampstra *et al*, (2006), leading firms increasingly view SCM excellence as more than just a source of cost reduction – rather, they see it as a source of competitive advantage. Many researchers argue that SCM creates competitive values through the active involvement of supply chain entities (Jeong and Hong, 2007). Martin and Grbac (2003) claimed that SCM is very critical to the responsiveness to customer needs.

SCM is an integrated philosophy, spanning boundaries in the organization and crossing departments without regard to the functional silos that have existed for many years (Parente *et al*, 2008). Successful SCM initiatives require cross-functional integration and marketing must play a critical role. The challenge is to determine how to successfully accomplish this integration (Lambert and Cooper, 2000). Lummus *et al*, (2003) examined the impact of marketing initiatives on the SCM and demonstrated that not only do SCM actions affect marketing but also that marketing actions can have a significant impact on supply chains.

The guiding principles governing the sales / marketing and the SCM department are significantly different. While the sales team tries to meet volume and revenue targets, the SCM operations constantly strive to increase capacity utilization, with both entities operating on local optima. As a result, sales forecasts are not in line with the actual demand trend and the supply chain operation is on different lines. This deviation from demand reality leads to scenarios with inventory stock outs or huge inventory pile up (Sarangi and Srivatsan, 2009). Despite strong arguments for an integrated approach, in many businesses, the supply side still seems to be disconnected from the demand side and supply chain managers have only a faint idea of the drivers behind customer demand (Jüttner *et al*, 2007). Mentzer (2004) concludes that many firms have failed to realize that supply chain

coordination is not possible without an adequate understanding of demand.

The scope of SCM have widened over time from having an intra-organizational focus on logistics to becoming focused on inter-organizational issues including ‘all key processes and functions’ of the organization (Dubois *et al*, 2004). SCM includes the coordination and collaboration of processes and activities across different functional areas of the organization. SCM is the integration of these activities through improved relationships to achieve sustainable competitive advantage. It has been suggested that success in today’s competitive business environment is largely dependent on the degree to which firms are able to integrate across traditional functional boundaries to provide better customer service (Cespedes, 1996; Johannessen *et al*, 1997).

Ryals and Rogers (2006) pointed out that substantial developments within SCM such as strategic procurement and marketing logistics (Christopher, 2005) remained largely unnoticed by marketing. Integration of marketing and SCM decisions should be a prime concern for firms. Supply chain actions, should always be aligned with the business strategy of the firm and include upstream (i.e., order processing) and downstream (i.e., demand management and customer service) activities (Sahay and Mohan, 2003) in order to facilitate the integration of the supply chain (Lummus & Demarie, 2006). The limited studies that were identified indicate that marketing and logistics managers have tended not to consult and coordinate with each other (Cespedes, 1988; Murphy and Poist, 1994; Stock, 1990). In fact, marketing/logistics interdepartmental relations tend to be characterized by conflict and lack of communication rather than by collaborative integration.

### **Marketing and SCM: Key Differences**

The sales and marketing function is responsible for the direct customer interface and pricing. Sales and marketing makes decisions on salesforce deployment, product offerings, marketing costs, and budgets. Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services in order to create exchanges that satisfy individual and organizational objectives (American Marketing Association). These activities, usually regarded as marketing mix (product, price, place and promotion) elements of marketing. Marketing is a boundary-spanning function, linking the organization with buyers and channel intermediaries. Usually, the primary objective of the

marketing function is maximizing revenues by satisfying customers through the products and services offered. Specifically, to operate most effectively, its activities must be co-ordinated with the other functional areas of the firm. Nevertheless, in most firms, product pricing and promotional decisions are typically made by the sales and marketing, with little regard of the impact of these decisions on the supply chain performance.

On the other hand, SCM's focus is on the synchronization of production and distribution activities among the different entities comprising the supply chain network. The main objective is typically to minimize the total supply chain cost. Several authors have highlighted the conflicting goals of marketing and supply chain managers (Eliashberg and Steinberg, 1997; Shapiro, 2006). Integrating marketing and logistics is a challenge in any business organization, since there is a natural tension between these two functional areas (Bozarth and Berry, 1997). At best, the tension between marketing and logistics results in a dampening of marketing's tendency to over-promise to lure customers and a push on operations to move beyond an internal focus on reducing costs without a clear understanding of end-consumer needs (Laínez *et al.*, 2010). In general, conflicts arise between marketing and SCM because of these contrasting performance indicators. For example, one classical conflict between these two functions is the one associated to the management of inventory. Marketing managers prefer high stock levels to guarantee that customer orders are always met, thus improving revenue generation, while supply chain managers strive to keep low stock levels. However, the main business goal of any firm is to create and maximize shareholders value, which actually is a function of revenues, cost, and other economic factors.

### **Demand Chain Management**

A number of organizations have focused their efforts on developing sophisticated supply chains such that their managerial focus became myopic, and many lost sight of their markets and their customers, missing the fact that the customers, failing to realize their expectations, switched their loyalties (Walters, 2006). Hence, organizations need to focus on demand chain also along with supply chain.

The demand chain is defined as "The complex web of business processes and activities that help firms understand, manage, and ultimately create consumer demand (Langabeer and Rose, 2001). Baker (2003) emphasizes that managing a demand chain is fundamentally different from managing a supply chain as it requires turning the supply chain on its top, and taking the

consumer as the starting point, rather than its ultimate destination. Supply chains emphasize the efficiencies in the production and logistics processes, while the demand chain by contrast emphasizes effectiveness in the business. An efficient supply chain alone provides only half the solution, hence, complete solution is suggested to be having an effective demand chain also that encourages a strategic approach to market response.

The supply chain focuses on supply of materials, while the demand chain focuses on market demand. A demand chain strength that is not linked to a supply chain strength may result in a high-cost base, as well as slow and inefficient product delivery; while a supply chain strength that is not linked to a demand chain strength could result in sub-optimal outcome (Jüttner *et al.*, 2007). The demand chain comprises all the demand processes necessary to understand, create, and stimulate customer demand (Charlebois, 2008; Walters and Rainbird, 2004), and is managed within demand chain management (DCM). The supply chain, on the other hand, comprises all the supply processes necessary to fulfil customer demand (Gibson *et al.*, 2005; Lummus and Vokurka, 1999; Mentzer *et al.*, 2001), and is managed within supply chain management (SCM).

DCM provides competitive advantage to the firm by enhancing its supply chain's ability to focus on and respond to changes in customer demands. According to Vollmann and Cordon (1998), DCM starts with the customers, working backward through the entire chain, to the suppliers of the supplier. Effective DCM maximizes value to the ultimate customers of the supply chain in terms of both satisfaction as well as a relatively low total cost of the product and/or service. Hence, everything that is produced, moved, or handled across supply chain should be in response to a known customer requirement. SCM focuses on moving products and services downstream towards the customer (Walters, 2008), while the DCM attempts to analyze and understand overall demand for markets within the firm's current and potential product range (Langabeer and Rose, 2001).

DCM is a new business model aimed at creating value in today's marketplace and combining the strengths of marketing and supply chain competencies (Jüttner *et al.*, 2007). According to Blackwell and Blackwell (1999), the essence of DCM is to define and understand customer demand on a real-time basis followed by rapid response to it. DCM is defined as the task of managing and coordinating the supply chain from the customer to the supplier (Frohlich and Westbrook, 2002). Demand chain design is based on a thorough market

understanding and has to be managed in such a way as to effectively meet differing customer needs. According to Vollmann *et al*, (2000), DCM is defined as “A practice that manages and coordinates the supply chain from end customers backwards to suppliers”. Similarly, DCM is conceptualized as “A set of practices aimed at managing and coordinating the whole demand chain, starting from the end customer and working backward to raw material supplier” (Selen and Soliman, 2002). Likewise, Hilletofth *et al* (2009) defined it as “The alignment of demand creation and demand fulfilment processes across functional, organizational, and inter-organizational boundaries.”

From the above definitions it can be said that, the main difference between DCM and SCM is that in SCM, the process moves from upstream to downstream, with customer needs being estimated from the firm perspective, while DCM takes the opposite approach and moves the process from downstream to upstream. The main stimulus behind move away from supply chains towards demand chains and DCM has been the shift in power away from the supplier towards the customer (Soliman and Youssef, 2001). The view of the consumer as an integral part of the chain is perhaps the most important issue in the shift from SCM to DCM.

Traditional supply chain processes focus on efficiency to sustain lower costs, while traditional demand chain processes focus on effectiveness and revenue generation with the aim to please customers (Rainbird, 2004b). DCM attempts to capture the proposed synergies between marketing and SCM by starting with the specific customer needs and designing the chain to satisfy these needs, instead of starting with the supplier/manufacture and working forward (Heikkila 2002). Such integrated approach of DCM seems mandatory in today’s marketplace, where customers have real-time access to information related to their accounts.

#### **DCM: Key Environmental Drivers**

Customer needs and expectations are becoming more and more unstable and difficult to identify as customers have many choices, frequently similar in terms of quality and price. (Fassoula and Neoset, 2006). To meet the competitive pressure it is no longer enough only to have efficient supply chain. The situation requires that the traditional organizations aim to gain customer satisfaction and that a continuous improvement is required to gain their loyalty. According to C.K Prahalad and Venkat Ramaswamy (2004), the customer’s position has experienced a dramatic change. From being isolated, unaware and passive, customers have gone more

informed and active. This is partly due to the great amount of information available to the customers in this digital age. As a response to this, the market has transformed from mass production to more customer-focused products. Customer’s needs and requirements have grown more complex and expectations of customers have increased manifold.

Following are major drivers for DCM:

1. Increased needs and requirements of the customers.
2. Globalization of world economy.
3. Increased competition, leading to higher thrust to lower prices.
4. Products and services become more alike and standardized.
5. Product lifecycles becoming shorter.

In today’s business environment customer retention has become very difficult in the face of fluctuating market demand. Expectations of consumers about quality, innovation, prices, 24X7 services and also have increased manifold. It is necessary that organizations think again about how front-end marketing should work alongside back-end operations of supply chain and how marketing data should flow from the marketing department to these departments and back for enhancing customer value proposition. For products with short product life cycles, such as fashion apparel, electronic gadgets, personal computers and automobiles, effective integration of marketing and supply chain (including production, inventory and logistics) is very important. Increased level of competition and shorter product life cycles make the link between marketing and SCM more critical.

#### **The Need for Marketing and SCM Integration: An Effective DCM**

The deleterious results of not integrating marketing and SCM efforts or not deploying DCM are becoming increasingly evident. A firm cannot reach its full potential in terms of developing, refining, supporting, or delivering products and services without using marketing insights to shape and refine the SCM. For example, unnecessary quarterly variability in dispatch of products in the market causes either sluggish sales for the most of quarter followed by end of quarter surge or brisk sales for the most of the quarter followed by slack sales in the quarter end. These phenomena are caused by marketing strategies that are misaligned with SCM (Slone *et al*, 2007). Similarly, it’s difficult to execute a marketing strategy that meets the unique needs of customers – cost, quality, variety, delivery, and service – if the underlying support capabilities

of SCM can't deliver. SCM should be core component of sales and marketing promotions. According to Madhani (2011) marketing and SCM that is not effectively tied to each other result in:

1. *Under delivering*

Marketing processes increase customer interactions and raise customer expectations. But if the SCM can't deliver on marketing promises, customer satisfaction declines.

2. *Over delivering*

Marketing initiative doesn't provide information sharing on cost transparency with SCM results in delivering products or services that are unprofitable.

3. *Lost share of customer opportunities*

Without marketing and SCM integration, the SCM can't capitalize on the customer needs information that marketing uncovers, and marketing can't implement new product or market development strategy that profitably increases the scope of its offerings.

The failure of DCM and inability of marketing and SCM to effectively integrate, is significant barriers to identifying and responding to customer demand, optimizing inventories, and servicing the customer base. As data and information is not effectively shared, it also leads to either excessive inventories or out-of-stock situations. Poor collaboration leads to this situation internally, as well as up and down the external supply and marketing channels. In many cases, the marketing will not use markdowns to move obsolete inventory because the firm has allowed sales metrics to exclude the costs of carrying that inventory. The firm then pays the carrying costs of inventory and – sometimes years later – the cost of the inevitable markdown. Hence, the SCM function should be held equally accountable with the marketing function for customer service and inventory (Slone *et al*, 2007).

### **DCM: A Research Framework for Marketing and SCM Integration**

Many firms have overhauled the 'back end' of their businesses over the last decade, instituting new SCM processes that have lowered costs and reduced cycle times in manufacturing, distribution, and procurement. Other firms have focused on the 'front end' through marketing initiatives that have boosted customer retention and profitability. As in DCM, marketing insight is combined with the SCM side of supply efficiency, a number of benefits emerge. These benefits derived from DCM include:

1. Reduced level of inventory from having precise information of inventory availability,
2. Reduced lead times from better visibility of demand for products,
3. Improved customer service and retention resulting from an improved ability to meet delivery on time,
4. Increased sales from being able to confirm availability and delivery of standard and enhanced products in real time, and
5. Increased responsiveness by working across various sales channels, while taking into consideration production constraints.

The integration between marketing and SCM has been widely acknowledged (e.g. Ellinger, 2000; Soonhong and Mentzer, 2000; Svensson, 2002), leading Piercy (2002) to conclude that their better coordination could define competitive advantage in new ways. Within the marketing literature as well as the supply chain, the need to link both sides has already been emphasized. Influence of SCM in areas which were originally domain of marketing, is increasingly recognized. Lee (2001) emphasizes the problems of SCM acting independently of marketing.

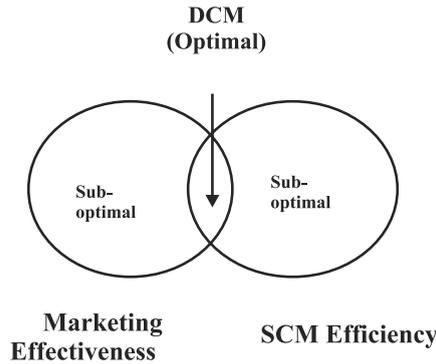
According to Flint (2004), effective marketing strategy demands sound SCM because it includes the distribution part of a marketing strategy. He also argues that the better marketing strategies of the future will be more fully integrated across the supply chain and competing against supply chains that are less well integrated. Similarly, Sheth, Sisodia, and Sharan (2000) emphasise the need for customer-centric marketing approach to be in charge of SCM. They argue that in environments with increasing diversity in customer needs and requirements, firms must rapidly adjust their supply to meet demand. The argument for integrating strengths of marketing and SCM is strong and compelling. According to Lee, 2001, the influence of marketing activities on SCM, and vice versa, has to be understood and coordinated. Similarly, supply chain costs strongly impact marketing success of product and ultimately firm profitability. Marketing and SCM have not always been seen to be closely linked in many firms (Rainbird, 2004b).

Marketing is focused on the demand chain and addresses the sell-side of the enterprise while SCM is focused on the supply chain and deals with the buy-side of the enterprise. The goal of DCM is to both reduce or if possible eliminate buffers of inventory between the different organizations in the supply chain and at the same time deliver what the customer demands. Tackling one independently of the other, leads to

sub-optimal solutions. Marketing and SCM must work together and formulate an effective DCM in order to achieve organization goals. It is relatively common to find discrete functional excellence in marketing side by side with SCM.

They frequently operate as separate, self-optimizing – even adversarial – entities. In the DCM, the marketing and SCM functions are not separate rather they are intertwined as explained below in Fig. 1.

**Fig. 1: DCM: Marketing and SCM Integration for Optimal Outcome**



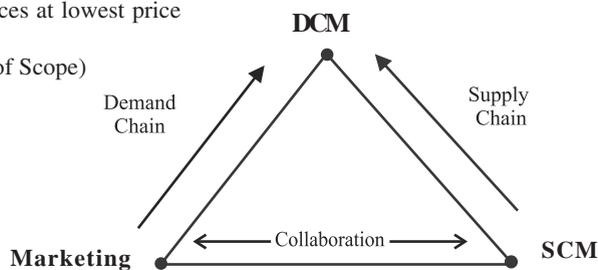
(Source: Compiled by author)

The integration between the objectives of the marketing concept (to mobilize total organizational effort to satisfy customers and generate a profit) and the concept of SCM (to link organizational and inter-organizational units to improve levels of service and reduce costs) is key concept of DCM as

explained in Fig. 2. SCM focuses on efficient supply, and tends to be cost-orientated, marketing is more concerned with revenue by focusing on the demand side of the firm. Evidently, together, they determine the firm's profitability.

**Fig. 2: DCM: Enhancing Customer Value Proposition through Marketing and SCM Integration**

- Customer Value Proposition
- Quick response to customer needs
- Processes are focused on efficiency and effectiveness
- Best-in-class products and services at lowest price
- Key success area:  
(Economy of Scale + Economy of Scope)
- Overall outcome: *Optimal*



- Effectiveness focus
- Respond quickly to customer needs
- Processes are focused more on planning
- Revenue is the key driver
- Deliver total solutions
- Key success area:  
Economy of Scope
- Overall outcome:  
*Sub - Optimal*

- Efficiency focus
- Low cost approach
- Processes are focused on execution
- Cost is the key driver;
- Short term oriented,
- Key success area: Economy of Scale
- Overall outcome:  
*Sub - Optimal*

(Source: Compiled by author)

According to Sawhney and Piper (2002), firms with a high customer value focus achieve a higher level of business performance outcomes than those that show weaker customer value emphasis. Customer value is created through well-planned, systematic use of market knowledge to shape flexible logistic and supply chain systems. It is through DCM as well as effective marketing and SCM integration that customer value is achieved. In such initiatives, supply chains are much more customer focused - they deliver great service at lower cost and a key ingredient of their success is strong collaboration between marketing as well as SCM where all are focusing on the customer value proposition as explained in Fig. 2.

#### *Illustration*

There are examples of successful firms following the principles of DCM, such as Dell in the computer industry or Zara in the fashion industry (Margretta, 1998; Walker, Bovet, & Martha, 2000). These firms increase profitability through product availability, delivery accuracy, responsiveness and flexibility by tightly linking customer and supply initiatives.

#### **ZARA**

Spanish ladies' apparel maker Zara, a unit of Spain's Inditex SA and a global player in fast fashion segment, has successfully integrated SCM and marketing initiatives by following DCM approach. Zara operates in a rapidly changing market characterized by fast response and short-product lifecycles. To manage the competition in fast fashion retail, Zara's business model is focused on high availability of products, and speed of response. Zara uses the internet to gather real-time information on the needs and changing tastes of consumers – changes that are dictated by fashion shifts as well as seasonal transitions. Rather than offering products at the lowest price by holding costs down, Zara concentrates on having the newest, unique, or most advanced products available at most affordable price. For Zara, strong market research and the ability to bring products to market quickly and efficiently through effective SCM – is the cornerstone of success. Zara brings new fashion design from sketch to store rack in as little as two weeks and represents strong marketing

and SCM capability and collaborative efforts. Zara has made significant operating and financial improvements by better matching supply and demand through better integration of marketing and SCM (Madhani, 2012).

This paper supports the emerging view that marketing and SCM are highly connected (Madhani, 2010), and are prerequisite for an effective DCM. An evaluation framework for measuring performance improvement across the various line items of income statement of a firm integrating marketing and SCM and developing DCM capability is provided in Table 1. Here, all the line items of income statement are segregated according to performance drivers, of marketing as well as SCM.

#### **Research Methodology**

Marketing is, traditionally, externally focused and creates customer value, while SCM is inwardly focused and concentrates on the efficient use of resources in implementing marketing decisions. DCM in terms of marketing and SCM integration is hence between those that define demand with those who fulfil it. One could argue that marketing and SCM functions are pervasive in a business. Indeed, from the integration of marketing and SCM perspective, that may well be true. Marketing managers are typically responsible for net income, while supply chain managers are accounted for costs.

This paper develops a financial matrix for measuring performance improvement caused by DCM (Table 2). Importance of financial metrics is highly recognized as it served as a tool for comparing organizations and evaluating an organization's behaviour over time (Holmberg, 2000). A look at this evaluation framework reveals that the line items between revenue to net income address virtually all expenses of a business incurred by marketing and SCM processes. As explained in the financial matrix, all line items of income statement are segregated in marketing and SCM performance drivers. As a resultant impact of DCM capability, net income increases, asset utilization decreases and ROA increases as shown in evaluation framework (Table 2). Application of this evaluation framework is explained in following illustration

Table 1

Serial No.	Net Income and ROA Calculation	DCM Impact	Key Functional Drivers	Performance Improvement
1	Sales Revenue	Increase	Marketing	<ul style="list-style-type: none"> <li>Faster response to market</li> <li>Increased availability of product according to taste and preference of customers</li> </ul>
2	COGS (Cost of Goods Sold)	Decrease	SCM	<ul style="list-style-type: none"> <li>Optimized Labor &amp; Material</li> <li>Better transparency and visibility</li> </ul>
3	<b>Gross Profit = (1) – (2)</b>	Increase		
4	Depreciation	Decrease	SCM	<ul style="list-style-type: none"> <li>Improved Asset Utilization</li> </ul>
5	Selling Expense	Decrease	Marketing	<ul style="list-style-type: none"> <li>Focused and customized promotion</li> </ul>
6	G & A (General & Expense Administrative)	Decrease	Marketing	<ul style="list-style-type: none"> <li>Reduced Transaction Expenses</li> </ul>
7	Logistics Expense	Decrease	SCM	<ul style="list-style-type: none"> <li>Optimized Transportation Expenses</li> </ul>
8	<b>Operating Profits -19 = (3) - (4) - (5) - (6) - (7)</b>	Increase		<ul style="list-style-type: none"> <li>Better management of inventory</li> </ul>
9	Interest Expense	Decrease	SCM	<ul style="list-style-type: none"> <li>Reduced working capital need with shorter operating cycle</li> </ul>
10	<b>Net Income = (8) - (9)</b>	Increase	Marketing SCM	<ul style="list-style-type: none"> <li>Increase in Net Income</li> </ul>
11	<b>Assets</b>	Decrease	Marketing SCM	<ul style="list-style-type: none"> <li>Decrease in Assets</li> </ul>
12	<b>Return on Asset (ROA) =</b>	Increase	Marketing SCM	<ul style="list-style-type: none"> <li>Increase in ROA</li> </ul>

**DCM: An Evaluation Framework***(Source: Compiled by author)**Illustration:*

In a following hypothetical illustration of a firm, it is envisaged that the DCM capability on integration of the marketing and SCM generates a 1% positive impact across various income

statement line items as well as asset utilization. Table 2 below represents an evaluation framework for a hypothetical illustration of a firm (base case) as well as after positive impact of DCM (new case). All figures are in millions of U.S. dollars.

**Table 2**  
**DCM in a Hypothetical Illustration of a Firm:**  
**Impact of 1% Improvement in Key Functional Drivers**

Serial No.	Net Income Calculation	Key Functional Drivers of DCM	Base Case	New Case	Net Impact
1	Sales Revenue	Marketing	100	101	1
2	COGS (Cost of Goods Sold)	SCM	65	64.99	-0.01
3	<b>Gross Profit = (1) – (2)</b>		35	36.01	1.01
4	Depreciation	SCM	4	3.96	-0.04
5	Selling Expense	Marketing	7	6.93	-0.07
6	G & A (General & Administrative) Expense	Marketing	3	2.97	-0.03
7	Logistics Expense	SCM	8	7.92	-0.08
8	<b>Operating Profits = (3) – (4) – (5) – (6) – (7)</b>		13	14.23	1.23
9	Interest Expense	SCM	5	4.95	-0.05
10	<b>Net Income = (8) - (9)</b>	Marketing /SCM	8	9.28	1.28
11	<b>Increase in Net Income (%)</b>				<b>15.87</b>
12	Assets	Marketing/SCM	130	128.7	-1.3
13	<b>Decrease in Assets (%)</b>				<b>1.00</b>
14	<b>Return on Asset (ROA) = (10) / (12)</b>	Marketing /SCM	6.15	7.21	1.06
15	<b>Increase in Return on Asset (ROA) (%)</b>				<b>17.24</b>

*(Source: Calculated by author)*

With 1% improvement in sales revenue, new sales become \$ 101 M. As COGS varies directly in proportion with sales, COGS has increased to \$ 65.65 M. After considering, impact of 1% reduction in COGS, new COGS is reduced to \$ 64.99 M. Similarly, decrease in various line items framework, caused by DCM approach with integration of marketing and SCM and corresponding increase in operating profit, net income, and ROA is shown in Table 2. Taken together, as calculated in Table 2, even a small cross-functional improvement due to DCM approach can have a profound effect on the bottom line, lift net income of a firm by approximately 16%, and increase ROA by 17%.

### Discussion

The argument for combining marketing and SCM strengths is compelling. Firms, which effectively link their marketing and supply chain operations, gain competitive advantage by differentiating not only the products and services, but also the underlying delivery processes. They have the capability to satisfy different customer needs with differentiated supply chain capabilities and, therefore, can lower prices on offerings that are of great value to the customer. The major motivation of this research is to address the challenge of interdisciplinary research and the diverse perspectives needed to organize a research agenda. Based upon the theoretical propositions and

empirical results of marketing and SCM integration described in the literature review, a conceptual framework is proposed for performance measurement of DCM initiatives. This paper presents an interdisciplinary model of marketing and SCM research agenda to formulize DCM model. If marketing and SCM research is conducted from a standalone perspective, the ability to respond to issues from a holistic view will not be developed. Using an interdisciplinary research agenda, the frontiers of knowledge on marketing and supply chain will be expanded to develop DCM model and the ability to deal with the issues of cross-functional processes will be increased. Marketing and supply chain managers will be helped by this research by being able to both view and resolve supply chain as well as demand chain issues from a holistic perspective.

### **Research Implications and Recommendations**

The main objective of this paper is to gain a better understanding of the antecedents and consequences of marketing and SCM collaboration to assess and measure benefits that may be associated with encouraging such integrative behaviour in the form of DCM. The overall goal of marketing of providing superior customer service may be jeopardized by a shortage of cross-functional collaboration. When working relations between marketing and SCM are poor, the coordination and communication that is crucial for the provision of overall customer value proposition may be lacking. In addition, functional departments may divert considerable attention and effort from serving customers to internal issues like turf protection, and blame game for errors and shortfalls. In contrast, this paper suggests that DCM approach can help firms provide superior customer value by developing a mutual understanding of responsibilities, sharing ideas, information and resources, and working together as a team to resolve cross-functional problems of marketing and SCM.

### **DCM: Major Benefits**

Firms that effectively formulate DCM and integrate their marketing and SCM activities are much more likely to achieve better corporate performance in terms of sales, profitability, market share and even customer satisfaction. DCM has enabled firms to satisfy different customer needs with supportive supply chain capabilities, as they are able to identify their customer requirements closely and adjust their product offering based on an intimate understanding of total supply chain cost. Following are major benefits of DCM:

#### *1. Enhanced Return on Investment*

DCM helps firms in building consumer-driven supply chains that will enable them to sense consumer demand and respond to it in real time and provides a superior consumer experience at every opportunity while also decreasing time to market, trimming overall costs and optimizing productivity. Effective DCM activities enhance customer satisfaction. Customer satisfaction is an important driver of a firm's profitability (Luo, Xueming and Christian Homburg (2007). There is a positive influence of customer satisfaction on financial performance indicators of a firm, such as return on investment (ROI) and return on assets (ROA) (Anderson, Fornell, and Lehmann (1994) and Rust, Moorman, and Dickson (2002). According to Gruca and Lopo (2005), a firm generates benefits for itself beyond the present transaction by satisfying a customer. These benefits arise from the positive influence of the satisfied customer's future shopping behaviour. For example, satisfied customers are more loyal and over time impact their purchase intention (Anderson and Sullivan, 1993; Reichheld, 1996; Reichheld and Sasser, 1990). Some of this increased level of purchasing is due to satisfied customers being more receptive to cross-selling efforts (Fornell, 1992). Fornell (2001) emphasize that, "satisfied customers can be viewed as economic assets of the firm that yield future cash flows."

#### *2. Better operational efficiencies*

In addition to matching resources with customer value, effective DCM can improve SCM's planning phase, further optimizing production runs and inventory. Greater insight into demand – what orders will be placed and when – to facilitate this optimization will improve return on assets (ROA).

#### *3. Understanding the efficiency and effectiveness of promotions*

Firms with effective DCM are more likely to know how well retailers participated in promotions schemes and how consumers responded to it. Thus, marketing department is able to know if the promotion plan met their return on investment (ROI) criteria and other objectives.

#### *4. Improvement in the top and bottom line*

Effective DCM has strong impact on productivity and profitability of firms. It helps firms in creating the value they seek. The primary forces for driving this are cost reduction and revenue generation achieved by superior performance of cross-functional drivers, of marketing and SCM.

## Conclusion

There has been a drastic increase in the pressure on organizations to find new ways to create and deliver value to customers through marketing and SCM initiatives. The goal of DCM is to create unique competitive advantages by linking together customer values with a more effective flow of products. The flow must always be refined and create customer value proposition in a constantly changing market. Marketing and SCM must work together in order to achieve organization goals as firms are increasingly recognizing DCM as a key driver for improving financial and operating performance.

The absence of cross-functional collaboration may result in promises made by the firm's sales and marketing department that have not been coordinated with SCM and logistics, marketing promotions that are not synchronized with supply chain delivery schedules, and failure to deliver product by a firm in a specific, requested format because it is not the most efficient way to do so. Without marketing / SCM cross-functional collaboration, firms cannot be expected to respond optimally and promptly to customers' requirements. As suggested in this paper, through a DCM approach, firms could enhance overall efficiency by interlinking the marketing and SCM operations, at the same time meet the long-term strategic goals, and maximize customer value.

The ideas presented in this article have the potential to improve marketing and supply chain managers' relational capability and accordingly formulate an effective DCM approach. The concepts of DCM can be used to enhance cooperative efforts of marketing and supply chain managers. In other words, it has potential to provide guidance to marketing and supply chain managers who wish to improve their management efficiency. This paper provides an evaluation framework for measurement of performance improvement envisaged with formulation of DCM. Finding of this paper can be further strengthened by performance evaluation of key cross-functional drivers of DCM. Being a conceptual paper, further research is required in this area to quantify benefits of DCM.

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# DCM: Emerging Business Model

Prof. Pankaj Madhani

## A b s t r a c t

A new, emerging business model of demand chain management (DCM) builds on a close alignment between marketing and SCM resources and capabilities. It involves integration between marketing (selling) and SCM (delivering) processes. It enables both parties to reduce cycle times, eliminate out-of-stocks and improve customer service in terms of in-store product availability and responsiveness. The integration of both marketing and SCM competencies can leverage a combined effect and formulate a successful DCM. The purpose of this research is to increase our understanding of DCM through the lens of resource based view (RBV). Paper identifies key organizational resources and capabilities contributing to successful development of DCM.

**Key words:** *Demand chain management, marketing, supply chain management, resource based view, intangible asset, collaboration, competitive advantage.*



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Globalization has resulted in greater competition, which is spurring market developments such as increased product variety, increased amounts of customer-adapted products, and shortening product life cycles (Christopher *et al*, 2004). This also implies that markets are becoming volatile and more fragmented (Christopher and Peck, 2004), thereby generating further management challenges in supply chain management (SCM). Supply chains have been very efficient at moving products to consumers, but supply chains need to progress towards effectiveness. Hence, everything that is produced, moved, or handled across supply chain should be in response to a known customer requirement.

Deployment of a differentiated supply chain strategy is one way for the organizations to make sure that highly varying needs of markets are met at the same time as economies of scale are maintained (Hilletoft, 2009). When developing a differentiated supply chain, SCM not only focuses on cost efficiencies (how can firm achieve a lower cost per item), but also on effectiveness (is firm distributing products to specific customer needs at a profit-maximization price). Since,

consumers are the focus of firm's value chain's existence; consumer demand should be at the core of its business strategy. In doing so, the supply chain transforms itself into a so-called demand-driven chain (Langabeer and Rose, 2002) or, simply, a demand chain. It means that the organizations instead of employing a traditional "one-size-fits-all" supply chain strategy, develops several supply chain solutions, each one appropriate to a specific product or market condition, by combining different supply and distribution strategies. To be successful, the business organization not only needs to focus on the supply chain, but also on the demand chain.

Normally, SCM focuses on efficient supply (demand fulfillment) and tends to be cost-orientated, whilst marketing is more concerned with revenue (demand creation) by identifying customer needs (Juttner *et al.*, 2007). In such an environment, the demand creation and the demand fulfillment processes are fairly estranged; marketing sets the strategy (what to sell, where to sell, and how to sell) and SCM executes it. The synergies between marketing and SCM have been widely recognized both in the marketing literature (Achrol, 1991, 1997; Achrol and Kotler, 1999; Flint, 2004; Kumar *et al.*, 2000; Sheth *et al.*, 2000; Srivastava *et al.*, 1999) as well as in the SCM literature (Alvarado and Kotzab, 2001; Bechtel and Jayaram, 1997; Cooper *et al.*, 1997; Fisher, 1997; Lambert and Cooper, 2000; Mentzer *et al.*, 2001; Min and Mentzer, 2000; Svensson, 2002). It has been argued that better coordination between marketing and SCM could result in greater competitive advantages (Piercy, 2002).

Additionally, most of this research propose collaboration between certain marketing and SCM practices to exploit specific synergies, while a limited amount of research call for a combined management approach, entitled demand chain management (DCM), where the demand creation and the demand fulfillment processes are more intertwined and needs to be collaborated in a more comprehensive way (Hilletoft and Ericsson, 2007; Rainbird, 2004; Walters and Rainbird, 2004). The objective of DCM is to understand, influence and manage the consumer demand and achieve agility and responsiveness throughout the entire chain (Langabeer and Rose, 2002). The purpose of this research is to increase our understanding of DCM through the lens of resource based view (RBV).

The article is structured as follows. The first section highlights the literature on the marketing, SCM, DCM and RBV to highlight key resources and capabilities contributing to successful deployment of DCM. The second section then

draws on the overview of and significance of RBV strategy as practice approach to research into DCM development. Next section outlines a research framework for better understanding of DCM and provides a resource capability matrix for DCM. The article then reports discussion and the research implications, which indicate how and why organizational resources enhance collaboration between marketing and SCM and development of an efficient DCM. The article concludes with suggestions for future research. The specific goals of this article are threefold. First, to illustrate how RBV can influence DCM considerations in the context of generating and sustaining customer value: Second, to develop a conceptual framework supported by a resource capability matrix that facilitates DCM and third, to posit a set of research directions that will enable scholars to further advance the study of RBV empirically in DCM development.

### Literature Review

Literature relating to this research focus arises in two contexts: first, perspectives on DCM as well as marketing and SCM integration and secondly, implications of RBV with focus on characteristics of organizational resources and capabilities. Functional managers often lack the ability to effectively integrate across business functions inside the organization (Fawcett and Magnan, 2002). It is actually easier for organizations to create integrated linkages with their suppliers, and customers, than to drive integration inside the organization (Sabath and Whipple, 2004). The literature review revealed that relatively little attention to the key contributing factors of marketing and SCM integration or DCM development was paid.

Several authors have highlighted the conflicting goals of marketing and supply chain managers (Eliashberg and Steinberg, 1997; Shapiro, 2006). Integrating marketing and logistics is a challenge in any organization, since there is a natural tension between these two functional areas (Bozarth and Berry, 1997). At best, the tension between marketing and SCM results into either under delivering or over delivering. Under delivering refers to situation where marketing processes increase customer interactions and raise customer expectations. But if the SCM can't deliver on marketing promises, customer satisfaction declines. While over delivering refers to situation when marketing initiative doesn't provide information sharing on cost transparency with SCM results in delivering products or services that are unprofitable (Madhani, 2011).

Various researchers have emphasized that marketing and SCM must work together effectively to leverage their processes and operations for building competitive advantage (Bowersox *et al.*, 1995; Mentzer *et al.*, 1989). Marketing and SCM are often considered by functional managers as separate and distinct entity from one another as they do not collaborate or co-ordinate activities (Flint and Mentzer, 2000; Johnson and Borger, 1977).

Integration is comprised of two essential components, interaction and collaboration. Interaction represents the communication aspects associated with interdepartmental activities, while collaboration represents the willingness of departments to work together. Collaboration enhances exchange of information by reducing information asymmetries and reduces operational down-times and product errors (Kandemir *et al.*, 2006). Collaboration skills reduce counter-productive behavior by promoting goal alignment, more frequent and open information sharing, higher levels of managerial interaction, the exchange of expertise and resources, and a willingness to share risks and rewards (Morgan, 1997; Rai and Bajwa, 1997; Eng, 2006; Green *et al.*, 2006). According to Stevens (1990), collaboration should develop across functional areas inside the organization, with the goal of creating a more tightly integrated internal operation.

Organizations began to realize that more intense and collaborative relationships among members of marketing and SCM could create differential advantage. Porter (1980a) contends that differentiation strategies need strong co-ordination among functions. Information sharing thus generally facilitates decision synchronization through providing relevant, timely, and accurate information required to take effective decisions for marketing and SCM members. According to Song and Parry (1992), cross-functional integration contributes to better quality of information transfer among functional units, and enhances information flows across functional areas.

To maximize value creation for customers, it is necessary for the functional areas of the organization such as marketing and SCM to co-ordinate efforts with each other. Coordinating activities across functional and inter-organizational boundaries are difficult (Stevens, 1989; Ellinger *et al.*, 2006). Conflicting goals of functional areas and competition for scarce resources diminish trust and the willingness of decision makers across the cross-functional areas. Several researchers have identified collaboration as a means of reducing inter-functional and inter

organizational conflict (Madhok and Tallman, 1998; Moberg *et al.*, 2003; Nicovich *et al.*, 2007). Collaboration process include sharing information, eliminating task duplication, reducing overhead at the interface, and transferring responsibilities among members for task execution. Integration encompasses co-operation (alignment of interests) and co-ordination (alignment of action).

Within organizations, inter-functional collaboration is difficult to implement (Hansen and Nohria, 2004; Nunes and Cespedes, 2003), not properly understood (Tjosvold *et al.*, 1992) and distinctly rare (Sabath and Fontanella, 2002). Only few organizations have learned how to collaborate effectively, suggesting that a collaboration capability is rare, valuable, and hard to replicate (Frohlich and Westbrook, 2001; Fawcett *et al.*, 2009). Collaboration has been called the driving force necessary for effective marketing and SCM integration and DCM development. DCM facilitates firms in enhancing market responsiveness capabilities as it is based on a customer-focused organization culture and making customized value offerings (Wayland and Cole, 1997; Walters, 2002), real-time product availability, prevention of stock-out without over-stocking, and continuous replenishment in small quantity (Lee, 2002; Lee, 2003; Simchi-Levi *et al.*, 2003; Agrawal *et al.*, 2004).

The RBV takes an “inside-out” or organization specific perspective on why organizations succeed or fail (Dickson, 1996). A resource is an observable (but not necessarily tangible) asset that can be valued and traded. Capabilities are the ability to perform a particular task or activity and refer to a firm’s capacity to deploy and reconfigure resources. They give the firm the ability to integrate, build and reconfigure internal competences. They can also be described as the information based processes that are developed and implemented through a firm’s human resource base or people (Amit and Schoemaker, 1993). A resource is firm-specific asset to which a monetary value can be attached. While, a capability refers to a special type of a resource whose function improves the productivity of other resources (Makadok, 2001). Capabilities can be classified into functional and integrative capabilities. The former allows a firm to deepen its functional knowledge, such as marketing, and SCM expertise. The latter integrates different functional capabilities (Verona, 1999).

Existing research addressing the interface between marketing and SCM within both fields emphasize the mutual benefits of a close integration (Juttner *et al.*, 2010). Although, the potential benefits of DCM are generally recognized, a closer

study of the extant research suggests that it does not examine organizational resources contributing to such development of DCM. As a result, the current literature focuses mainly on benefits of integrative relationships of marketing and SCM (Ellinger *et al*, 2000). Such a scenario raises some key questions on development of DCM: Are marketing and SCM integration needs different from those of other functional areas? Is it possible to identify a relationship between DCM and organizational resources? Can certain organizational resources and capabilities be identified that can be considered critical in context to DCM on account of their peculiarities? Although the interface between marketing and SCM has been addressed before, to date there is no framework which conceptualizes DCM development from RBV perspective.

This paper works in this direction to identify key organizational resources contributing to successful marketing and SCM integration and hence development of DCM. It also provides a research framework for further empirical validation of DCM from RBV perspectives. This research is intended to extend previous research by exploring DCM as well as the

scope of marketing and SCM integration and corresponding firm level resources and capabilities. In addition to, examining resource dependency relationships, the research also critically looks at tangible and intangible organizational resources driving such integration and success of DCM.

### RBV of Competitive Advantages: An Overview

According to RBV, sustainable competitive advantage derives from valuable, rare, difficult to imitate and imperfectly substitutable resources (Barney, 1991). Based on the resource heterogeneity, the RBV highlights the role of strategically important but may be subtle and detailed differences between competing organizations (Whittington, 1996). According to RBV top-performing organizations are those that are able to develop, obtain, and/or exploit strategic resources — organization assets that are rare, valuable, difficult to imitate or substitute and organizationally activatable (Wernerfelt, 1984). High performing organizations possess resources that are “valuable, rare, inimitable” and supported by socially complex organizational processes as shown in Table 1.

**Table 1: Resource Payoff Matrix of an Organization**

Resource Attributes of an Organization				Resource Attributes of an Organization		
Valuable	Rare	Valuable	Supported by Organization	Resource Payoff	Strategic Implications	Performance of Organization
0	-	-	Organizationally activatable	< 0	Competitive disadvantage	Less than normal
1	0	-		0	Competitive parity	More than Normal
1	1	0		> 0	Temporary competitive advantage	More than normal
1	1	1		> 0	Sustained competitive advantage	More than normal

(Source: Matrix developed by author).

With these resources, it is possible for organizations to develop and maintain competitive advantages for superior performance (Collis and Montgomery, 1995). Resource tangibility also contributes to competitive advantage. Tangible resources often have physical substance and can be easily transferred, while

intangible resources are tacit and difficult to transfer across context and location (Villalonga, 2004). Intangible resources are viewed as the key building blocks for developing and maintaining an organization’s competitive advantage (Itami, 1987) as intangible assets make them rarer and more difficult

to imitate or substitute than tangible resources. Black and Boal (1994) proposed that firms build competitive advantages not through the deployment of any one resource, but through the combination of tangible and intangible resources to create performance-enhancing capabilities. The RBV finds competitive advantage in a firm's internal capabilities and resources (Wernerfelt, 1984). According to the RBV, organizations allocate resources towards developing capabilities and competencies to improve performance with the least expenditure (Day and Wensley, 1988).

RBV argues that organizations in possession of strategic resources will earn rents or super normal profits. Strategic resources must be valuable, i.e. have potential to realise business opportunities; they must be rare, i.e. not readily available, be at a premium; and they must be non-imitable and non-substitutable, i.e. the resource can only be used for the specific relationship interaction (Das and Teng, 2000). Resources that are valuable cannot become sources of competitive advantage if they are in plentiful supply. Rarity refers to the condition where the resource is not simultaneously available to a large number of organizations. Inimitability, caused by the social complexity of the resource, creates the potential for sustained advantage. RBV places heavy emphasis upon inimitability of the resources as a prerequisite to sustaining whatever competitive advantages they generate (Rumelt, 1995). Finally, resources and capabilities are embedded in the organization, and the degree to which they are able to add value may depend upon the presence of complementary assets (Christmann, 2000).

RBV considers the organization as a bundle of resources and capabilities which, when combined become sources of economic rents and sustainable competitive advantage (Grant, 1991). Assets are defined as anything tangible or intangible the organization can use in its processes for creating, producing, and/or offering its products to a market, whereas capabilities are repeatable patterns of actions in the use of assets to create, produce, and/or offer products to a market (Sanchez *et al.*, 1996). Assets can serve as inputs to a process, or as the outputs of a process (Srivastava *et al.*, 1998). Assets can be either tangible (e.g., information technology (IT) infrastructure) or intangible (e.g., organization culture). In contrast, capabilities transform inputs into outputs of greater worth (Christensen and Overdorf, 2000; Schoemaker and Amit, 1994). Capabilities can include skills, such as managerial ability, or processes, such as collaboration or integration. RBV approach determines whether the organization's initial bundle

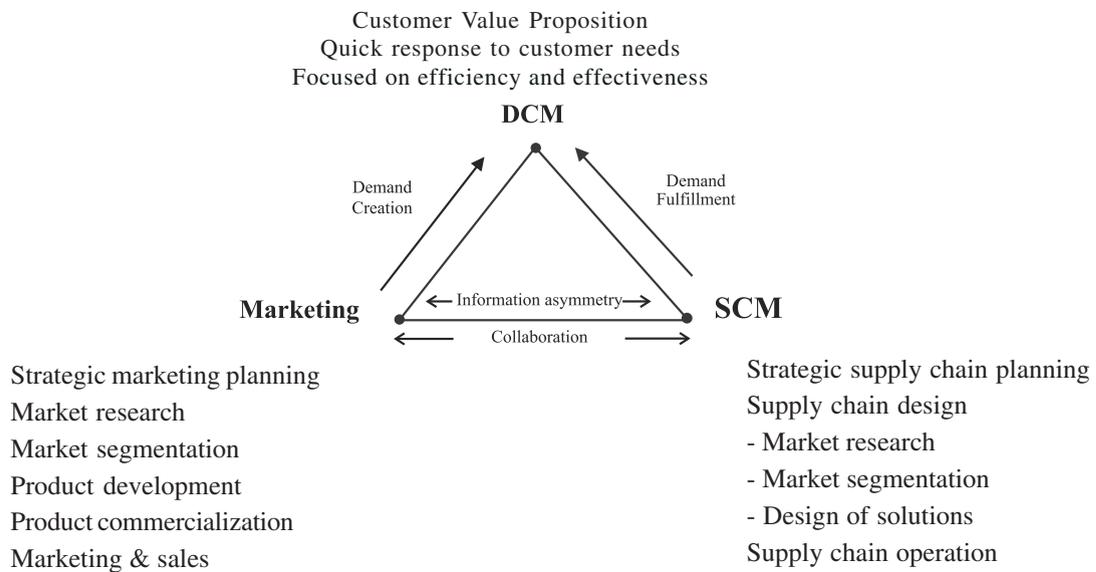
of resources and subsequent resource investments are the sources of the firm's success (Hoskisson *et al.*, 1999; Barney, 2001; Priem and Butler, 2001; Srivastava *et al.*, 2001), and to what extent the process of customer value creation might be highly context and resource dependent (Priem, 2007).

### **Demand Chain Management (DCM): A Conceptual Framework**

The view of the consumer as an integral part of the chain is perhaps the most important issue in the shift from SCM to DCM. The focus of DCM is on real-time flow of demand-related information from point of inception (end-users) to the point of use (suppliers). Different customer segments have different expectations and need to be fulfilled by firms (Robert, 2004). Firms must be market-driven so that they can respond to the market characteristics quickly and proactively (Day, 1999). A market-driven firm has market orientation superior to that of its competitors. Market orientation enhances market responsiveness capabilities of firms (Agrawal and Gupta, 2006).

Although, DCM is a relatively new concept, it has already been defined in several ways in the literature. At first it was introduced as a replacement of SCM and it highlighted issues such as customer focus, market mediation, demand driven activities and agility by addressing development and management of demand driven supply chains (Heikkila, 2002; Hines *et al.*, 2002; de Treville *et al.*, 2004; Vollmann *et al.*, 1995). However, these types of issues were also addressed in SCM and therefore there were no major differences between SCM and DCM at the time, and the concept never gained approval in the academic world.

However, more recently, DCM has been introduced as an approach to capture the synergies between marketing, and SCM (Walters, 2006). The goal of DCM is to coordinate the demand creation and the demand fulfillment processes to gain competitive advantage by differentiating not only the products but also the delivery process, as well as to exploit synergies between marketing and SCM. Thus, DCM can be defined as: "the alignment of demand creation and demand fulfillment processes across functional, organizational and inter-organizational boundaries" (Hilletoth and Ericsson, 2007). The demand creation processes comprise all the activities necessary for creating demand and are closely linked to marketing, while the demand fulfillment processes comprise all the activities necessary for fulfilling demand and are closely linked to SCM. This implies that a framework of DCM may be constructed based on two interrelated parts: marketing and SCM as shown in Figure 1.

**Figure 1: Demand Chain Management (DCM): A Conceptual Framework**

(Source: Framework developed by author)

Marketing focus on demand creation, while SCM on demand fulfillment, and it is very important that processes in marketing and SCM are coordinated through collaboration. It is also imperative that the demand creation and the demand fulfillment processes are regarded as equally important and this approach also needs to be clearly expressed in the business strategy, otherwise the conventional view, where marketing sets the strategy and SCM executes it, will rule. A DCM approach should incorporate all major demand creation and fulfillment processes within the organization. As can be seen in Figure 1, examples of major demand creation processes are strategic marketing planning, market research, market segmentation, product development, and marketing and sales (Kotler *et al*, 2009), while examples of major demand fulfillment processes are strategic supply chain planning, supply chain design, and supply chain operations (Gibson *et al*, 2005). DCM highlights the interplay between marketing and SCM as an enabler of customer value creation. The ultimate goal of DCM is to gain competitive advantages by differentiating not only the products, but also the delivery process as well as to exploit the linkages between marketing and SCM.

#### **Demand Chain Management (DCM): A Resource-Capability Matrix**

According to Schrage (1990), inter-functional collaboration involves departments working together, having a mutual

understanding, sharing a common vision, sharing resources, and achieving goals collectively and it is dependent upon peoples' ability to trust each other, build meaningful relationships, and appreciate one another's expertise (Mintzberg *et al*, 1997). Thus, inter-functional collaboration allows diverse functions to converse, learn and work across the functional silos that have characterized organizational structures (Liedtka, 1996). Internal collaboration in the organization is aided by strategic alignment between cross-functions, the existence of a shared vision, mutually held goals, and joint rewards (Kahn and Mentzer, 1996). Internal collaboration was found to positively impact organization performance (Stank *et al*, 2001). Collaboration between the demand creation and the demand fulfillment processes are important in all business environments; however, the required level of collaboration to succeed differs greatly. The Relationship of different levels of marketing and SCM collaborative efforts can be clustered into four categories as shown in matrix of Figure 2. The matrix is having four quadrants. Detailed explanation of each quadrant is given below with illustrations drawn from Marks & Spencer (M & S), K-Mart and Zara.

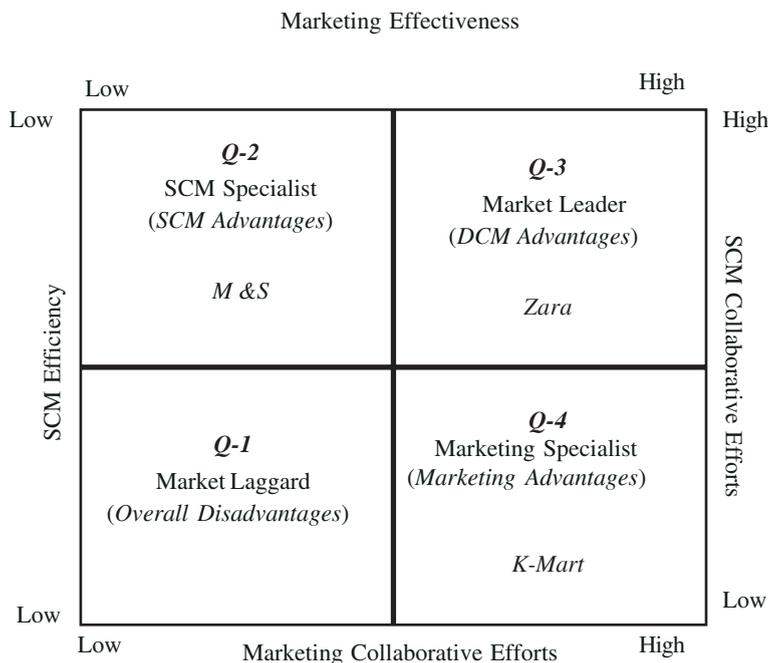
#### *Quadrant -1(Q-1)*

Firms in the first category, have neither marketing nor SCM strengths. In the scenario when both SCM efficiency as well as marketing effectiveness is low, as shown in Q-1, no

integration occurs between marketing and SCM mainly due to low level of resources and capabilities and ultimately derives

disastrous result for the organization. Firms in this quadrant are *market laggard*.

**Figure 2: Demand Chain Management (DCM): A Resource-Capability Matrix**



*Quadrant-2(Q-2)*

Firms in the second category, *SCM specialists*, have strength in managing the demand fulfillment processes. This enables them to improve asset turnover and to reduce time and costs in supply and distribution. Such firms are having high level of SCM efficiency. In the scenario when SCM efficiency is high supported by high level of resources and capabilities while marketing effectiveness is low, as shown in Q-2, only partial marketing and SCM integration occurs with sub-optimal result for the organization.

Many firms have accomplished major cost savings through their SCM excellence (Rainbird, 2004). Still, a SCM strength that is not linked to marketing differentiation capability usually limits the organization to competing on price and availability (Piercy, 2002). This implies that competition through SCM excellence assumes that price is a major determinant of competitive advantage. An effective supply chain alone will not ensure adequate customer satisfaction by reducing costs and therefore prices (Childerhouse and Towill, 2000) as explained below with example of *Marks & Spenser (M&S)*.

*Marks & Spenser (M&S)*

The problems that leading UK retailer Marks & Spenser (M&S), experienced during the 1990s were not because they mismanaged its operational effectiveness, but rather because they missed the shift in customer expectations and did not appear to respond to those expectations. M&S continued to be supply chain driven, and has not responded to competitive threats to core merchandise groups by new entrants and had ignored customer expectations for quality. Marks & Spenser’s problems are due to this failure to understand the demand chain and its management processes (Walters, 2006). As its response to competition has been cost-focused – by “looking at ways to buy products more cheaply,” it resulted in taking away from the quality of the product and that alienated customers from M&S. Hence, organizations need to focus on demand chain also along with supply chain.

*Quadrant -3(Q-3)*

Firms in the third category, *market leaders*, have effectively collaborated their demand creation and fulfillment processes to gain competitive advantage by differentiating not only the

products, but also the delivery processes. They have the resource and capability to develop an effective DCM and satisfy different customer needs with differentiated SCM capabilities. This type of firms focused on customer needs and the value they can provide, all based on a comprehensive understanding of the SCM. The ultimate goal of DCM is to become a *market leader* and to take care of markets characterized of intensive competition, high product variety, large amounts of customer-adapted products, and short product life cycles. In the scenario when both marketing collaborative efforts as well as SCM collaborative efforts are high supported by high level of resources and capabilities, as shown in Q-3, full integration occurs between marketing and SCM with development of an effective DCM. This results into optimal result for the firm as explained below with illustration of *Zara*.

#### *Zara*

Spanish ladies' apparel maker *Zara*, a unit of Spain's Inditex SA and a global player in fast fashion segment, has successfully developed DCM by integrating marketing and SCM initiatives. *Zara* stores use handheld devices i.e. personal digital assistant (PDA) to send Inditex HQ, all information regarding sales trends and insights on what customers would like to see, customer feedback and reactions, "buzz" around a new style as well as their ordering needs. Rather than offering products at the lowest price by holding costs down, For *Zara*, strong market research and the ability to bring products to market quickly and efficiently through effective DCM – is the cornerstone of success.

The demand chain of *Zara* identifies a demographic segment of 17 to 22 year olds that are fashion but budget conscious. As customer value drivers are clearly identified, *Zara* has no uncertainty regarding the market segment within which it operates. *Zara*'s value proposition specifies merchandise characteristics, customer targeting, and retail location strategy. The essential features of the *Zara*'s supply chain design are production schedule and quality controls. In the manufacturing process, raw garments are "cut" by *Zara* staff and sent for completion by outsourced workshops that are sent clear instructions for the work to be "finished," with a low risk that the items will be rejected in quality check. *Zara* has process that checks each delivered item twice for quality. The distribution centre of *Zara* is built on two levels, one for folded apparel, boxed in cardboard cartons, the other for plastic-covered garments on hangers (Walters, 2006). Its system is capable of handling 40,000 items an hour and completing store deliveries within 24-48 hours, by road and

air (Tagliabue, 2003). *Zara* has made significant operating and financial improvements by better matching supply and demand through better integration of marketing and SCM and effective development of DCM.

#### *Quadrant -4(Q-4)*

Firms in this category, *marketing specialists*, have strengths in identifying unique customer needs and in developing strong brands. However, a marketing strength that is not linked to SCM advantage usually leads to a high cost base and slow delivery (Piercy, 2002). Since firms that are unable to deliver according to the promises made eventually will lose credibility and customer satisfaction will decrease. Examples of problems faced by this type of firm are under-delivering and lost opportunities if the firm cannot capitalize on the differentiated customer needs (Juttner *et al.*, 2007). In the scenario when SCM efficiency is low and hindered by low level of resources and capabilities while marketing effectiveness is high, as shown in Q-4, only partial integration occurs between marketing and SCM with sub-optimal result for the firm as explained below with example of once America's largest retailer *K-Mart*. In this situation, a purely mechanistic supply chain approach entirely driven by cost efficiency needs to be replaced with a broader view of overall effectiveness.

#### *K-Mart*

A core theme of *K-Mart*'s marketing communication strategy was to issue promotional pamphlets and circulars for promoting sale items. The mailers increased store traffic and invariably increased retailer sales. However, the marketing efforts were not backed by SCM. As a result, there were frequent shortages of promoted sale items. Customers came in to buy the promoted 'sale' item, were frustrated that it wasn't in stock, and left the *K-Mart* store with disappointment. *K-Mart*'s repeated out of stock item notices were major cause of customers' grievances. After several such repeated experiences, customers began ignoring the *K-Mart*'s promotional flyers altogether. The exact causes of *K-Mart*'s problem can be attributed to inventory related SCM problems and had a negative effect on *K-Mart* performance. It incurred huge losses even as its competitors became more profitable. Finally *K-Mart* filed bankruptcy on January 22, 2002 (Madhani, 2010b).

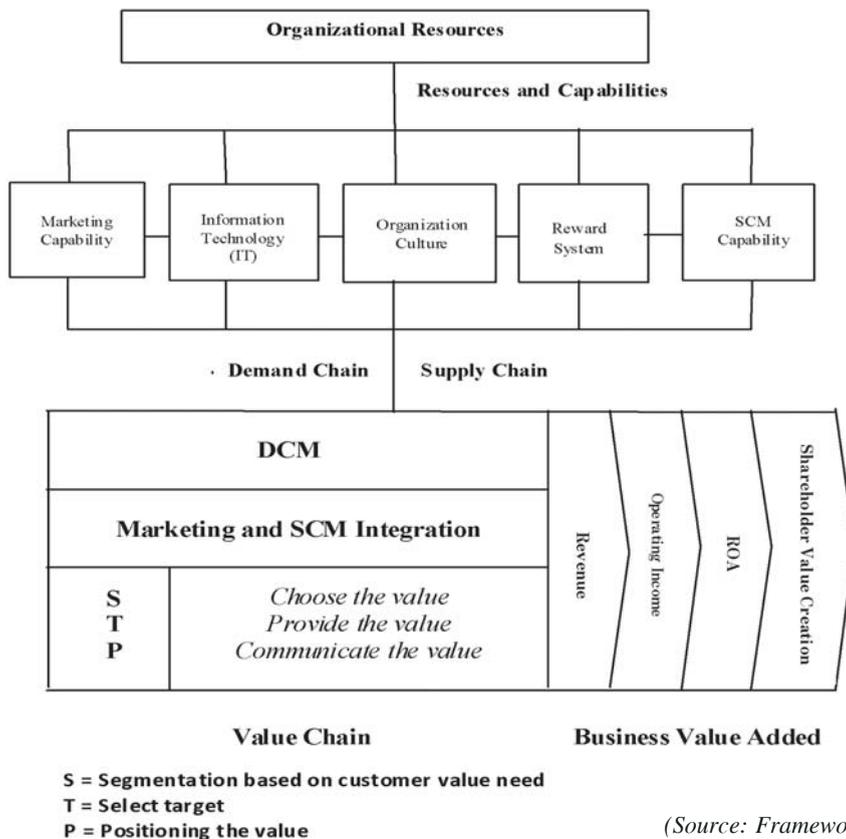
#### **Research Methodology**

The research focuses on development of a business value added framework for DCM. Porter describes customer value as the advantage that a firm creates for its customers by either

lowering its customers' costs or by raising its customers' performance in real and perceived terms (Porter, 1980b). The value chain is a tool to segregate a business into strategically relevant activities (Brown, 1997). This categorization enables identification of the source of competitive advantage by performing these activities more cheaply or better than its rivals. To demonstrate the ways in which organizational resources and capabilities can generate overall business values, Porter's (1985) value chain framework is used as a basis to present a business value added framework as shown in Figure 3. The main purpose of DCM design is to increase revenue, reduce cost, increase return on asset (ROA) and ultimately enhance shareholder value creation. In this framework, organizational resources and capabilities act as an independent variable while marketing and SCM competence, integration of marketing and SCM and finally development of DCM are dependent variables and creates added values for the organization. The role of added value has long been accepted as a means of securing competitive advantage (Naumann, 1995) and long-term success of the firm (de Chernatony and McDonald, 1998).

The more valuable and rare the resources, the greater the advantage the organization may obtain. Certain firm-level conditions such as organization culture, environment of mutual trust etc. enable the firm to more fully exploit key resources. According to Peteraf (1993), valuable resources must be properly organized and leveraged to achieve a competitive advantage. The theoretical foundation for this study is the RBV. Indeed, the fundamental goal of the RBV is to explain why some firms outperform their counterparts, focusing on the notion that rare, valued and inimitable competencies lead to better market performance and higher profitability (Barney 1991, 2001). RBV asserts that the more rare a value-generating resource, the more likely it will be the source of a sustained competitive advantage. The more intangible nature of resource, make it harder to imitate. In addition, tacit elements of process knowledge make it harder for competitors to imitate. Resources that cannot be easily transferred or purchased, that require a major change in the organization climate and culture, are more likely to be unique to the organization and, therefore, more difficult to imitate by competitors (Madhani, 2010a).

**Figure 3: Business Value Added Framework for DCM: A RBV Perspective**



## Discussion

A resource is valuable when it enables an organization to implement strategies that improve efficiency and effectiveness. Organizational resources include competences and organizational capabilities. The resources are usually considered as consisting of inputs into the process, and capabilities as the processes by which the resources are utilized. Resource heterogeneity persists across the organization as key organization resources, to varying degrees, cannot be readily traded in the marketplace. From a RBV perspective, the competitive advantage often depends on the organization's superior deployment of capabilities (Day, 1994) as well as possession of intangible assets (Hall, 1997; Itami and Roehl, 1987; Srivastava *et al.*, 1998). This gain may result from development of capabilities over an extended period of time that become embedded in an organization and are difficult to trade. Alternatively, the organization may possess a capability that is idiosyncratic to the organization or difficult to imitate (Dierickx and Cool, 1989) or embedded in an organization's culture. As such, capabilities are critical drivers of organization performance.

Tradable resources (e.g., tangible resources such as IT infrastructure can be acquired in the market, while non tradable resources (e.g., intangible resources such as organizational resources) must be developed and maintained by an organization over time. Unfortunately, organizations have traditionally been more focused on technology solutions than they have on cultural change in the organizations (Fawcett and Magnan, 2001). Although IT enables connectivity, it does not guarantee proactive information sharing among functional area. Many managers perceive information to be a proprietary resource and are reluctant to share information that, if used opportunistically, could disadvantage their position and status. An unwillingness to share information can thus negate the benefits of investments in IT. Specifically, when critical information such as sales, inventory levels, sales forecasts, or market entry plans - is withheld, a firm's IT investments yield minimal improvements in coordination and overall performance. By contrast, a culturally embedded willingness to share information in the organization should leverage and magnify the value of IT deployment by increasing the amount, quality and timeliness of information that is shared among the members (Lawrence and Lorsch 1967).

However, developing an information-sharing culture as an organizational capability is not easy. To achieve high levels of cultural willingness, a firm must commit sufficient resources

to specific organizational processes and mechanisms - e.g., top management involvement and formation of inter-organizational teams - that enhances the level of information sharing (Wagner and Buko, 2005; Patnayakuni *et al.*, 2006). As shown in business value added framework (Figure 2), in addition to marketing and SCM capability of the organization, following are major resources contributing to marketing and SCM integration and hence successful development of DCM.

### *Information Technology (IT)*

Inadequate technology has often been blamed for impeding collaborative initiatives (Barratt, 2004; Cassivi, 2006). IT has been widely described as a critical tool for an effective integration across functional areas. IT serves as a vital backbone linking functional areas throughout the organization. IT facilitates tighter internal integration (Brah and Lim, 2006). In the era of networked systems, firms need to leverage IT for the enhancement of its market responsiveness capabilities (Agrawal, 2012).

DCM is an IT-led strategic concept that enables firms and their resellers to rapidly respond to rapidly changing customer needs that affect market demand (Caruso, 2003). DCM relies on IT capabilities to enable linkages across departments resulting in tighter integration. Successful supply chain processes should be linked to those of the demand chain through an effective information system. DCM needs extensive use of IT for minimum distortion of demand-related information (bullwhip effects), knowledge-centric decision mechanism, web-based transparent business transactions, and sales processes automation (Lee and Whang, 2001; Agrawal *et al.*, 2010) and matching of supply with demand (Beech, 1998). However, despite massive investments in IT, collaborative capabilities have not dramatically improved (Beth *et al.*, 2003). This reality suggests that other forces such as organizational structure and culture are blocking collaboration's emergence (Fawcett *et al.*, 2008). IT is a valuable but no longer rare resource as investments in IT infrastructure can be easily replicated by competitors and thus provides only a temporary competitive advantage (Fawcett *et al.*, 2007). IT-based advantage tends to diminish quickly due to the relatively low barriers to imitation and acquisition by other organizations (Clemons and Row, 1991).

IT infrastructures are commodity like in nature, in that they are readily available on the open market. Therefore, physical IT investments per se cannot support sustainable competitive advantage. Rather, IT based competitive advantage depends

on the organization's competence and ability to leverage IT investments to support organization strategy (Bharadwaj, 2000; Ravichandran and Lertwongsatien, 2005). Hence, IT enables unique value-creation opportunities for DCM, if it is embedded with other complementary organizational resources and capabilities. IT infrastructure assets are easy to copy and, therefore, represent the most fragile source of competitive advantage (Leonard-Barton, 1992).

#### *Organization Culture*

Inhibitors of collaboration, might exist anywhere within an organization, and may include people, policies, or processes (Dent and Goldberg, 1999; Kotter, 1995). Schein (1994) argues that it is important to design organizations that promote inter-group collaboration, as this is essential for organizational effectiveness. The relative scarcity of collaborative behaviour may be due to management's lack of involvement (Hammer, 2004). Members of a marketing and SCM group have no incentive to invest in collaborative capabilities required for DCM if another member is likely to exercise asymmetrical power and influence to expropriate any collaborative gains. In essence, the existence of power asymmetry and opportunistic behaviour deters the commitment of resources needed to initiate meaningful collaboration (Murnighan *et al.*, 1993).

According to Stank *et al.*, (1999), information sharing is also critical to successful collaborative efforts. Organizational theory can provide basis to understand how organization culture influences whether or not the people within an organization will be willing to share information (McKinnon *et al.*, 2003; Al-Tameem, 2004; Constant *et al.*, 1994). In fact, each functional area within an organization may have a different attitude when it comes to sharing information. However, only when the functional areas of the organizations are consistently willing to share the information will lead to better decision making. The extent to which the organization's culture creates a willingness to share information determines how much information is shared (Lee *et al.*, 2000; Mendelson, 2000), irrespective of the amount of investment in IT.

The dilemma is that no one desires to share sensitive information without knowing for sure how other members of the organization will behave in the future. Applying this perspective, it is proposed that an organizational-culture-based willingness to share information is a relatively scarce resource that facilitates DCM development. The deployment of IT to build processes and share information is easily

replicated. Changing the culture within an organization is much more difficult to accomplish. Thus, the organization that can inculcate a culture in which willingness to share information among cross functional areas are high, can take advantage of a more sustainable, non-imitable competitive advantage that should lead to relatively higher performance levels.

Proactive information sharing can improve relationship strength among marketing and SCM members, enhance the ability to coordinate value-added activities of DCM and exploit the collaboration opportunities, hence; organizations with a strong information-sharing culture outperform their counterparts. However, developing an information-sharing culture as an organizing context is not easy. The use of IT for transmission and processing of information is necessary for synchronous decision making (Sanders and Premus, 2005). Although, IT enables connectivity in the organization, it does not guarantee proactive information sharing required for development of DCM as explained above.

#### *Performance Measurement and Reward System*

The major hurdles with internal integration efforts in the organization may be the result of disjointed policies and practices, misaligned measures and rewards (Bowersox *et al.*, 2000). In order to ensure successful DCM based on effective collaboration between marketing and SCM, members of both functional areas are encouraged to clearly define mutual objectives and associated performance measures and link their performance and reward systems with decision synchronization, information sharing, and incentive alignment. Clear linkage will encourage the marketing and SCM members to improve shared processes that encourage DCM development. Simatupang and Sridharan (2002) argued that incentive alignment, which promotes appropriate performance metrics, constitutes a key feature for successful collaboration. Visibility of key performance metrics and process data enables the participating members to elicit the bigger picture of the situation.

Incentive alignment refers to the process of sharing costs, risks, and benefits among the participating members. This scheme motivates the members to act in a manner consistent with their mutual strategic objectives. Making decisions that are optimal for an effective incentive scheme means that the marketing and SCM members are self-enforcing for aligning their individual decisions with the mutual objective of improving overall performance through DCM. The clearer the linkage between performance and incentives, the more

effectively the given incentives are able to motivate the desired behaviour. Information sharing is required to signal the marketing and SCM members that incentives for an effective DCM development are available, timely, equitable, and performance-contingent. On the marketing side, the size of the reward can be in the form of increased sales, less price markdowns, increased inventory turns, less stock-outs, reduced inventory, and lower operating costs. On the SCM side, the size of the reward can be measured in terms of less inventory, faster response, and lower supply costs.

### Practical Implications

Cross-functional and inter-organizational conflict impedes the relational advantages of collaboration. Specific structural enablers to enhance an organization's collaborative capability for DCM are identified and described in this research, providing insight into how firms can exploit inter-firm resources for DCM advantage. The conceptual framework presented in this paper has a number of practical implications. First, by illustrating how DCM enhances customer value proposition, the framework reflects role of organizational resources as well as capabilities and shows how a collaboration approach can infuse and energise the activities of marketing and SCM and finally strengthens DCM. Second, the interactive nature of DCM development, challenges the traditional view of sequential and resource independent view of marketing and SCM relationship. Third, by linking DCM model with business value added, the framework appeals corporate management by acknowledging the potential of the proposed RBV approach for enhancing customer value proposition.

### Research Analysis and Future Directions

Resource possession by the organization is a necessary but not sufficient condition for competitive advantage. The sufficient condition for competitive advantage - how is the organization capable to use or exploit its resources to create unique capabilities and value (Teece *et al*, 1997)? Having a competitive advantage generally suggests that an organization can have one or more capabilities when compared to its competitors. In today's competitive business environment, success is largely dependent on the extent that organizations are able to integrate traditional functional areas. Integration creates internally interwoven processes that cannot be easily replicated (Daugherty *et al*, 1998). The RBV contends that a firm's resources and capabilities directly influence organizational performance and provides a theoretical

framework for understanding development of DCM. As marketing and SCM integration and hence DCM development is a complex phenomenon, it is influenced by a variety of tangible and intangible resources of an organization.

The essence of the RBV theory is that an organization consists of "a collection of productive resources" that can be exploited to create value and advantage (Rubin, 1973). According to RBV, organizations possess resources, a subset of which enables them to achieve competitive advantage, and a further subset which leads to sustainable competitive advantages (Penrose, 1959). Collaborative inter-departmental integration within organization typically involves informal processes based on trust, mutual respect, alignment of cross functional goals, information sharing, the joint ownership of decisions, and collective responsibility for outcomes. Collaborative behaviour is based on cooperation, and willingness, rather than on compliance (a requirement). Its success is contingent upon the organizational culture and ability of individuals from interdependent departments to build meaningful relationships.

As important as the firm's resources are, how it configures them may be more important (Eisenhardt and Martin, 2000). That is, combining and structuring resources to create a dynamic capability can lead to even greater, more difficult-to-replicate advantage (Newbert, 2007). A firm can possess operational and dynamic capabilities (Helfat *et al*, 2007). Operational capabilities are the firm's capacity to combine, assemble and deploy the firm's assets using pre-determined protocols, activities, routines, processes, systems and the skills of its employees to make products and services that are a source of potential profits to the firm available to its customers. Operational capabilities are identifiable processes, including managerial, technical and marketing processes used at the firm at a functional level (Spanos and Lioukas, 2001).

A capability is not observable (and not necessarily tangible), cannot be valued, and changes hands only as part of its entire unit. Since, capabilities are difficult to imitate or substitute, it also follows that the organizations that most successfully cultivates these capabilities (i.e. that strategically adds capabilities which best complement the existing capability base) will outperform its competitors in the long run (Hitt and Ireland, 1986; Hunt and Morgan, 1995; Peteraf and Bergen, 2003). Without a collaboration capability, organizations cannot effectively combine, co-ordinate, and integrate functional skills. The collaboration process influences functional participants within the organization. As they work together, they learn more about each others' value-

added contributions, build relationships of trust, and begin to view colleagues from other areas as resources rather than as competitors.

In the era of the globalization and information age, organizations place a premium upon collaboration as a new source of competitive advantage (Dyer and Singh, 1998) as they look beyond functional boundaries and evaluate how the resources and capabilities of marketing and SCM can be utilised to create exceptional value in the form of DCM. Functional organization can easily become dysfunctional silos, which engender turf conflict and dissipate value creation (Anderson, 1982; Wong and Wong, 2008). Collaboration can act as a valued dynamic capability (Agarwal and Selen, 2009). Functional collaboration, as a dynamic capability, mediates the conflict resulting from functional orientations, and improves performance. To the extent that collaboration helps bring complementary competencies together to create customer value, such development of DCM through collaboration of marketing and SCM becomes an important source of competitive advantage.

In the collaborative system of DCM, marketing and SCM members will seek to reduce markdowns, increase sales, reduce business transaction costs, and reduce inventory. The DCM involves integration between marketing (selling) and SCM (delivering) processes and enables both parties to reduce cycle times, eliminate out-of-stocks and improve customer service in terms of in-store product availability and responsiveness. DCM plays a crucial role in improving overall performance of the organization that benefits both the functional areas. However, it is important to note that the application of DCM is still in its infancy and needs to be researched further, both from a marketing and SCM perspective.

### Conclusion

The objectives of this research are first, to demonstrate the advantages of a close linkage between marketing and SCM integration; second, to emphasize the impact of marketing and SCM integration and hence DCM on the organization performance; and third, to provide some new perspectives in explaining marketing and SCM integration and subsequently DCM development from RBV perspectives and explore the organizational resources and capabilities contributing to such DCM initiatives. A new, emerging business model, of DCM builds on a close alignment between marketing and SCM resources and capabilities. This paper aims to understand how to achieve marketing and SCM integration and

deployment of an effective DCM through better utilization of resources and capabilities of the organization. DCM creates strategic assets for the organization. According to RBV, strategic assets are seen as the basis for shareholder value creation because they enable the organization to generate and implement strategies that improve its overall efficiency and effectiveness. Organizations achieve competitive advantage through creation of superior competencies that are leveraged to create customer value and achieve cost and/or differentiation advantages, resulting in increased market share and better profitability performance (Coyne, 1986; Prahalad and Hamel, 1990). The integration of both marketing and SCM competencies can leverage a combined effect (Ellinger, 2000; Martin and Grbac, 2003; Srivastava *et al*, 1999) and formulate a successful DCM.

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# Firm Size, Beta and Financial Leverage: Stock Exchange in Iran

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## A b s t r a c t

*This paper investigates the relationship between firm size, beta, and financial leverage with the profitability of the selected companies at the Tehran Stock Exchange. One hundred and one firms' data over a 5 years period from 2003 to 2007 at the Tehran Stock Exchange were collected and a regression analysis method applied in the study. The results show that profitability of a company increases as the firm size increases, with type of company acting as a balancing factor. Beta plays a different role in different industries. Regardless of the industry type, beta and profitability have a considerable inverse relationship. There is no significant relationship between types of industry and financial leverage. Financial leverage has no relationship with profitability, excluding the type of industry.*

**Key words:** *Company size, Beta, Profitability, Stock Exchange, Tehran, IRAN*



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One of the main characteristics of developing countries is that they often suffer from chaos and fragmentation in their national savings and capital. In such kinds of economies, capital generally does not lead to optimum production. One of the main and important tools of privatization in developing countries is the market. By doing research in this area and undertaking multilateral data analysis regarding the global stock market, developing countries markets could grow and flourish with research results. Investment often attracts ineffective capitals, but guides it to productive economics. Considering the direction of investment (toward risk and return), investment capital also goes towards industries that have high profitability and low risk (profitable activities), which eventually are allocated to optimum resources. The profitability is an important indicator, which plays a key role in the decision making process of investors.

Profitability may be affected by internal factors or external factors. Internal factors are reflected by operating decisions

and companies' size, while external factors are reflected by the type of industry that the companies run its business and the macro factors that might affect directly to the companies' performance. Profitability can be affected by operating decisions when the assets are used effectively to increase profit. Operating decisions can indicate the effectiveness of the companies' management in making the profit from the assets used. Therefore operational efficiency can be achieved by dividing sales or revenue with total assets (Sari, 2007).

However, to increase the assets to generate more profits, companies might use leverage. One type of leverage that companies use is debt. When debt is used to expand the companies by adding more operational assets, then it can generate more cash flows which are expected to increase the value of return on equity ratio (Brigham and Ehrhardt, 2005).

Moreover, return on equity can also be useful in comparing the profitability of the company to the other company in the same industry. This is important because different industry might produce different profitability. As it is explained by Michael Porter that industry presents different pattern of profitability due to different forces that the industry exposed to such as concentration, entry barriers, and growth (Spanos, Zaralis, and Lioukas, 2004).

An attempt is made in this study regarding the profitability in selected firms at stock exchange. Building on Fama and French's theory, this study aims to find a relationship between firm size, beta and financial leverage on the profitability of selected companies at the Tehran stock exchange. In looking at factors affecting the profitability of companies in various industries, this study provides valuable information for investors in making the right decisions. In addition, an understanding of the relationship/s between profitability and firm size, beta, and financial leverage will enhance overall knowledge towards success and failure of firms listed at the Tehran stock exchange.

### Literature Review

The two major forms of financial capital are debt and equity. As financial capital plays an important role in the profitability of small firms, it would be interesting to look at the relationship between profitability and different sources of financing.

Some previous studies have found that there is a positive relationship between profitability and financial capital. Geroski et al (1997) from their study suggest that corporate growth rates for the current period can reflect the assessment

of managers concerning the long-term profitability of a company. Using data from 271 large firms in the United Kingdom, Geroski et al found a significantly positive correlation between corporate growth rates for the current period and the changes in expectations in the firm's long-term profitability. Similarly, Echevarria (1997) from a sample of Fortune 500 industrial companies over a twenty-year period from 1971 through 1990 found a positive relationship between capital investment and profitability. These results were however based on samples of large firms.

More recently, Hughes (1997) examines small firms in the United Kingdom and reached a similar conclusion but found that profitability for small firms was lower due to their heavy reliance on debt. Holmes et al (1994) in their study investigated the costs of debt for small firms and found the application costs for debt were higher for small firms than for medium and large firms. Using data from 425 small and large Australia firms, Holmes et al found that the cost of debt financing was higher for small firms than that for medium and large firms, as higher debt financing cost would limit small firms in their growth. Similarly, Binks and Ennew (1996) examine the issue of financing constraint on growing firms, surveyed a sample of over 6,000 firms in the United Kingdom, and found that firms expecting to grow in the future perceived a rather tight credit constraint.

Fama and French (1995) in their study tried to explore whether the behavior of stock prices, in relation to size and book-to-market-equity (BE/ME), reflect the behaviour of earnings. Consistent with rational pricing, high BE/ME signaled persistent poor earnings and low BE/ME signaled strong earnings. Moreover, stock prices forecasted the reversion of earnings growth observed after firms were ranked on size and BE/ME, with market, size, and BE/ME factors in earnings similar in returns. The market and size factors in earnings helped greatly explain such returns, but Fama and French still found no link between BE/ME factors in earnings and returns.

Roquebert et al (1996), who study profitability, found that industry effects accounted for 10%, corporate effects for 17%, and business unit effects for 37% of the variation in business unit profitability. McGahan and Porter (1997) whereas analyzed several competing models, and found that industry effects accounted for 17% of the explained variance in profitability, while business unit effects accounted for 30% of the variance. In addition to this, McGahan (1999) found that permanent industry effects accounted for 30%, and firm

effects accounted for 66% of the explained variance in accounting profits.

The results of a study conducted in Taiwan whereas indicate a statistically positive relationship between profitability and capital growth. When financial capital is further divided into debt and equity, results indicate a significantly positive relationship between profitability and equity financing, but a significantly negative relationship between profitability and debt financing. Moreover, the profitability of small firms tends to be positively related to both the external economic conditions and the firms' previous profitability (Fu et al, 2002).

Research by Huang and et al (2006) show that stock split announcements with only little evidence is positively related to future profitability. In fact, stock splits are mostly in general negatively related to future profitability in subsequent years after the announcement, except for dividend-paying firms with a split factor less than 0.5. This negative relationship holds, regardless of future profitability measures. Therefore, such an empirical finding suggests that stock splits are not useful signals of a firm's future earnings prospects.

Another study, by Hovey (2007) on stock exchanges in Chinese listed companies shows that, leverage has a significant negative relationship with profitability. Hovey also suggested that some firm-specific factors that are relevant for explaining firm leverage, which are generally referred to in studies in developed economies such as growth opportunities, size and tax shields, are also relevant in China. A very important result of this study was that foreign holdings were found to have a significant relationship with the leverage of listed firms in China. Somewhat unexpectedly, institutional ownership, through legal person holding companies, state ownership and private holdings were not found to have a significant relationship with the capital structure choices of firms in China.

In a recent study, Dolde and Knopf (2009) investigate the relative importance of managerial entrenchment and incentive alignment as indicated by REIT risk-taking, with the two theories making contradictory predictions about the sign of the relationship between insider ownership and risk. Dolde and Knopf tested for the possibility of diminishing entrenchment returns to insider ownership, with the empirical results for equity and asset betas soundly rejecting linear models in favor of non-monotonic relations, with reversals at insider ownership of 36%. Up to that point (36%),

increasingly entrenched insiders mitigate their own risk aversion, while above 36%, incentive alignment emerges as managers become more substantial owners. Leverage declines at an accelerating rate above 20% insider ownership, with results suggesting a shift in the composition of risk, from leverage risk to asset risk, reflecting a comparative advantage and a crossover in the relative monitoring costs of debt and equity.

### Research Methodology

The study carried out on the selected firms listed at the Tehran stock exchanges from period of 2003 to 2007, which is more recent data than earlier studies conducted in Iran. The aim of this study is to determine the relationship between company size, beta and financial leverage in the companies accepted at the Tehran Stock Exchange, and will focus on the 101 firms from six different industrial groups.

The different six industrial groups were selected as follows:

- mines and metals industry,
- pharmaceutical and food industry,
- chemical and plastics industry,
- automotive and transportation industry,
- machinery and electric equipments industry, and
- other industries

Criteria for selecting companies listed at the Tehran stock exchange are listed here:

- firms where their fiscal year is at the end of March (which is the end of Iranian traditional calendar)
- firms which were listed at the Tehran stock exchange at least one year before the period of this study

Considering the above limitations, the researchers were able to select 101 companies, without sampling. So, all of the companies listed at the Tehran stock exchange during 2003 to 2007 with the mentioned criteria were studied.

For this study, profitability is considered as the dependent variable and company size, company beta and financial leverage as independent variables.

**Profitability:** profitability is the ratio of net profit in the year running to equity in last year ( $\text{Profitability} = EI_t / BE_{t-1}$ )

**Company size:** In this study, as in Fama and French's model, company size is equal to last common stock market value (ME) into number of common stocks.

Beta:  $\beta_A = \text{COV}(A, M) / V_{(M)}$

**Financial leverage:** leverage financial = Total debt / Total assets

**Research Hypotheses**

The following three hypotheses are made for this research:

*First hypothesis:* There is a significant relationship between firm size and profitability of companies in various industries listed at the Tehran Stock Exchange.

*Second hypothesis:* There is a significant relationship between Beta and profitability of companies in various industries listed at the Tehran Stock Exchange.

*Third hypothesis:* There is a significant relationship between financial leverage and profitability of companies in various industries listed at the Tehran Stock Exchange.

**Results**

*First research hypothesis test :*

H1: There is a significant relationship between firm size and profitability of companies in various industries listed at the Tehran Stock Exchange.

The effect of firm size on the profitability among various industries was tested by a regression analysis. The test showed that the effect of firm size on the profitability with 99 percent confidence is confirmed in the following five industries: mines and metals industry, pharmaceutical and food industry, chemical and plastics industry, automotive and transportation industry, machinery and electric equipments industry. Overall, the H1 was confirmed. The results of regression test are shown in Table 1.

**Table 1: The Result of Regression Analysis on the First Research Hypothesis by Industrial Groups**

Industry type	F	Sig.	Correlation	Coefficient of determination	Adjusted Coefficient of determination
Mines and metals	16.010	0.000	0.375	0.140	0.132
Pharmaceutical and food	12.615	0.001	0.323	0.105	0.096
Chemical and plastics	7.421	0.009	0.366	0.134	0.116
Automotive and transportation	12.603	0.001	0.323	0.105	0.096
Machinery and electric equipments	10.706	0.002	0.395	0.156	0.141
Other industries	0.224	0.638	0.055	0.003	-0.011

Industry type	Variable	Coefficients		Test index	
		Not standardized		T	Sig.
Mines and metals	Constant	-24.460		-3.909	0.000
	Firm Size	23.567	0.375	4.001	0.000
Pharmaceutical and food	Constant	-9.368		-3.273	0.001
	Firm Size	9.608	0.323	3.552	0.001
Chemical and plastics	Constant	-12.360		-2.558	0.014
	Firm Size	12.243	0.366	2.724	0.009
Automotive and transportation	Constant	-10.655		-3.348	0.001
	Firm Size	10.612	0.323	3.550	0.001
Machinery and electric equipments	Constant	-4.176		-3.037	0.004
	Firm Size	4.308	0.395	3.272	0.002
Other industries	Constant	-1.059		-0.350	0.727
	Firm Size	1.376	0.055	0.473	0.638

The result of the multiple regression analysis with three independent variables (company size, company beta and financial leverage) on the selected companies shows the effect of firm size on profitability is confirmed equally in the five industrial groups.

**Second research hypothesis test :**

H1: There is a significant relationship between beta and profitability among various industries.

The effect of beta on the profitability among various industries was tested by a regression analysis. The test shows that the effect of beta on the profitability with 99 percent confidence,

is confirmed in the mines and metals industry, chemical and plastics industry, automotive and transportation industry. This result is not confirmed for the remaining three industry groups. In addition to this, the relationship between beta and profitability in mines and metals industry, is a reverse relationship, and in chemical and plastics industry, and automotive and transportation industry is a direct relationship. Therefore the research hypothesis is confirmed for three industrial groups, but also rejected for three other industrial groups. The result of a multiple regression test also confirms these results. The results of regression test on the second hypothesis are shown in Table 2.

**Table 2: The Result of Regression Analysis on the Second Research Hypothesis by Industrial Groups**

Industry type	Variable	Coefficients		Test index	
		Not standardized	standardized	T	Sig.
Mines and metals	Constant	0.780		5.602	0.000
	beta	-0.264	-0.430	-4.716	0.000
Pharmaceutical and food	Constant	0.776		15.448	0.000
	beta	0.079	0.156	1.642	0.103
Chemical and plastics	Constant	0.648		6.561	0.000
	beta	0.273	0.487	3.868	0.000
Automotive and transportation	Constant	0.457		4.874	0.000
	beta	0.344	0.403	4.572	0.000
Machinery and electric equipments	Constant	0.316		9.525	0.000
	beta	0.069	0.210	1.638	0.107
Other industries	Constant	0.377		4.972	0.000
	beta	-0.025	-0.045	-0.388	0.699

Industry type	F	Sig.	Correlation	Coefficient of determination	Adjusted Coefficient of determination
Mines and metals	22.236	0.000	0.430	0.185	0.177
Pharmaceutical and food	2.698	0.103	0.156	0.024	0.015
Chemical and plastics	14.962	0.000	0.487	0.238	0.222
Automotive and transportation	20.906	0.000	0.403	0.162	0.154
Machinery and electric equipments	2.683	0.107	0.210	0.044	0.028
Other industries	0.151	0.699	0.045	0.002	-0.012

**Third research hypothesis test :**

H1: There is a significant relationship between financial leverage and profitability among various industries.

The possibility of any relationship between financial leverage and profitability was tested by using Spearman Correlation

Test. The results showed that the relationship between financial leverage and profitability was significant and in reverse. These results are shown in Table 3. This means there is no relationship between financial leverage and profitability in certain industrial groups.

**Table 3: The Result of Spearman Correlation Test on the Third Research Hypothesis by Industrial Groups**

Industry type	Spearman Coefficient	Correlation between Profitability and Financial Leverage	
		Sig.	Number
Mines and metals	-0.247	0.013	100
Pharmaceutical and food	0.076	0.429	110
Chemical and plastics	0.069	0.632	50
Automotive and transportation	0.068	0.482	110
Machinery and electric equipments-	0.082	0.533	60
Other industries	-0.163	0.161	75

Therefore, it can be concluded that financial leverage has no effect on profitability of selected firms at the Tehran Stock Exchange and that the third hypothesis is rejected. The researchers also attempted to investigate the effect of all three variables on the profitability (regardless of industry type).

The results indicated that a relationship between firm size and profitability are significantly positive, the relationship between beta and profitability is significantly negative, and the effect of financial leverage on the profitability is not significant (See Table 4).

**Table 4: The Result of Multiple Regression Test on the Whole Data**

Model	profit = $b_0 + b_1ME + b_2BETA + b_3DEBT + \epsilon$				
		Variable Coefficients		Test Index	
		Non Standard	Standard	T	Sig
Constant	-	-12.855		-7.866	0
Firm Size	+	12.710	0.365	8.385	0
Beta	-	-0.113	-0.181	-4.214	0
Financial Leverage	-	0.093	0.016	0.384	0.701

Correlation	Coefficient of Determination and Adjusted		Coefficient of Determination and Adjusted	
	(R) <sup>2</sup>	(R <sup>2</sup> )	F	Sig.
(R) Multiple	0.363	0.132	25.394	0.000

### Conclusion

The results of the study indicate that firm size and profitability have a significantly positive relationship. It is also drawn from this study that industry's type is a balancing variable in profitability of firms. This finding confirms the results of other studies carried out in Iran by Derakhshand-Dashti (2003) and Mosavi-Kashi (1999). They had found a positive relationship between industry's type and profitability. In addition, this result is in accordance with Bokhari et al (2005) and Lawrence et al. (2006) studies.

Bokhari and his colleagues had investigated the predictive ability and profitability of simple technical trading rules for different sizes of company. Their results suggest that technical trading rules have progressively higher predictive ability on the small size companies.

Lawrence et al and his colleagues examined sources of profit change for Telstra, Australia's largest telecommunications firm. A new method allows for changes, in a firm's profits to be broken down into separate effects due to productivity change, price changes, and growth in the firm's size. This in turn

allows them to calculate the distribution of the benefits of productivity improvements between consumers, labour, and shareholders. The results show that around half the benefits from Telstra's productivity improvements from 1984 to 1994 were passed on to consumers in the form of real price reductions.

In addition to this, the relationship between beta and profitability differs among various industrial groups. The relationship between beta and profitability in mines and metal industries is reverse and in chemical and plastics industries is direct and positive. Regardless of the industries' type, beta and profitability have a considerable inverse relationship. Qenaat-Larijani (2006) had found similar results in Iran.

The result of this study also showed that there is no linear relation between financial leverage and profitability within different industries studied except in mines and metal industries which had a negative impact. These findings are accordance with results of study by Delavari (1997) in Iran. Delavari had found that getting bank loan by firms at Tehran Stock market did not lead to a suitable financial leverage and increase in profitability.

We have also ranked the selected industries by profitability, firm size, financial leverage and beta. Here are the industries by high profitability respectively: pharmaceutical and food industries, chemical and plastics industries, mines and metal industries, automotive and transportation industries, machinery and electric equipments industries.

The ranked selected industries by firm size are: chemical and plastics industries, mines and metal industries, automotive and transportation industries, machinery and electric equipments industries.

The ranked selected industries by firm financial leverage are: automotive and transportation industries, other industries, machinery and electric equipments industries, pharmaceutical and food industries, mines and metal industries, chemical and plastics industries.

The ranked selected industries by beta are: automotive and transportation industries, chemical and plastics industries, mines and metal industries, pharmaceutical and food industries, machinery and electric equipments industries, other industries.

## Suggestions

The results of the study indicate that firm size and profitability have a significantly positive relationship. Therefore it can be recommended to investors and stakeholders to pay attention to firm size at the time of transaction. Right now, the number of shareholders is one of the important parameters in measuring value of stock.

In addition to this, the relationship between beta and profitability differs among various industrial groups. Therefore, it can be recommended that beta is an important parameter in profitability for mines and metal industries, chemical and plastics industries, and machinery and electric equipments industries.

Furthermore, there is no significant relationship between financial leverage and profitability, so investors and stakeholders can make well judged decisions without considering the financial leverage of the company.

**Acknowledgement:** The author would like to thank Dr. Seyed Hassan Saleh Nejad, Assistant Professor, Payame-Noor University, Sari Center, Iran, and Dr. Mehdi Meshki Miavaqi, Assistant Professor, Payame-Noor University, Rasht Center, Iran, for their valuable help in conducting this research.

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# Nexus : Between SE and TBL

Dr.B.Rajasekaran

## A b s t r a c t

Sustainable Entrepreneurship(SE) has emerged as a new area of scholarship in the field of entrepreneurship research which seeks to address social and environmental problems. Sustainable Entrepreneurship takes into account both social aspects and environmental effects and the long-term economic and business consequences of new venture opportunities. The concept of Triple Bottom Line (TBL) has been popularly used by many scholars to describe what Sustainable Entrepreneurship is all about and in conducting studies pertaining to SE. This paper explains how TBL serves as a useful tool in sustainable entrepreneurship for enhancing the commitment towards society, environment and economic welfare.

**Key words:** *Sustainability, Sustainable Entrepreneurship, Triple Bottom Line.*



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**R**esearch in entrepreneurship has traditionally focussed on the different roles of entrepreneurs in an economy and on economic growth. The change in the field of entrepreneurship has brought in many new practices. Among others, entrepreneurial practices do not have to associate themselves to economic growth or profit generation only (Tilley and Young, 2009).

Over the last two decades the social and environmental outcomes of entrepreneurship have generated interest amongst scholars, practitioners and policy makers (Mair and Marti, 2006).

Many researchers (e.g. Neck, Brush and Allen, 2009; Paredo and McLean, 2006; Sullivan Mort, Weerwardena and Carnegie, 2003) have remarked that the process of entrepreneurship can also be applied to achieve social and environmental rather than purely economic outcomes.

A new perspective with regard to entrepreneurs' contributions, that is, the environmental degradation as a negative

consequence of entrepreneurial activities due to market failures has been reported in a few studies (Cohen and Winn, 2007; Dean and McMullen, 2007).

Business sector is often viewed as one of the largest contributors to environmental degradation (Cohen and Winn, 2007). Pacheco et al (2010) mention that the literature on welfare economics has concluded that entrepreneurial activities actually contribute to environmental degradation.

There are several studies which claim that the environmental degradation caused by entrepreneurs should be and could be resolved by them (Hockerts and Wüstenhagen, 2010; O'Neil and Ucbasaran, 2011; Parrish, 2010; Tilley and Young, 2009).

Despite the negative contributions to social and environment, some researchers ((Hockerts and Wüstenhagen, 2010; O'Neil and Ucbasaran, 2011; Parrish, 2010; Tilley and Young, 2009) argue that entrepreneurs are also playing a significant role in leading the business activities towards sustainability.

Hall et al. (2010) assert that entrepreneurship may be a panacea for many social and environmental concerns. Pacheco et al (2010) also agree that entrepreneurs are important force for social and ecological sustainability.

Market imperfections or failures, such as public goods, negative externalities, monopoly power, inappropriate government intervention and imperfect information (Bator, 1958) can result in environmental and social problems and provide potentially profitable opportunities for entrepreneurs seeking to address them with innovative business solutions (Austin, Stevenson and Wei-Skillern, 2006; Dean and McMullen, 2007).

All these reflect that there is a need to shift away from the traditional view of entrepreneurship as focused only on economic growth. One of the significant transitions is that entrepreneurship is slowly moving from merely fulfilling economic needs in its initial stage to integrating sustainability practices in the latter stage. This transition is slowly being accepted by entrepreneurs; due to increasing awareness of sustainability development among entrepreneurs (Hall et al, 2010).

Thus, Sustainable entrepreneurship has emerged as a new area of scholarship in the field of entrepreneurship research which seeks to address social and environmental problems created by market failure while attaining entrepreneurial rents.

### **What is Sustainable Entrepreneurship?**

Researchers have used the terms “sustainable entrepreneurship,” sustainability entrepreneurship,” and “sustainopreneurship” inter-changeably. The term ‘sustainable entrepreneurship’ combines two words, sustainability and entrepreneurship. The relationship between entrepreneurship and sustainable development has been addressed by various streams of thought and literature such as ecopreneurship, social entrepreneurship.

The seven revolutions – population, resource management and environmental degradation, technological innovation and diffusion, information flows, globalization, conflict, and governance assist in merging the two fields of entrepreneurship and sustainable development. (Peterson, 2004)

Sustainability covers preserving the domains of economic, social and environmental in an equal manner through continuous commitment from the entrepreneurs. In other words, these three domains are to be emphasized equally.

Sustainability is connected with efficiency, equality, and intergenerational equity based on economic, social and environmental aspects (Ciegis, Ramanauskiene & Martinkus, 2009).

Brundtland Commission (1987) defined sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainability is built on three pillars: a sustainable society, sustainable environment, and sustainable economy (Zaman & Goschin, 2010).

From an economic perspective, sustainable development is the kind of development which ensures that the future generations’ income per capita will not be lower than that of the current generation. From a sociological perspective, such development supports society by fostering close social ties. And from an ecological perspective sustainable development ensures the diversification of the biosphere, the basic ecosystems and ecological processes (Ciegis, Ramanauskiene & Martinkus, 2009).

Sustainable entrepreneurship combines the goals of sustainable development (Jacobs, 1995), with entrepreneurial action and economic growth (Gibb, 1996).

Kuckertz and Wagner (2010) point out that sustainable entrepreneurship involves those entrepreneurial activities

which contribute positively to sustainable development and the objectives derived from it. According to them, sustainable entrepreneurship is not only associated with the promise of more traditional concepts of entrepreneurship, but bears additional potential both for society and the environment.

Gibbs (2009) defines sustainability entrepreneurship as “utilizing creative destruction so that it becomes the driving force for the establishment of a holistic and sustainable economic–environmental–social system.”

Sustainable entrepreneurship is defined as entrepreneurship which encompasses social, economic and environmental concerns of relevant internal and external stakeholders (De Palma and Dobes, 2010).

Sustainable entrepreneurship is focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed as including economic and non-economic gains to individuals, the economy, and society (Shepherd and Patzelt, 2011).

Sustainable entrepreneurship can be described as an innovative, market-oriented, and personality-driven form of creating economic and societal value by means of breaking through environmentally or socially beneficial markets, and product or institutional innovations exceeding the start-up phase of a company (Schaltegger and Wagner, 2011).

Sustainable Entrepreneurship can be distinguished from social and environmental entrepreneurship in terms of its emphasis, even though these different perspectives are interrelated (Young and Tilley, 2006).

Social entrepreneurship has emerged as a separate theme in the entrepreneurship literature which examines how entrepreneurship can be used to solve social problems (Weerawardena and Sullivan Mort, 2006).

Environmental entrepreneurship, another theme which has evolved in the recent years, focuses on the identification, evaluation and exploitation of opportunities that emerge as a result of environmentally relevant market failure (Dean and McMullen, 2007).

Sustainable Entrepreneurship considers issues of social responsibility and socio-effectiveness but also brings in considerations for the future. While the concept of social

entrepreneurship is subject to definitional ambiguity in terms of whether or not it refers exclusively or primarily to non-profit enterprises, it can be argued that Sustainable Entrepreneurship is consistent with entrepreneurs striving simultaneously for profit and for improving local and global environmental and social conditions (Cohen and Winn 2007).

Sustainable Entrepreneurship emphasizes environmental sustainability in addition to issues of environmental stability and ecological equity considered by environmental entrepreneurship.

Thus, Sustainable Entrepreneurship takes into account both social aspects and environmental effects while also considering the long-term economic and business consequences of new venture opportunities. The broad spectrum of the definitions of sustainable entrepreneurship indicates a unique balance between a focus on societal, environmental, and economic issues.

#### **Nexus Between Sustainable Entrepreneurship and Triple Bottom Line:**

The concept of the Triple Bottom Line (TBL) proposed that business goals were inseparable from the societies and environments within which they operate. Whilst short-term economic gain could be chased, a failure to account for social and environmental impacts would make those business practices unsustainable.

Consumers’ awareness of environmental issues combined with the world’s rising population, unstable economic situation and environmental struggles have created a new global climate that no organization can afford to ignore. This trend makes the environmental sustainability aspect of the Triple Bottom Line an important issue for organizations to address.

TBL concept has been popularly used by many scholars to explain “sustainable development” (Chick, 2009). In fact, the use of TBL is not only limited to explain or describe sustainability development in a conceptual manner. It is well accepted that businesses play a significant role in showing commitment towards society, environment and economic; and TBL serves as a useful tool in helping businesses to do so (Mark-Herbert et al., 2010).

TBL has been adopted and adapted by researchers in conducting studies pertaining to SE (eg: Schlange, 2006; Hockerts and Wüstenhagen, 2010).

Many studies on Sustainable Entrepreneurship have used the concept of triple bottom line (TBL) coined by Elkington (in 1994) to describe what Sustainable Entrepreneurship is all about (eg: Schlange, 2006; Dixon and Clifford, 2007; Tilley and Young, 2009; Hall et al., 2010; Hockerts and Wüstenhagen, 2010).

Triple-Bottom-Line (TBL) concept was coined by John Elkington in 1994. The author concludes that there are three main value creating aspects in the sustainable conduct, namely: (i) Economic prosperity; (ii) Environmental quality and; (iii) Social justice.

Dixon and Clifford (2007) also developed a model based on the trinity of social, environmental and economic to examine whether the entrepreneurs could operate an economically viable venture whilst retaining their environmental and social values. They conclude balancing among the three aspects of social, environmental and economic remains as the main challenge for most businesses.

Hall et al (2010) also adopted TBL in explaining sustainability development among entrepreneurs. They mention that sustainable entrepreneurs should place the three domains of TBL, namely social, environmental and economic objectives on "equal footing." However, reconciling these three domains in an equal manner remains difficult and challenging.

From a SE perspective, entrepreneurs have a responsibility to their investors and shareholders but also to nature, society, and future generations.

Sustainable entrepreneurs holistically combine environmental, economic and social aspects of sustainability into their enterprise (Parrish, 2007; 2010; Young and Tilley, 2006).

Schlange (2009, p. 18) suggests that "a venture qualifies as sustainability-driven if it combines opportunities and intentions to simultaneously create value from an economic, social and ecological perspective."

Sustainable entrepreneurs, therefore seek to enact a positive 'triple bottom line' (i.e., positive returns to people, planet and profits) in their enterprise (Elkington, 1998). They do this by undertaking entrepreneurial actions that support issues such as social equity, animal welfare, economic stability and a reduction in environmental degradation.

The TBL concept has further been developed into "3P formulation" which consists of "people, planet and profit"

(Elkington, 2004). "People, Planet and Profit" are used to succinctly describe the triple bottom lines and the goal of sustainability. There are some researchers such as Crals and Vereeck (2004) who have described SE by using a 3Ps formulation which includes people, profit and planet. The importance of these three domains in relation to sustainable entrepreneurship is discussed here:

#### **People:( Social Dimension)**

The first aspect, people, refers to an enterprise's treatment of its workforce, the protection of human rights, guarding against child labour and imposing self-restraint in desisting from following unethical labour practices. It might include creating jobs, which is a laudable goal but cannot be undertaken without simultaneously considering its impact on the third P, profit.

This dimension pertains to fair and beneficial business practices toward labour and the community and region in which a corporation conducts its business. A TBL company conceives a reciprocal social structure in which the well being of corporate, labour and other stakeholder interests are interdependent. A triple bottom line enterprise seeks to benefit many constituencies, not exploit or endanger any group of them.

Crals and Vereeck (2004) have mentioned that "people" as one of the domain to be sustained in sustainable entrepreneurship. They assert that businesses are required to deal with issues in society, such as human rights, gender and child labour.

Crals and Vereeck (2004) define SE as the continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of workforce, their families, the local and global community as well as future generations. Clearly, apart from profitable "economic" domain, this definition has included the maintenance of quality "social" domain and is "social focused."

Friedman (1970) has argued that "the social responsibility of business is to increase its profits." Businesses, in those old days, believed that they have contributed towards social development through activities such as job creation, product development and tax payment. However, today's business world have changed their views on social responsibility of businesses, due to the development and popularization of corporate social responsibility (CSR).

Spence et al (2010) have emphasised that sustainable entrepreneurship is closer to corporate social responsibility (CSR) and environmental development, which specifies on entrepreneurs' contribution towards social and environmental surrounding.

Richomme-Huet and De Freyman (2011) have also concluded that to be considered as a sustainable entrepreneur, one has to produce "social cohesion," which refers to fulfilling individual and community needs.

Therefore, the social aspect should be given equal concentration by all sustainable entrepreneurs.

#### **Planet : (Environment Dimension)**

The second aspect, Planet, refers to the impact of the company on natural resources and the environment. Protecting the ecosystem is integral to an SE perspective in terms of becoming a major goal for a company.

Sustaining the environmental, ecological or nature dimension has now gained more attention from the businesses (Schaper, 2002; Shepherd and Patzelt, 2008 & 2011).

Researchers such as Isaak (2002), Schaper (2002), Krueger (2005), Schlange (2006), Dean and McMullen (2007), Dixon and Clifford (2007), Gibbs (2009) and Pacheco et al (2010) have used the terms "sustainable," "ecological," "environmental," and "green," inter-changeably. The environment dimension draws the attention of most researchers in sustainable entrepreneurship studies.

According to Shepherd and Patzelt (2008; 2011), nature and environment are just considered as other aspects that need to be sustained in sustainable entrepreneurship.

Some researchers(e.g. Shepherd and Patzelt, 2008 & 2011; Slaper and Hall, 2011) stress that ecosystem is the basis of environmental system because natural resources, such as air, water and energy are part of our environmental system . These resources are scarce and non-renewable; therefore, they need to be preserved.

Richomme-Huet and De Freyman (2011) have also mentioned "environmental protection" as one of the values produced by sustainable entrepreneurs.

Sustainable Entrepreneurship should endeavour to benefit the natural order as much as possible or at the least do no harm and curtail environmental impact. Sustainable enterprise

reduces its ecological footprint by, among other things, carefully managing its consumption of energy and non-renewable and reducing manufacturing waste as well as rendering waste less toxic before disposing of it in a safe and legal manner.

Dean and McMullen (2007) defined sustainable entrepreneurship as "the process of discovering, evaluating and exploiting economic opportunities that are present in market failures which detract from sustainability, including those that are environmentally relevant." Similarly, this definition also mentions about the "economic" domain, but "environmental" domain has been added and made this definition "environmental focused".

According to Tilley and Young (2009),"SE may be regarded as a process that creates enterprises that can be contributory and restorative in their interactions with human and ecological systems."

#### **Profit : (Economic Dimension)**

The third aspect, profit, is the essence of a business enterprise. When broadly defined, profit relates not just to the financial returns of the enterprise, but to the allocation of the financial returns between investment in machines, infrastructure, R&D and other uses, and the distribution of the gains between those involved in the entrepreneurial process.

The economic dimension or economic viability, according to Dixon and Clifford( 2007) and Slaper and Hall (2011) deals with the flow of money or simply financial matters.

In the original concept, within a sustainability framework, the "profit" aspect needs to be seen as the economic benefit enjoyed by the host society. It is the lasting economic impact the organization has on its economic environment.

Indeed, researchers such as Crals and Vereeck (2004), Austin et al (2006) and Hall et al (2010) have also mentioned the importance of being economically viable for the survival of businesses , including sustainable businesses.

Shepherd and Patzelt (2008; 2011), in their study, have reported "economic gains" as one of the perspectives that need to be developed in sustainable entrepreneurship.

Richomme-Huet and De Freyman (2011) have also emphasised that sustainable entrepreneurs should create values that

produce economic prosperity, together with social justice and environmental protection.

Although profit should not be treated as the sole target of sustainable entrepreneurs, being economically viable still remains as the main challenge (Dixon and Clifford, 2007).

Hence, the economic dimension should be given an equal emphasis as compared to other dimensions, such as social and ecological.

### Conclusion:

To conclude, for any entrepreneurial enterprise, focusing solely on the environmental aspect is not enough to make the business a sustainable one. Other dimensions such as economic and social should be given equal attention to be a true sustainable entrepreneur. A venture qualifies as sustainability-driven only when combines opportunities and intentions to simultaneously create value from an economic, social and ecological perspective. Many studies support that SE should not only focus on the dimension of environmental protection, but social and economic dimension should be included as proposed in TBL. Only those entrepreneurs who balance their efforts in contributing to the three areas of wealth generation can truly be called sustainability entrepreneurs. As suggested by Anderson (1998), the sustainable entrepreneurs have to proactively seek opportunities to reap higher yields to the triple bottom line rather than reacting to stakeholder threats. Since they work counter to most profit-seeking businesses, sustainable entrepreneurs use alternative methods and business practices to achieve multiple goals.

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# CRM Performance: Indexing Approach

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## A b s t r a c t

Customer Relationship Management(CRM) triggered service-encapsulation by integrating people, process and technology. Service automation reinforced the service quality dimensions and their significance to influence the behavioural outcomes of the consumers with specific reference to attitudinal loyalty and propensity to switch. This paper attempts to explore the nomological network between perceived automated service quality (PASQ), customer satisfaction (CS) and its behavioural intentions (BI) with particular reference to customers' attitudinal loyalty and their intention to switch or defect from their present service provider. The study further attempts to link PASQ, CS and BI with the introduction of a novel approach namely CRM performance indexing (CRMI). The study confirmed relationship between PASQ and CS and went on to justify CS as an antecedent to positive BIs.

**Key words:** *Service quality, automation, loyalty, switch, customer-relationship-management, nomological, bank*



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**T**he banking operation in India has undergone a total transformation with the introduction of technology. The conventional unidimensional service market trinity got converted to a three dimensional interactive model with service providers (banks), service employees (bankers) and customers interacting with each other through technology. The knowledge and skill & behaviour of service employees (internal customers) remained critical while perceiving service quality, although automated banking services ensured human disintermediation to a large extent (Khan and Mahapatra, 2009). Conventional service quality concept has also metamorphosed with operational efficiency, security and confidentiality of information stored, reliability, accuracy and speed of transactions, virtual interfaces, IVR etc. being considered as major quality dimensions. Customers are demanding new level of convenience and flexibility in addition to powerful and easy-to-use financial management tools, products and services that conventional banking operations could not offer (Hanzaee and Sadeghi, 2010). Studies conducted

by Ravi et al (2007) revealed that automated banking transactions in India are still at nascent stage with private sector banking responding and adapting earlier to these changes (Malhotra and Singh, 2007). It was only in the extreme later half of 1990s that the nationalized public sector banks in India decided to shade-off its silos-based operational legacy and upgrade themselves to the digital platform. This shift of paradigm was further stimulated by the recommendations of Rangarajan committee to initiate automation in banking operations. The IT Act of 2000 of Govt. of India provided a legal recognition to electronic banking transactions with RBI establishing a work-group to supervise and monitor issues such as security and technology, legal and control and supervision. Automated banking, for a considerable period of time, was an activity constrained to the metros and big cities in India. Phenomenal penetration of technologies and its convergence paved the path for banking service automation in semi-urban and rural areas of India also. The probable two behavioural consequences of service quality which are factor-prime for service organizations like banks, are customer loyalty and propensity to switch because both these phenomenon are linked to profitability. With the competition becoming fierce, customer loyalty and favourable behavioural consequences have emerged as two potential defensive tools for the banks. The recent adoption of Customer Relationship Management (CRM) as a business philosophy saw the banks developing better proactive strategies to ensure better personalization and customization of service delivery.

This paper attempts to explore the probable impacts of automated service quality on customer satisfaction and subsequent behavioural intentions of customers in a CRM dominated environment of a bank. Further to this the paper attempts to index CRM performance and assess its probable impact on the link between perceived automated service quality (PASQ), customer satisfaction (CS) and behavioural intentions (BI). The rationale behind choosing SBI has been the completion of their decade long modernization and up-scaling of their operation from a legacy dominated silos-based customer transaction to an electronic banking format and being the largest nationalized bank in India, its geographical penetration and bank branch networking (availability of services). The organisation of this study following the 'Introduction' has been done as: review of literature, research model and formulation of hypotheses, methodology, data analysis and interpretation and conclusion with limitations of the study and future research prospect.

## 2. Review of literature

Over the last three decades or so service quality has emerged as one of the most critical areas to focus upon for the academic

researchers, managers and practitioners as a result of its phenomenal impact on customer satisfaction, customer retention, lowering of costs, profitability and overall sustainable business performance (Peng and Wang, 2006; Leonard and Sasser, 1982; Gammie, 1992; Hallowell, 1996; Chang and Chen, 1998; Lasser et al, 2000; Silvestro and Cross, 2000, Sureshchander et al, 2002, Guru, 2003 etc.). Researchers, over the years, explored and conducted a number of empirical works to understand the nature of service quality, its dimensions and dynamics and probable ways to enhance the perceived service quality (Cronin and Taylor, 1992, 1994; Rust and Zahorick, 1993; Avkiran, 1994, Kearns and Nadler, 1992; Parasuraman et al, 1985, 1988, Julian and Ramaseshan, 1994, Llosa et al, 1998, Crosby and Stephens, 1987). The study of service quality was pioneered by Parasuraman, Zeithaml and Berry (PZB), who developed the gaps framework in 1985 and its related SERVQUAL instrument (Parasuraman, Zeithaml and Berry 1985, 1988, 1991) whereby five dimensions of service quality were proposed namely tangibles, reliability, responsiveness, assurance and empathy. The transition of service delivery system from employee-customer interaction to employee-technology and technology-customer interactions included a new dimension in service delivery mechanism and vis-à-vis perceived service quality (Alkibsi and Lind, 2011). Henderson et al (2003) was of the opinion that automated service provides organisation to introduce new models for service design and development. Ruyter et al (2001) defined automated service as interactive, content-centered and internet-based customer service driven by the customer and integrated with the related organisation customer support process and technologies with the goal of strengthening the customer-service provider relationship. Parasuraman et al (2005) viewed automated services as web-based services while Buckley (2003) conceptualized automated services as electronic provision of services to a customer. Automated service quality has been identified by Santos (2003) as consumers' evaluation of e-service quality in a virtual market place.

Introduction of automated banking services triggered changes in consumer behaviour, consumer perception towards banking service quality, innovation in service delivery system, channel integration, communication and relationship marketing which received adequate emphasis on behalf of the academic researchers (Laforet and Li, 2005; Gerard and Cunningham, 2003; Hernandez and Mazzon, 2007; Wolfinbarger and Gilly, 2002; Yang et al, 2004, Mukherjee and Nath, 2003). Banking, which was conventionally a high contact service, the disintermediation with the introduction on technology, was considered to be critical towards establishing quality

perception in the minds of the customers (Broderick and Vachirapornpuk, 2002). Dhabolkar ((1994) argued that the automated channels made customer participation in service delivery process more intense. A number of researchers considered ATM, internet banking, telephone/mobile banking as the principal automated service delivery channels (Dabholkar, 1994; Meuter et al, 2000; Szymanski and Hsieh, 2006; Radecki et al, 1997). Quite a few researchers explored automated service quality dimensions and subsequently

developed models to assess service quality such as SITEQUAL (Yu and Donthu, 2001), WEBQUAL (Loiacono, Watson and Goodhue, 2002), eTailQ (Wolfinbarger and Gilly, 2002), E-SERVQUAL (Zeithaml, Parasuraman and Malhotra, 2005) SSTQUAL (Lin and Hsieh, 2006). Al Hawari, Hartley and Ward (2005) developed the concept of Automated Service Quality Index (ASQI) by highlighting five factors – ATM service quality, telephone banking, internet banking services, core service quality and customer perception of service quality.

**Table-1 summarizes the review of the dimensions of automated service quality.**

Contributor	Year	Dimensions	Context
Dabholkar	1996	website design, reliability, delivery, ease-of-use, enjoyment and control	e-services
Zeithaml et al	2000	efficiency, reliability, fulfillment, privacy, responsiveness, compensation and contact	Online retail services
Yoo and Donthu	2001	ease of use, aesthetic design, processing speed and interactive responsiveness	Online retail services
Cox and Dale	2001	website appearance, communication, accessibility, credibility, understanding and availability	Online retail services
Jun and Cai	2001	website design, information, ease of use, access, courtesy, responsiveness and reliability	Online banking services
Yang	2001	website design, security and information	Online retail services
Wolfinbarger and Gilly	2002	website design, reliability, security and customer service	Online shopping sites
Zeithaml et al	2002	Security, communication, reliability, responsiveness and delivery	e-services
Madu and Madu	2002	Performance, features, structure, aesthetics, reliability, serviceability, security and system integrity, trust, responsiveness, service differentiation and customization, web-store police, reputation, assurance and empathy	e-services
Loiacono et al	2002	informational-fit-to-task, interaction, trust, response-time, design, intuitiveness, visual appeal, innovativeness, flow-emotional appeal, integrated business communication, business processes and substitutability	Online retail services
Yang and Jun	2002	Website design, security, reliability, responsiveness, accessibility and customization	Online retail services
Surjadaja et al	2003	Security, interaction, responsiveness, information, reliability, delivery and customization	e-services
Yang et al	2003	Responsiveness, reliability, credibility, ease-of-use, convenience, communication, access, competence, courtesy, personalization, collaboration, security and aesthetics	Online retail services
Yang et al	2004	Responsiveness, reliability, ease-of-use, competence, security and product portfolio	Online shopping sites
Field et al	2004	Website design, reliability, security and customer service	e-services
Kim and Stoel	2004	Web appearance, entertainment, information, transaction capability, responsiveness and trust	Online retail services
Yang and Fang	2004	Responsiveness, reliability, credibility, competence, access, courtesy, communication, information, responsiveness and website design	e-services
Gounaris et al	2005	Website design, information, trust, responsiveness and reputation	Online retail services
Parasuraman et al	2005	Efficiency, availability, fulfillment, privacy, responsiveness, compensation and contact	e-services
Lee and Lin	2005	Website design, reliability, responsiveness, trust and personalization	Online retail services
Kim et al	2006	Efficiency, system availability, fulfillment, privacy, responsiveness, compensation, contact and graphic style	
Fassnacht and Koesse	2006	Graphic quality, layout, attractiveness of selection, information, ease of use, technical quality, reliability, functional benefit and emotional benefit	e-services
Cristobal et al	2007	Website design, customer service, assurance and order management	e-services
Sohn and Tadisina	2008	Trust, speed of delivery, reliability, ease-of-use, customized communication, website content and functionality	Online financial services
Li, Liu and Suomi	2009	Website design, reliability, responsiveness, security, fulfillment, personalization, information and empathy	e-services

Superior service quality leads to favorable behavioral intentions, leading to retention and subsequent generation of revenue, increased spending, payment of price premiums, and generation of referred customers (Zeithaml et al, 1996). Excellent service is a profit strategy because the results include new customers, increased business with existing customers, fewer lost customers, more cushioning from price competition and fewer mistakes requiring the services to be repeated (Berry et al, 1994). Listening to the customer is a part of providing excellent service. Inferior service quality leads to unfavourable behavioural intentions which lead to customer defection from the organization which leads to decreased spending, lost customers, and increasing costs associated with attracting new customers (Zeithaml et al, 1996). Customer switching behaviour can damage market share and profitability. Switching can cost an organization the customer's future revenue stream (Keaveney, 1995). Evidence that customer loyalty makes an organization more profitable makes it imperative that complaints and other unfavourable behavioral intentions are handled effectively to ensure the stability of these relationships (Tax & Brown 1998a). Managers of service firms should know that some customers would switch services even when they are satisfied with a former provider (Keaveney, 1995). Zeithaml et al (1996) highlighted the behavioural consequences of service quality and proposed a comprehensive, multi-dimensional framework of customer behavioural intentions, nomenclated as Behavioural Intentions Battery (BIB), to be used in the service industry. The framework consists of 13-items across five dimensions namely loyalty to organisation, propensity to switch, willingness to pay more, external responses to a problem and internal responses to a problem. Yang and Fang (2004) examined the influence of dimensional differences on online service satisfaction and dissatisfaction. Yen (2005) was of the opinion that technology readiness is one of the major determinants of customer satisfaction for online services.

The automation of bank's operational aspects was not restricted to technological upgradation alone as it paved way for a novel business philosophy – Customer Relationship Management (CRM). Customer Relationship Management (CRM), defined by Nguyen et al (2007), is an information system that enables organizations to track customers' interactions with their firms and allows employees to extract customer-based information namely history of sales, unresolved problems, payment records, service records etc. Customer Relationship Management (CRM) has been argued to replace the traditional 4Ps of marketing (product, price,

place and promotion) concept as a dominant logic in marketing process (Guraqu, 2003) and refers to all business activities directed towards initiating, establishing, maintaining, and developing successful long-term relational exchanges (Heide, 1994; Reinartz & Kumar, 2003). Gradual polarization of marketing process towards a relationship base was found to be dyadically more effective in establishing mutually profit-benefit transactions between sellers and buyers respectively. The scholastic debate sprung a number of views about the domain of CRM – some researchers view CRM as a mere software based application, therefore emphasizing on the process part; while others consider CRM as a philosophy which aims to translate customer intimacy into profit (Yueh et al, 2010, Soon, 2007; Nguyen et al, 2007 & Eric et al, 2006). Subsequent research works have highlighted CRM as an integration of people, process and technology, targeted to bring firms closer to customers. Empirical research works pointed out, time and again, towards the mutual and symbiotic benefits both for the sellers and customers (Dekimpe, Steenkamp, Mellens & Abeele, 1997). In a study Paul Gray and Jongbok Byun (2001) viewed CRM as a continuous flow of corporate changes in culture and processes that combines three focal areas: (i) Customer (ii) Relationship and (iii) Management. With this introduction of hyper-customized products and services, particularly in the cross-selling and up-selling domains of a financial service organization, the customer needs and desires have undergone a sea change. One of the results of CRM is the promotion of customer loyalty (Evans & Laskin, 1994), which is considered to be a relational phenomenon (Chow & Holden, 1997; Jacoby & Kyner, 1973; Sheth & Parvatiyar, 1995; cited by Macintosh & Lockshin, 1997). The benefits of customer loyalty to a provider of either services or products are numerous, and thus organizations are eager to secure as significant a loyal customer base as possible (Gefen, 2002; Reinartz & Kumar, 2003; Rowley & Dawes, 2000).

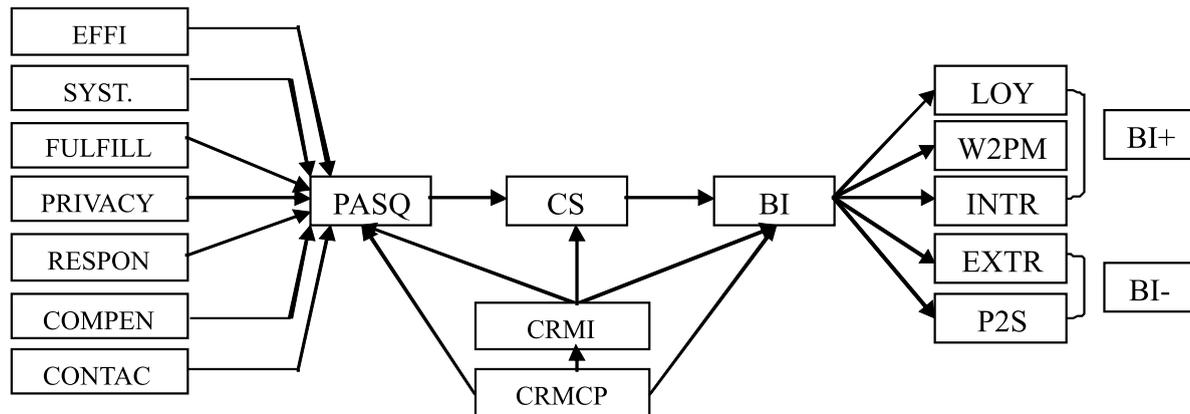
Review of literature revealed that while academic research works were carried out substantially to identify the dimensions of automated service quality, not much of emphasis was given to explore the probable linkage between perceived automated service quality and behavioural consequences of customers in a CRM dominated business environment with customer satisfaction as an intermediary variable. Further to this not much academic support has been fetched towards indexing CRM activities based on the performance of its components namely people, process and technologies and their subsequent variables.

### 3. Research model and formulation of hypotheses

Based on the review of literature this paper attempts empirically to explore possible linkages between perceived

automated service quality (PASQ) and behavioural intentions (BI) for bank customers in a Customer Relationship Management (CRM) environment. The proposed research model is depicted in Fig.1 below:

Fig.1: The research model



Accordingly it is hypothesized that:

$H_1$  : Customer satisfaction (CS) is influenced by perceived automated service quality (PASQ).

$H_{01}$  : Customer satisfaction (CS) is uninfluenced by perceived automated service quality (PASQ).

$H_2$ : Behavioural intentions (BI) are dependent on customer satisfaction (CS).

$H_{02}$ : Behavioural intentions (BI) are independent on customer satisfaction (CS).

$H_3$ : Performance of CRM components (CRMCP) influence CRM index (CRMI).

$H_{03}$ : Performance of CRM components (CRMCP) does not influence CRM index (CRMI).

$H_4$ : Aggregate perceived automated service quality ( $\Sigma$ PASQ) is influenced by CRM index (CRMI).

$H_{04}$ : Aggregate perceived automated service quality ( $\Sigma$ PASQ) is uninfluenced by CRM index (CRMI).

$H_5$ : Customer satisfaction (CS) is dependent on CRM index (CRMI).

$H_{05}$ : Customer satisfaction (CS) is independent of CRM index (CRMI).

$H_6$ : Behavioural intentions are dependent on CRM index (CRMI).

$H_{06}$ : Behavioural intentions are independent of CRM index (CRMI).

### 4. Methodology

The objectives of this study were (a) to investigate the impact of perceived automated service quality (PASQ) on customer satisfaction (CS) and subsequent behavioural intentions (BI) of the same, (b) to assess whether the performance of CRM components are instrumental in influencing CRM index (CRMI), (c) to understand whether PASQ is influenced by CRMI, (d) to examine whether CS and BI can be effectively forecasted on the basis of CRMI and (e) to suggest a model involving all the variables used in the study and examine their direct and indirect effects. The study was conducted in two phases. To carry out this study, State Bank of India (SBI), the largest nationalized public sector bank in India was selected primarily because of its intensive branch network (availability of services), its upgradation to digitized platform towards service delivery and its adoption of CRM philosophy. A structured questionnaire was developed to obtain the primary data. The questionnaire had four sections. Section-I asked questions about customers' perception of automated service quality, section-II dealt with placing questions with regard to behavioural intentions of the customers, section-III targeted customer response in context with CRM components and their performance and section-IV attempted to collect the demographic profile of the customers. E-SERVQUAL scale

developed by Zeithaml, Parasuraman and Malhotra (2005) was used to generate response about customers' perception of automated service quality across both the core and recovery dimensions. To obtain response with regard to behavioural intentions of customers as an output to customer satisfaction, the Behavioural Intention Battery (BIB) developed by Zeithaml et al (1996) was used. The respondents were asked to rate the statements related to automated banking service channels over a 7 point Likert scale (Alkibisi and Lind, 2011). The study was carried out in two phases. Phase-I involved a pilot study to refine the test instrument with rectification of question ambiguity, refinement of research protocol and confirmation of scale reliability was given special emphasis (Teijlingen and Hundley, 2001). 20 respondents representing bank customers, bank employees and academic were included to conduct the pilot study. FGI was administered. Cronbach's  $\alpha$  coefficient ( $>0.7$ ) established scale reliability (Nunnally and Bernstein, 1994). The second phase of the study was conducted by using a structured questionnaire which was distributed amongst 2000 SBI bank-customers at Asansol, Durgapur, Bolpur and Santiniketan, West Bengal, randomly selected with every 5<sup>th</sup> customer leaving the bank premise was selected as sample. 'Usage-of-automated-banking-service' was used as critical-fit criteria while selecting samples. A total number of 1560 usable responses were generated with a response rate of 78.00%. Exploratory factor analysis (EFA) was employed using principal axis factoring procedure with orthogonal rotation through VARIMAX process with an objective to understand the factor loadings/cross loadings across components. Cronbach's  $\alpha$  was obtained to test the reliability of the data, Kaiser-Meyer-Olkin (KMO) was done for sample adequacy and Barlett's sphericity test was conducted. Structural equation modeling approach using Lisrel 8.80 was used to test the research model.

#### 4.1 Constructs development of Customer Relationship Management Index (CRMI)

Based on a novel approach by Baksi and Parida (2012) to develop a Multi-Channel Service Quality Index (MCSQI), a similar approach can be used to develop a Customer Relationship Management Index (CRMI) based on S-shaped logistic model:

$$y = \frac{m}{1 + e^{a+bt}}$$

where  $y$  is the benefit of the technology application at time  $t$ ,  $m$  is the upper bound on the benefits of the application, and  $a$  and  $b$  are constants that determine the shape of the curve. Similar kind of logic can be used in computing Customer Relationship Management Index (CRMI) whereby it is assumed that CRMI will improve with the improved performance of CRM components (CRMCP). The impact of CRMCP performance at time ' $t$ ' is proportional to the CRMI gained at time  $t-1$  ( $CRMI_{t-1}$ ) relative to maximum possible gains from the CRMCP performance (i.e. 1) and the remaining CRMI is yet to be gained (i.e.  $1 - CRMI_{t-1}$ ). It can be represented as (over time  $t$ ):

$$\frac{dCRMI}{dt} = -CRMCP(1 - CRMI_{t-1}) \quad \text{--- 1}$$

where CRMCP is a term denoting efficiency of performance in delivering services for a service provider. Solving equation-1 for CRMI:

$$CRMI = \frac{1}{1 + e^{a+CRMCP_t}} \quad \text{--- 2}$$

Equation-2 represents a S-shaped logistic model where 1 is the upper-bound on the CRMI from the CRMCP performance. It is assumed that the constant ' $a$ ' is zero because each service provider is supposed to initiate CRM induced services with a negligible CRMI. Therefore equation for CRMI is developed as:

$$CRMI = \frac{1}{1 + e^{CRMCP_t}} \quad \text{--- 3}$$

The term CRMCP is a function of the relative weight of the eigenvalue (RWE) of each CRM components multiplied by the average factor value (AVF) of the corresponding CRM component.

$$CRMCP = RWE_{CRMCP1} AVF_{CRMCP1} +$$

$$RWE_{CRMCP2} AVF_{CRMCP2} + RWE_{CRMCP3} AVF_{CRMCP3}$$

Where, CRMCP1 = People dimension

CRMCP2 = Process dimension

CRMCP3 = Technology dimension

## 5. Data analysis and interpretation

The demographic data obtained were tabulated in Table-2:

**Table-2: Demographic data of the respondents**

Demographic Variables	Factors	Frequency	%
<b>Gender</b>	Male	1098	70.38%
	Female	462	29.62%
<b>Age</b>	≤ 21 years	48	3.07%
	22-32 years	446	28.58%
	33-43 years	629	40.32%
	44-54 years	296	18.97%
	≥ 55 years	141	9.06%
<b>Income</b>	≤ Rs. 14999.00	129	8.26%
	Rs. 15000-Rs. 24999.00	821	52.62%
	Rs. 25000-Rs. 44999.00	427	27.37%
	≥ Rs. 45000.00	183	11.75%
<b>Occupation</b>	Service [govt./prv]	897	57.50%
	Self employed	376	24.10%
	Professionals	109	6.98%
	Student	48	3.07%
	Housewives	77	4.93%
	Others [rettd., VRS etc]	53	3.42%
<b>Educational qualification</b>	High school	7	0.45%
	Graduate	1119	71.73%
	Postgraduate	397	25.44%
	Doctorate & others (CA, fellow etc)	37	2.38%

Table-3 represents the rotated component matrix following the exploratory factor analysis. The Cronbach's  $\alpha$  value for all the measures (except three items of core E-SQUAL namely 'the site enables me to get on to it quickly,' 'the site makes items available for delivery within a suitable time frame,' 'it has in-stock the items the company claims to have' and for the five items of recovery E-SQUAL namely 'the site compensates me for problems it creates,' 'it compensates me

when what I ordered does not arrive on time,' 'it picks up items I want to return from my home or business,' 'the site offers a meaningful guarantee' and 'it offers the ability to speak to alive person if there is a problem') exceeded the minimum standard of .7 (Nunnally and Bernstein, 1994) suggesting and confirming about the reliability of the measures. The items which were loaded with a lesser value to .7 were subsequently deleted.

Variable	Variable statement	Factors					
		F1	F2	F3	F4	F5	F6
V1	SBI's websites makes it easy to search what is required	.879					
V2	Navigation is smooth in the SBI's websites	.802					
V3	Page download is fast	.868					
V4	Transaction takes place in real-time and does not freeze before completion	.791					
V5	Information are well displayed in Banks' websites	.841					
V6	SBI's web-services are simple to use	.821					
V7	SBI's websites are always available for transaction		0.793				
V8	SBI's websites launch and run right away		0.809				
V9	SBI's website does not crash		0.821				
V10	Pages in SBI's websites do not freeze while transaction is on		0.798				
V11	SBI's website deliver services when promised			0.809			
V12	SBI's websites promptly delivers services			0.837			
V13	SBI's websites are truthful about their offerings			0.799			
V14	SBI website's make accurate promises about transactions			0.824			
V15	SBI's provides financial security and confidentiality				.902		
V16	Web-interface is secured with virtual keyboard set-up for logging in				.876		
V17	SBI's websites can be trusted against misuse of information of transaction details				.891		
V18	SBI's websites can be trusted against mishandling of personal information stored				.899		
V19	SBI's websites provide convenient options for cancelling transactions					.818	
V20	SBI's websites deals well with cancelation of transactions					.821	
V21	SBI's websites guide me in case of transactions not being processed				.791		
V22	SBI's web-service takes care of problems promptly					.801	
V23	SBI's web-service has customer representative who shows willingness to support/help						.811
V24	SBI's websites provide a valid telephone number to contact the bank when required						.721
V25	SBI's website offers the facility to speak live to an authorized service if there is a problem						.781
	Cronbach's $\alpha$	0.951	0.903	0.921	0.929	0.943	0.926
KMO	measure for sampling adequacy	0.891					
	Initial eigen values	5.179	4.502	3.332	3.001	2.321	2.002
	% of variance	19.882	13.891	10.029	9.881	8.021	7.703
	Cumulative %	19.882	33.773	43.802	53.683	61.704	69.407

The 33 variables (including both core and recovery items of E-SERVQUAL) were reduced to 25 variables. Variables having factor loading scores of <0.7 were discarded. The variables

were grouped into six dimensions according to the factor loading scores and were nomenclated as in Table-4.

**Table 4: Dimensions**

Variables	Dimension	Items
V1-V6	Efficiency	Core items
V7-V10	Web-System	
V11-V14	Commitment	
V15-V18	Security	
V19-V22	Responsiveness	Recovery items
V23-V25	Contact	

To test hypothesis 1, the customer satisfaction score was obtained for an individual by calculating the mean of response over the items (4) namely ‘satisfaction with respect to SBI’s website design,’ ‘satisfaction with regard to ease of navigation,’ ‘satisfaction with regard to ease of use,’ and ‘satisfaction

with regard to privacy and accuracy of transaction.’ The degree of satisfaction was generated over a 7 point Likert scale. Correlation (Table-5) results exhibited a strong and positive relationship between perceived automated service quality (PASQ) and customer satisfaction (CS):  $r=.494^{**}$ ,  $p<.001$ .

**Table-5: Bivariate correlation between perceived automated service quality (PASQ) and customer satisfaction (CS)**

		CS	PASQ
CS	Pearson Correlation	1.000	.494**
	Sig. (2-tailed)		.000
	N	1560.000	1560
PASQ	Pearson Correlation	.494**	1.000
	Sig. (2-tailed)	.000	
	N	1560	1560.000

\*\* Correlation significant at 0.01 level (2-tailed)

To assess the strength of association between the variables and to understand the predictive capability of the independent variable (PASQ), to predict the dependent variable (CS), simple regression analysis was used. The results of the regression analysis have been presented in Table-6. The model summary revealed that the  $R^2$  and adjusted  $R^2$  values are .155 and .153 respectively which indicate that perceived automated service quality measures 15.50% of the variation in customer

satisfaction (dependent variable). The results of ANOVA established that the variation showed by the service quality was significant at 1% level ( $f=103.031$ ,  $p<.001$ ). The standardised regression coefficient results confirmed that the predictive capacity of perceived automated service quality (PASQ) to predict the degree of customer satisfaction has statistical significance and is positively correlated ( $\hat{\alpha}=.516$ ,  $t=10.158$ ,  $p<.001$ ). Hypothesis-1 has been accepted.

**Table-6: Regression results**

Model summary		ANOVA		Regression coefficients		
$R^2$	Adjusted $R^2$	F	Sig.	$\beta$	t	Sig.
.155	.153	103.031	.000	.516	10.158	.000

a. Dependent variable: Customer satisfaction (CS)

b. Predictor: Perceived automated service quality (PASQ)

The Behavioural Intention Battery (Zeithaml et al, 1996) was used to obtain the behavioural intention scores of the respondents across five dimensions (13 items) of the same namely loyalty, will-to-pay-more, internal response (positive behavioural intention indicators) and propensity-to-switch and external response (negative behavioural intention indicators). Correlation matrix (Table-7) revealed that customer

satisfaction (CS) exhibited a strong and positive relationship with loyalty ( $r=.491^{**}$ ,  $p<.001$ ), will-to-pay-more ( $r=.321^{**}$ ,  $p<.001$ ) and internal response ( $r=.354^{**}$ ,  $p<.001$ ) while CS revealed a negative relationship with propensity-to-switch ( $r=-.108^{*}$ ,  $p<.005$ ) and external response ( $r=-.238^{**}$ ,  $p<.001$ ) indicating that satisfied customers with regard to their bank (SBI) tend to exhibit positive behavioural intentions.

**Table-7: Correlation matrix between behavioural intention (BI) dimensions and customer satisfaction (CS)**

		CS	Loyalty	Will2pay more	Propensity 2switch	External response	Internal response
CS	Pearson Correlation	1.000	.491**	.321**	-.108*	-.238**	.354**
	Sig. (2-tailed)		.000	.000	.003	.000	.000
	N	1560	1560	1560	1560	1560	1560
Loyalty	Pearson Correlation	.491**	1.000	-.045	.079	.020	.744**
	Sig. (2-tailed)	.000		.304	.069	.653	.000
	N	1560	1560	1560	1560	1560	1560
Will2paymore	Pearson Correlation	.321**	-.045	1.000	-.111*	.062	.010
	Sig. (2-tailed)	.000	.304		.011	.158	.812
	N	1560	1560	1560	1560	1560	1560
Propensity2switch	Pearson Correlation	-.108*	.079	-.111*	1.000	-.105*	.109*
	Sig. (2-tailed)	.003	.069	.011		.016	.012
	N	1560	1560	1560	1560	1560	1560
Externalresponse	Pearson Correlation	-.238**	.020	.062	-.105*	1.000	.057
	Sig. (2-tailed)	.000	.653	.158	.016		.188
	N	1560	1560	1560	1560	1560	1560
Internalresponse	Pearson Correlation	.354**	.744**	.010	.109*	.057	1.000
	Sig. (2-tailed)	.000	.000	.812	.012	.188	
	N	1560	1560	1560	1560	1560	1560

\*\*Correlation is significant at 0.01 level (2-tailed), \*Correlation is significant at 0.05 level (2-tailed)

The Pearson 'r' correlation coefficient suggested that satisfied customers of State Bank of India are likely to remain associate with the bank in future, on the basis of significant relationship with 'loyalty' and 'willing to pay more' dimensions of BIB. Further to this the respondents demonstrated confidence in the bankers (internal response) when faced with a problem. Hypothesis-2 was accepted. CRM requires the proper integration of its components namely

people, process and technology to ensure a successful adoption and link-up with the business process. These are the three key areas that touch the customer. The response of performance of CRM components were taken on these three touch-points, the CRM-components: People, Process & Technology, their dimensions and their corresponding variables (Table-8). A 7 point Likert scale was used to obtain the response from the respondents about the performance of the three CRM components.

**Table-8: CRM components**

Component	Dimensions	Variables
People	Empathy	1. Individual attention to customers
		2. Understands specific need of customers
		3. Employees have customers' best interest at heart
	Responsiveness	4. Employees instill confidence in customers
		5. Employees deal with public situations carefully
Process	Single Window (SWO) Service	6. Ease of in-premise transaction
		7. Assorted service range
	Know Your Customer (KYC) policy	8. Comprehensive information about customer
		9. Better segmentation of customers
		10. Better understanding of customers' specific need
	Multi-Channel Integration (MCI)	11. Seamless and disintermediated delivery process
12. Access to multiple channels for transaction		
Technology	Unified integrator	13. Core Banking platform (CBS)
	Mobility enhancement	14. Mobile computing/Mobile commerce
	Information Communication Technology (ICT)	15. Internet
	Automated ancillary process	16. Automated Vending Machines (in-premise)
	Security	17. Digital vigilance system (in-premise)

Factor analysis validated the measures used for Customer Relationship Management Index (CRMI) namely its three components, people, process and technology. Exploratory factor analysis was deployed using orthogonal rotation. The

reliability index was obtained as  $>0.70$ . The convergent validity was found to be  $>0.60$  for all the items. Factor loading  $<0.500$  were discarded. Table-9 displayed the results of factor analysis.

**Table-9: Factor structure of variables (N=712)**

Factor	Eigen values	Cronbach's $\alpha$	Items	Factor loadings	Convergent validity
People	4.09	0.91	1. Individual attention to customers	0.811	0.862
			2. Understands specific needs of customers	0.802	0.823
			3. Employees have customers' best interest at heart	0.807	0.816
			4. Employees instill confidence in customers	0.786	0.791
			5. Employees deal with public situation carefully	0.723	0.732
Process	4.21	0.89	6. Ease of in-premise transactions	0.818	0.823
			7. Assorted service range	0.809	0.811
			8. Comprehensive information about customers	0.789	0.797
			9. Better segmentation of customers	0.865	0.875
			10. Better understanding of customers' demand	0.843	0.857
			11. Seamless delivery process	0.761	0.772
			12. More than one channel to enter into transaction	0.707	0.714
Technology	4.55	0.94	13. CBS efficiency	0.879	0.891
			14. Mobile-technology/mobile commerce applications	0.851	0.872
			15. Internet enabled banking efficiency	0.836	0.844
			16. Auto-vending machine (in-premise) facility available	0.818	0.829
			17. Digital surveillance (in-premise) facility available	0.841	0.855

Table-10 and Table-11 displayed the relative weight of eigenvalue (RWE) and average factor value (AFV) respectively, which were considered for calculating the CRMI.

**Table-10: Relative weight of eigenvalue (RWE)**

Factor	Eigenvalue	RWE
People	4.09	0.31
Process	4.21	0.32
Technology	4.55	0.37
<b>Total</b>	<b>12.85</b>	<b>1.00</b>

**Table-11: Average factor value (AFV)**

Organization	People (CRMCP1)	Process (CRMCP2)	Technology (CRMCP3)
SBI	0.49	0.57	0.75

Calculating for Customer Relationship Management Components' performance (CRMCP) as per the following equation, we get

$$CRMI = \frac{1}{1 + e^{0.6510}}$$

$$CRMI = 0.34$$

$$CRMCP = RWE_{CRMCP1}AVF_{CRMCP1} + RWE_{CRMCP2}AVF_{CRMCP2} + RWE_{CRMCP3}AVF_{CRMCP3}$$

$$\begin{aligned} CRMCP &= (0.31 * 0.49) + (0.32*0.57) + (0.37 * 0.75) \\ &= 0.1911 + 0.1824 + 0.2775 \\ &= 0.6510 \end{aligned}$$

Therefore, calculating for CRMI as per equation-3:

The CRM component performance was obtained for each component by calculating the mean value of response for each individual and an aggregate value was calculated taking all the three components taken together. Bivariate correlation was applied to understand the relationship between the CRM component performance (CRMCP) and the CRM index (CRMI). The results were displayed in Table-12. The correlation was found to be significant (r=.267\*\*, p<.001)

**Table-12: Bivariate correlation between CRM component performance (CRMCP) and CRM index (CRMI)**

		CRMI	CRMCP
CRMI	Pearson Correlation	1.000	.267**
	Sig. (2-tailed)		.000
	N	1560.000	1560
CRMCP	Pearson Correlation	.267**	1.000
	Sig. (2-tailed)	.000	
	N	1560.000	1560

\*\* Correlation significant at 0.01 level (2-tailed)

Simple regression analysis was performed to understand the predictive capacity of CRM component performance (CRMCP) towards predicting CRM index (CRMI). The results of regression analysis were displayed in Table-13.

The R<sup>2</sup> and adjusted R<sup>2</sup> were found to be .484 and .483 respectively confirming that CRM component performance (CRMCP) measures 48.40% of the variation in CRM index (dependent variable). ANOVA established that the variation

showed by the CRMCP was significant at 1% level ( $f=17.634$ ,  $p<.001$ ). The standardised regression coefficient results confirmed that the predictive capacity of CRM component performance (CRMCP) to predict the enhancement of CRM index (CRMI) has statistical significance and is positively correlated ( $\beta=.513$ ,  $t=6.763$ ,  $p<.001$ ).

The regression equation can be formed as:

$Y = ax + b$ , where Y stands for the dependent variable (CRMI), 'a' stands for the slope, 'x' stands for the predictor (CRMCP) and 'b', the constant. Replacing 'a' for slope value (.139) and 'b' for constant value (2.566) from the regression results, the predictive equation takes the following shape:  $Y \text{ (CRMI)} = .139 * x \text{ (CRMCP)} + b \text{ (2.566)}$ . Hypothesis-3 has been accepted.

**Table-13: Regression results**

Model Summary		ANOVA		Unstandardized regression coeff.		Standardised regression coeff.		
R <sup>2</sup>	AdjuR <sup>2</sup>	f	Sig.	B	Std. error	β	t	Sig.
.484	.483	17.634	.000	2.566	.176	.513	6.763	.000

To explore the possible linkage between performance of CRM components and aggregate perceived automated service quality (ΣPASQ) correlation analysis was performed between CRM-index (CRMI) and (ΣPASQ) ( $r=.559^{**}$ ,  $p<.001$ ). Table-14

revealed that aggregate perceived automated service quality is significantly and positively correlated with CRM-index suggesting that an improvement in CRM-components' efficiency performance will enhance the perceived automated service quality of customers.

**Table-14: Correlation between ΣPASQ and CRMI**

		ΣPASQ	CRMI
ΣPASQ	Pearson Correlation	1.000	.559**
	Sig. (2-tailed)		.000
	N	1560	1560
CRMI	Pearson Correlation	.559**	1.000
	Sig. (2-tailed)	.000	
	N	1560	1560

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

Regression analysis (Table-15) was performed to examine the predictability and strength of association between CRMI (independent variable) and ΣPASQ (dependent variable). The model summary showed R<sup>2</sup> and adjusted R<sup>2</sup> to be as .580 and .578 indicating that CRM index (CRMI) measures 58.00% of the variation in aggregate perceived automated service quality (ΣPASQ-dependent variable) which is considered to be significant enough for predictability of the model. ANOVA

established that the variation showed by the perceived automated service quality was significant at 1% level ( $f=467.389$ ,  $p<.001$ ). Regression coefficients confirmed a strong association between CRMI and ΣPASQ ( $\beta=.549$ ,  $t=29.541$ ,  $p<.001$ ) and that CRMI could be an effective predictor to ΣPASQ thereby suggesting dependency of ΣPASQ on CRMI. Hypothesis-4 was accepted.

**Table-15: Summary of regression results**

Model Summary			ANOVA		Regression coefficients		
R <sup>2</sup>	R <sup>2</sup>	AdjuR <sup>2</sup>	f	Sig.	β	t	Sig.
.762	.580	.578	467.389	.000	.549	29.541	.000

a. Dependent variable: Aggregate perceived service quality (ΣPASQ)

b. Predictor: CRM index (CRMI)

To test Hypothesis-5, bivariate correlation was deployed to assess the relationship between customer satisfaction (CS-dependent variable) and CRM index (CRMI-independent variable). The Pearson coefficient (r) was obtained and displayed in Table-16. The result ( $r=.421^{**}$ ,  $p<.001$ ) revealed

a strong and positive correlation between customer satisfaction (CS) and CRM-index (CRMI) suggesting that higher the CRMI, higher will be the customer satisfaction. Hypothesis-5 was accepted.

**Table-16: Correlation between Customer satisfaction (CS) and CRM index (CRMI)**

**Table-12: Bivariate correlation between CRM component performance (CRMCP) and CRM index (CRMI)**

		CS	CRMCP
CS	Pearson Correlation	1.000	.267**
	Pearson Correlation	1.000	.421**
	Sig. (2-tailed)		.000
	N	1560	1560
CRMI	Pearson Correlation	.421**	1.000
	Sig. (2-tailed)	.000	
	N	1560	1560

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

To test Hypothesis-6, multiple correlation was used to understand the relationship between CRM index (CRMI) and the dimensions of behavioural intentions. The results were displayed in Table-17. It was revealed that CRMI shared a strong and positive correlation with loyalty ( $r=.683^{**}$ ,

$p<.001$ ), will-to-pay-more ( $r=.274^{**}$ ,  $p<.001$ ) and moderately strong relationship with internal response ( $r=.095^*$ ,  $p<.005$ ), while CRMI revealed a significant negative correlation with propensity-to-switch ( $r=-.196^{**}$ ,  $p<.001$ ) suggesting an inverse relationship with the same.

		CMRI	Loyalty	Propensity 2switch	Will to pay more	External response	Internal response
CRMI	Pearson Correlation	1.000	.683**	-.196**	.274**	-.069	.095*
	Sig. (2-tailed)		.000	.000	.000	.065	.011
	N	1560.000	1560	1560	1560	1560	1560
Loyalty	Pearson Correlation	.683**	1.000	-.012	.256**	-.127**	.349**
	Sig. (2-tailed)	.000		.743	.000	.001	.000
	N	1560	1560.000	1560	1560	1560	1560
Propensity to switch	Pearson Correlation	-.196**	-.012	1.000	-.010	-.061	.178**
	Sig. (2-tailed)	.000	.743		.785	.105	.000
	N	1560	1560	1560.000	1560	1560	1560
Will-to-pay more	Pearson Correlation	.274**	.256**	-.010	1.000	-.248**	.253**
	Sig. (2-tailed)	.000	.000	.785		.000	.000
	N	1560	1560	1560	1560.000	1560	1560
External response	Pearson Correlation	-.069	-.127**	-.061	-.248**	1.000	.125**
	Sig. (2-tailed)	.065	.001	.105	.000		.001
	N	712	712	712	712	1560.000	7
Internal response	Pearson Correlation	.095*	.349**	.178**	.253**	.125**	1.000
	Sig. (2-tailed)	.011	.000	.000	.000	.001	
	N	1560	1560	1560	1560	1560	1560.000

\*\*Correlation is significant at 0.01 level (2-tailed), \*Correlation is significant at 0.05 level (2-tailed)

Regression analysis was performed to assess the strength of association between behavioural intentions dimensions and CRM index and predictive capacity of CRM index to predict the behavioural consequences. A summated score for positive behavioural intention (variables: loyalty, will-to-pay-

more and internal response) (BI+) and negative behavioural intention (variables: propensity-to-switch and external response) (BI-) was obtained for each individual by obtaining the mean of response against each corresponding variable. The results are displayed in Table-18.

**Table-18: Regression results**

	Model		ANOVA		Unstandardized		Standardised regression		
	R <sup>2</sup>	AdjuR <sup>2</sup>	f	Sig.	B	Std. error	β	t	Sig.
BI+	.366	.365	304.052	.000	-.912	.320	.605	17.437	.000
BI-	.153	.151	105.766	.000	2.929	.217	.391	10.284	.000

To construct the nomological network structural equation modeling (SEM) was used to test the nomological validity of the proposed model. E-SERVQUAL, behavioural intentions, customer satisfaction and CRM computation (CRMI and CRMCP) scores for the individual dimensions were done by summing the ratings on their individual scale items which were used as indicators of the latent E-SERVQUAL, behavioural intentions (BI+ and BI-) and CRM items (CRMI and CRMCP). Confirmatory factor analysis was used to understand the dimensionality, convergence and discriminant validity for each construct to determine whether all the 42 indicators (including E-SERVQUAL, BI+ & BI-, CRMI and CRMCP) measure the construct adequately as they had been assigned for. LISREL 8.80 programme was used to conduct the Structural Equation Modeling (SEM) and Maximum Likelihood Estimation (MLE) was applied to estimate the

CFA models. A number of fit-statistics (Table-19) were obtained. The GFI, AGFI and NFI scores for all the constructs were found to be consistently >.900 indicating that a significant proportion of the variance in the sample variance-covariance matrix is accounted for by the model and a good fit has been achieved (Baumgartner and Homburg, 1996; Hair et al, 1998; Hulland, Chow and Lam, 1996; Kline, 1998; Holmes-Smith, 2002, Byrne, 2001). The CFI value for all the constructs were obtained as > .900 which indicated an acceptable fit to the data (Bentler, 1992). The RMSEA values obtained are < 0.08 for an adequate model fit (Hu and Bentler, 1999). The probability value of Chi-square is more than the conventional 0.05 level (P=0.20) indicating an absolute fit of the models to the data. The Cronbach's á values were consistently >.7 and hence the scale is reliable (Nunnally and Bernstein, 1994). The factor loadings for the items were also significant (>.500).

**Table-19: Summary representation of Confirmatory Factor Analysis (CFA)**

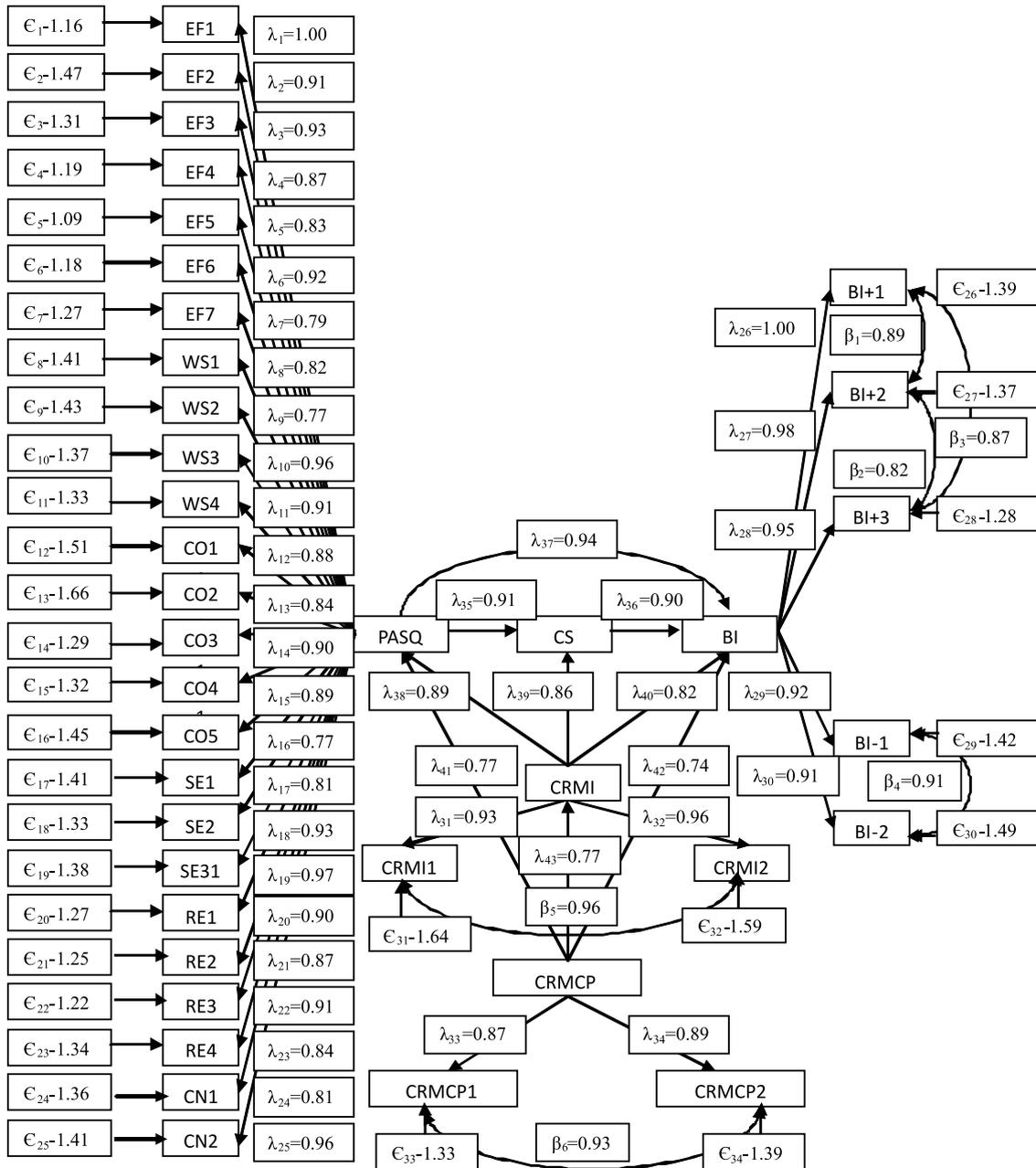
Factor indicators	χ <sup>2</sup>	df	P-value	GFI	AGFI	CFI	NFI	RMSEA	Factor loading	α - value
<b>Efficiency</b>	8.775	5	0.078	0.969	0.972	0.991	0.979	0.065		0.981
EF1									0.837	
EF2									0.842	
EF3									0.804	
EF4									0.832	
EF5									0.799	
EF6									0.798	
EF7									0.887	
<b>Web-System</b>	9.621	3	0.049	0.909	0.918	0.996	0.997	0.061		0.979

Factor indicators	$\chi^2$	df	P-value	GFI	AGFI	CFI	NFI	RMSEA	Factor loading	$\alpha$ - value
WS1									0.898	
WS2										0.879
WS3									0.845	
WS4									0.877	
<b>Commitment</b>	10.001	4	0.287	0.972	0.969	0.974	0.991	0.087		0.966
COM1									0.843	
COM2									0.826	
COM3									0.809	
COM4									0.856	
COM5									0.818	
<b>Security</b>	4.712	2	0.061	0.944	0.932	0.949	0.966	0.059		0.941
SEC1									0.828	
SEC2									0.764	
SEC3									0.801	
<b>Responsiveness</b>	8.197	3	0.116	0.980	0.974	0.951	0.952	0.020		0.891
RES1									0.861	
RES2									0.865	
RES3									0.708	
RES4									0.798	
<b>Contact</b>	8.991	2	0.076	0.979	0.955	0.969	0.971	0.073		0.942
CON1									0.872	
CON2									0.809	
<b>BI+</b>	9.219	4	0.031	0.919	0.917	0.921	0.923	0.073		0.929
BI+1									0.881	
BI+2									0.781	
BI+3									0.709	
<b>BI-</b>	7.891	2	0.041	0.946	0.941	0.978	0.938	0.049		0.911
BI-1									0.791	
BI-2									0.715	
<b>CS</b>	9.693	4	0.091	0.967	0.981	0.991	0.987	0.051		0.997
CS1									0.873	
CS2									0.859	
CS3									0.786	
<b>CRMI</b>	8.165	2	0.087	0.912	0.919	0.941	0.933	0.032		0.972
CRMI1									0.821	
CRMI2									0.816	
<b>CRMCP</b>	10.321	2	0.0912	0.966	0.987	0.965	0.942	0.079		0.992
CRMCP1									0.910	
CRMCP2									0.899	

Structural Equation Modeling (SEM) was used to test the relationship among the constructs. A number of fit-indices namely Chi-square/df = 561/79, GFI = 0.991, AGFI = 0.987, CFI = 0.980, NFI=0.977, RMSEA=0.043, expected cross validation index (ECVI)=0.921 were found to be significant. All the 43 paths drawn were found to be significant at  $p < 0.05$ . The research model holds well (Fig.2) as the fit-indices

supported adequately the model fit to the data. The double-curved arrows indicate co-variability of the latent variables. The residual variables (error variances) are indicated by  $\epsilon_1, \epsilon_2, \epsilon_3$ , etc. The regression weights are represented by  $\lambda$ . The co-variances are represented by  $\hat{\alpha}$ . To provide the latent factors an interpretable scale; one factor loading is fixed to 1 (Hox & Bechger).

Fig.2: Structural model showing the path analysis using SEM



The SEM disclosed the following direct and indirect and total effects of the independent variables on dependent variables (Table-20):

**Table-20: Direct, indirect and total effects of independent variables on dependent variables**

Relating variables	Direct effects	Indirect effects	Total effects
PASO → CS	0.91		0.910
PASO → CS → BI(+)		.762 (.91*.90*1.00*.98*.95)	0.762
PASO → CS → BI(-)		.685 (.91*.90*.92*.91)	0.685
CRMI → PASO → CS → BI(+)		.586 (.77*.91*.90*1.00*.98*.95)	0.586
CRMI → PASO → CS → BI(-)		.527 (.77*.91*.90*.92*.91)	0.527
CRMCP → CRMI → PASQ → CS → BI(+)		.544 (.93*.77*.91*.90*1.00*.98*.95)	0.544
CRMCP → CRMI → PASO → CS → BI(-)		.490 (.93*.77*.91*.90*.92*.91)	0.490
CRMI → PASO	0.77		0.770
CRMCP → PASQ	0.93		0.930

**Conclusion**

The rapid penetration of technology in the service domain has changed the entire perception of service quality. The modernization and automation of State Bank of India (SBI) had been a significant event in the banking industry in India as, being the largest nationalized public sector bank in India, SBI has become the face of Indian electronic banking. Due to the phenomenal reach and penetration of SBI it was a challenge for the technologists to ensure a 360 degree techno-transformation of the same. The study revealed that the automated service quality dimensions which proved to be significant in perceiving quality are efficiency, web-system, commitment, security, responsiveness and contact. The study assured positive impact of SBI service automation, as perceived automated service quality proved to be a positive determinant of customer satisfaction and subsequent favourable behavioural intentions namely loyalty and willingness to pay more for augmented services. The performance of CRM components (people, process and technology and their dimensions) of SBI were found to be instrumental in determining the CRM index of the same. The CRM indexing approach yielded significant result as perceived automated service quality was found to be predictable on the basis of CRM index which was conceptualized as a quantifiable benchmarking process and it was also appropriate to forecast the degree of customer satisfaction and the pattern of behavioural intentions.

The study embarked on identifying the penetration and acceptance of automated banking services offered by SBI at

the semi-urban/rural geodemographic sector and the results were indicative of a positive trend. The perceived automated service quality, offered by SBI, has enhanced the level of customer satisfaction culminating into positive behavioural intentions, which were reflected in customers' assured loyalty expressions and their willingness to pay more for improved service quality. At the same time, the study confirmed that SBI has managed to arrest the switching propensity and complaining behaviours of customers, again, reflective of satisfactory acceptance of automated banking services.

The automation of banking services in SBI has not inhibited human interface in service transactions, as it was apprehended to do so in an automated scaffold dominated by human-disintermediation and surrogation of human-induced banking transactions with automated devices. The Customer Relationship Management (CRM) practice initiated by SBI seemed to have properly integrated with their automated operational procedures as the CRM components were found to influence the perceived automated service quality of customers in a positive way. Considering the requirements of quantification and benchmarking the CRM performance, the researchers attempted to construct a CRM index which was conceptualized to act as an effective predictor of perception of service quality, customer satisfaction and behavioural intentions. The CRM index thus obtained based on the performance of CRM components namely people, process and technology and their sub-dimensions, proved to be a significant predictor of the major variables under study and as mentioned above.

The proposed research model also holds good as the model constructs fit the data thereby establishing a cause and effect relationship between the variables and depicted the direct and indirect effects of the same.

The study was indicative of the shift and subsequent adoption of automated banking services in a semi-urban/rural set up. The CRM index approach may be used by the bankers, with adequate refinement, as it hinted to be an effective forecaster of perception of service quality, customer satisfaction and behavioural intentions of customers. SBI should devise a process to regulate the CRM index at a desired level by ensuring human-interface in non-human-induced (automated) service transactions which obviously points out to effective communication with its customers. While developing models to execute corporate social responsibility (CSR) for stimulating sustainable development, SBI should manipulate the CRM components used to construct the CRM index as the triple-bottom-line (TBL) would play a major role in the construct as expanded marketing mix elements. The managerial implications of the findings of the study converged upon the management of relationships between the service provider and the service recipients as the nature of interaction in the relationships has undergone a drastic change with the introduction of technology in service transaction and change in customers' expectation & perception of service quality.

The study had geographical limitations as it has been restricted to Durgapur, Asansol, Bolpur and Santiniketan in West Bengal, which in future, can be widened to obtain a more generalized conclusion. In future the comparative studies can be initiated by including more variables namely service differentiation and customization, zone of tolerance etc. Extrapolative studies can also be undertaken by considering relationship inertia and switching barriers as determinants of behavioural intentions and their possible linkage to perception of service quality.

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# Ad. Jingles: Brand Recall

Vandana Gupta

## A b s t r a c t

Jingles have been entangled with advertising since the beginning of the advertising concept. Advertising jingles have changed ad campaigns. Ad makers have suggested that jingles make them more attractive. Jingles are nothing but short pieces of music added to the advertisement films to make them catchy and provide them recall ability. Jingles can either be added to television ads, films or to radio ads. Ever since advertising jingles were introduced, advertisers have benefited massively. The paper explores the brand recall by various consumers with the help of advertisements. For primary data, a structured questionnaire was designed and consumers were approached.

**Key words:** *Advertisements, brand recall, jingles.*



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Advertising jingles are usually composed of experts. Jingles are an important part of the campaign and so much care is taken to ensure that a very high quality advertising jingle is produced. Because of its wide scope, many are established to musicians lending their talents. This goes to the promotional activities of the company with a good jingle increase, as the ad, and obviously the fact that every ad maker's desire to have a figurehead, quite literally, Sun History suggests that jingles dramatically helped the cause of advertising. Advertising jingles are not integrated into print ads. This is believed by many as one of the biggest disadvantage of print advertising. Advertising jingles give an extra edge. Since there is a high demand for advertising jingles, a lot of people are choosing to become professional jingle composer. As a result, as an advertiser, people have a lot of options. If we look to create a good indication that we should definitely consider consulting an expert Jingle composer. Many companies have committed themselves to do this kind of work and they do it all, from writing the lyrics of advertising jingle

for composing the music and even to his execution. In today's generation, there is no substitute for a title tune that is catchy. Jingles have to promote sales, since they identify points for the products are supported.

Advertising campaigns aim to facilitate recall of a consumer opinion and judgments associated with the product. Consumer's knowledge is considered over marketers and creative people in the commercial sector. A display has a very difficult task of collecting the perception of consumers and to make more of a net tally of what the consumer already knows the brand. In the case of television advertising, the attention of the observer provided a condition for elaborative indoctrination, is necessary to the commercial message. The key challenge for advertising is to ensure that consumers learn about the brand that transcends their business skills. Music and sound in advertising are not only used because the media of television makes this extra option added to the image. First image attracts attention, and then explicit recognition, reinforcement, connection, learning and recall of the advertised product. Market research has shown that unconscious reactions to stimuli are often more accurate indicators of actual marketing thinking and subsequent behaviour. To view pictures does not work efficiently using implicit or unconscious learning and memory, if they occur in the same way music does not efficiently using explicit learning and attention, unless directed instruction and supervision. The relationship between music and image to be recognized by film studies. Musical accompaniment is thus effectively positioned perception, especially the semi-conscious, without interrupting the narrative credibility. Music can accentuate different qualities of visual activities and thereby improve their perceptual salience. The simultaneous presentation of music and film releases automatically bottom-up principles that result in perceptual grouping in both auditory and visual domains. Image-Music congruence increased consumer attention and memory. Early studies have shown that implicit memory effects are contingent on a minimum level of processing, and marketing should consider the role of implicit memory in assessing the effectiveness of a brand or a campaign. Indirect memory tests may be more appropriate as they assess whether a learning episode (eg, exposure to brand fragments) facilitates the task performance (eg response facilitate questions about brand associations) without the memory of the episode learning. Although music seems implicit learning and memory, has researched a little, considering music as a "cooperative character." studies on implicit memory and music, primarily on unconscious memory of musical functions and not to visual

and verbal information, which is performed the "musical vehicle. Although the latter anthropological and ethnomusicological studies in children concluded that song is recognized as a cultural phenomenon. Not many studies have examined the role of music as a means of implicitly storing and retrieving information within a commercial context. Some empirical studies of music as a mnemonic device in communicating advertising slogans, with the help of direct and indirect tests in a laboratory environment concluded that music extended memory for advertising slogans, if the slogans were in advertising in the form of jingles recorded or song. One of the reasons for the absence of jingles given is that the use of better technology, better image quality and more celebrities has taken its toll on the creative aspect of the ads, especially in the case of jingles. People see these ads for a moment and forget it the next, to ensure the real challenge for the ad-maker and brand, that their report, the same effect even if it played years after it was aired for the first time, has. A typical example here are the ads that came from Nirma group with one or two decades. These ads are not a celebrity, but now we remember them and the exact words in her jingle. We do not have to start humming "Nirma Doodh si se Aaye safedi, Rangeen kapda bhi Khil Khil jayein ..." Each time these ads on television or radio broadcast. These ads helped Nirma create an image for itself in the minds of customers. Nirma was to become one of the largest players in the detergent and soap in India, and this simple and catchy advertising jingle was largely credited for this. There is also the argument that in this modern time, jingles have more irrelevant. With so many options that the consumer is today he particularly concerned with the value for money that he profits from a product than brand loyalty. However, if this is the case, then how can the immense popularity of Airtel and Vodafone ads will be declared? Why is it that every time we the song or the Airtel Vodafone song we feel emotionally attached to hear ad? Airtel ads have the brand A.R. Rahman to play background score, while the Vodafone / Hutch ads have the sweet You and I do not capture the attention of this audience, and these two ads have great success with the masses, regardless of age, gender, region, religion etc. Jingles added an extra flavour to these ads, people easily remember the brand when they hear their jingles, and especially the jingles were the audience to connect on an emotional level. So popular are these jingles that people still use it as their cell phone ring tones, a good 3-4 years after they first aired.

## LITERATURE REVIEW

The traditional approach to the study of music in advertising has been focused on the effect of music on adjustment to the advertised product (GOM 1982; Kellars and Cox 1989; MacInnis and Park 1990), and consumer perception of an ad with music of all forms as the perception of an ad being optimistic, informative, etc. (Stout and Leckenby 1988). The music has also been shown to affect the pace of consumer shopping and eating (Millinan 1982, 1986). All these papers address more towards the emotional side of consumer response to the cognitive side. Within a cognitive perspective music are a distraction (Park and Young 1986) was considered.

There is some experimental evidence for the idea, remember that music can improve (Wallace 1990) to support. This experiment includes ballads as advertising. The advantage of using ballad that new tunes are mostly unknown, and the lyrics just describe events and ideas. These stimuli eliminates purely audit of any possible interaction with or interference from a visual display.

It is surprising that has not devoted more attention to be paid has been used frequently as music in advertising. Stewart and Furse (1986) found that music in just over 40 percent of 1,000 TV commercials seem used to directly convey the advertising message. Similar frequencies were obtained in a follow-up study (Stewart and Koslow). In a later report recommended Stewart, Farmer, and Stannard (1990), that further research was needed in this area. Gom (1982) that feelings generated from listening or did not like music like in combination with a product can have a positive or negative selection of products. Others have suggested that music could change your mood, the product creates choice (Alpert and Alpert, 1990; Bruner, 1990). Kellar is found that tempo and mode can change your mind and feelings. Kent (1991) it was the tempo (speed) and mode (pitch); Kellaris and Rice (1993) found some support for tempo, volume and sexual responses to the Music and Brooker and Wheatley (1994), found that pace was no impact on consumer behaviour.

MacInnis and Park studied that the relevance of music and found that music had an equally strong effect on both low- and high-involvement subjects' attention. Kellaris, Cox and Cox (1993) proposed that musics relevance to the product (ie, music-message agreement).

In view of Wallace (1991) found that jingles can facilitate brand recall even if consumes do not listen it for long period. Yalch (1991) agreed, especially when individuals presented with a few clues to the retrieval aid or have minimal exposures to advertising. Serafine, Crowder, and Repp (1984, 1986) suggested that an original melody or text is better appreciated when paired with the original melody or text.

## RESEARCH METHODOLOGY

### OBJECTIVES

1. To identify the major factors affecting brand recall by customers with regard to advertisement jingles.
2. To study the effect of advertisement jingles on customer's recall ability.

### HYPOTHESIS 1

There are certain major factors that are contributing significant impact on Brand recall with regard to Advertisement.

H0= There is no impact of certain factors on brand recall with regard to advertisement jingles

H1= There is a significant impact of certain factors on brand recall with regard to advertisement jingles.

Factor Analysis and T test have been used to test the hypothesis.

### HYPOTHESIS 2

There is a significant correlation between brand recall and advertisement jingle.

Age Group	RESPONDENTS
20 - 30	67
30 - 40	24
40 - 50	14
Above 50	5
Total	110

H0= There is no correlation between ad jingles and brand recall.

H1= There is significant correlation between Ad jingles and brand recall.

Carl Pearson's Correlation has been used for testing of hypothesis.

**MATERIALS AND METHODS**

**RESEARCH DESIGN**

**1. RESEARCH TYPE** The study is based on descriptive research design.

**2. SAMPLE SIZE**  
N=110

**3. RESEARCH INSTRUMENT**

This work was carried out through a self prepared questionnaire based on Likert Scale.

**4. DATA ANALYSIS**

- SPSS 17
- Microsoft Excel

**5. FACTORS**

- ✓ Duration.
- ✓ Customer anticipation.
- ✓ Relevancy of the ad jingle with the characteristics of the product.
- ✓ Relevancy of the ad jingle with the objective (need) of the product.
- ✓ Uniqueness.

The above factors have been identified through thorough understanding of the referred research papers.

GENDER GROUP	RESPONDENTS
FEMALE 47	
MALE 63	

**6. SAMPLING FRAME**

Respondents were from:

- a. Academic institutes such as Amity Business School, Delhi Business School, Symbiosis Pune, XLRI Jamshedpur.
- b. Corporate organizations such as Accenture, Odyssey India Limited, Premier India Bearings Limited and Madison Advertising Group.
- c. Kolkata, Delhi, Noida, Hyderabad, Bengaluru, Mumbai, Gurgaon.

**7. SAMPLING PLAN**

Questionnaires were mailed to the identified respondents as mentioned in the sampling frame and the responses were assessed over a period of two weeks.

**8. DESCRIPTION OF FACTORS**

➤ **Duration:**

This factor signifies the amount of time a respondent remembers an advertisement. It considers both the forms of advertisements (jingle ad and drama ad), and checks the longevity of both. It justifies whether an advertisement jingle helps the respondents to remember the advertisement for a longer period of time.

➤ **Customer Anticipation:**

The factor checks the expectations of the respondents. It tries to reflect the perception and expectancy level of the respondents towards an advertisement. It tries to find whether an advertisement jingle creates the right mood, excitement for the respondents towards a product advertised.

➤ **Relevancy of the Ad Jingle with the Characteristics of the Product:**

This factor measures the importance of the advertisement jingle with respect to the characteristics of the product. It tries to measure whether an advertisement jingle is able to justify the characteristics of the product. It also reflects whether the customers can recall the characteristics of the products through advertisement jingles.

➤ **Relevancy of the Ad Jingle with the Objectives of the Product:**

This factor measures the relation between an advertisement jingle and the objective the product associated with the advertisement jingle. It reflects the influence that advertisement jingles has on throwing light on the objectives of the product.

➤ **Uniqueness:**

Uniqueness measures the point of difference between a jingle advertisement and drama advertisement. It provides information regarding how an advertisement jingle makes a product unique and different as compared against its competitors. It checks whether an advertisement jingle indeed makes identifying the uniqueness of the product in the eyes of the consumers.

**DATA ANALYSIS AND INTERPRETATION**

**A. CORRELATION**  
**Correlation**

**Table 8**

		FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
FACTOR 1	Pearson Correlation	1	.065	.116	.250**	.270**
	Sig. (2-tailed)		.501	.229	.008	.004
	N	110	110	110	110	110
FACTOR 2	Pearson Correlation	.065	1	.665**	.359**	.670**
	Sig. (2-tailed)	.501		.000	.000	.000
	N	110	110	110	110	110
FACTOR 3	Pearson Correlation	.116	.665**	1	.457**	.708**
	Sig. (2-tailed)	.229	.000		.000	.000
	N	110	110	110	110	110
FACTOR 4	Pearson Correlation	.250**	.359**	.457**	1	.623**
	Sig. (2-tailed)	.008	.000	.000		.000
	N	110	110	110	110	110
FACTOR 5	Pearson Correlation	.270**	.670**	.708**	.623**	1
	Sig. (2-tailed)	.004	.000	.000	.000	
	N	110	110	110	110	110

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

**Analysis:**

Inter-correlation denotes the correlation of a number of variants among themselves, as distinct from the correlations between them and an 'outside' or dependent variate. The above table represents the correlation that exists between each parameter and the values classified denote the degree of correlation between two factors. As the note just below the tables defines that there is 99% level of confidence and at 1% level of significance.

**Interpretation:**

**Correlation Between Duration (Factor 1) & Customer Anticipation (Factor 2)**

**Table 9**

FACTOR 1		FACTOR 2
Person Correlation		.065
Sig. (2-tailed)		.501
N		110

The table adjacent reflects the correlation existing between Factor 1 (Duration) and Factor 2 (Customer Anticipation). It shows that there is positive correlation between the two factors. However the correlation value shows that the positive correlation does not assure a positive significance between the two. The relation between the two factors is not significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that Customer Anticipation has no relevant effect on duration according to the research.

**Correlation Between Duration (Factor 1) & Relevancy of The Ad Jingle With The Characteristics of The Product (Factor 3)**

**Table 10**

		<b>FACTOR 3</b>
<b>FACTOR 1</b>	<b>Pearson Correlation</b>	.116
	<b>Sig. (2-tailed)</b>	.229
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 1 (Duration) and Factor 3 (Relevancy of the advertisement jingle with the characteristics of the product). It shows that there is positive correlation between the two factors. However the correlation value shows that the positive correlation does not assure a positive significance between the two. The relation between the two factors is not significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that relevancy of the advertisement jingle with the characteristics of the product has no relevant effect on duration according to the research.

**Correlation Between Duration (Factor 1) & Relevancy of The Ad Jingle With The Objectives of The Product (Factor 4)**

**Table 11**

		<b>FACTOR 4</b>
<b>FACTOR 1</b>	<b>Pearson Correlation</b>	.250**
	<b>Sig. (2-tailed)</b>	.008
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 1 (Duration) and Factor 4 (Relevancy of the advertisement jingle with the objectives of the product). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that relevancy of the advertisement jingle with the objectives of the product has relevant effect on duration according to the research.

**Correlation Between Duration (Factor 1) & Uniqueness (Factor 5)**

**Table 12**

		<b>FACTOR 5</b>
<b>FACTOR 1</b>	<b>Pearson Correlation.</b>	.270**
	<b>Sig. (2-tailed)</b>	.004
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 1 (Duration) and Factor 5 (Uniqueness). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that uniqueness of the product has relevant effect on duration according to the research.

**Correlation Between Customer Anticipation (Factor 2) & Relevancy of the Ad Jingle with the Characteristics of the Product (Factor 3)**

**Table 13**

		<b>FACTOR 3</b>
<b>FACTOR 2</b>	<b>Pearson Correlation</b>	.665**
	<b>Sig. (2-tailed)</b>	.000
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 2 (Customer Anticipation) and Factor 3 (Relevancy of the Ad Jingle with the characteristics of the product).

It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that relevancy of the ad jingle of the product has effect on customer anticipation according to the research.

**Correlation Between Customer Anticipation (Factor 2) & Relevancy of the Ad Jingle with the Objectives of the Product (Factor 4)**

**Table 14**

		<b>FACTOR 4</b>
<b>FACTOR 2</b>	<b>Pearson Correlation</b>	.359**
	<b>Sig. (2-tailed)</b>	.000
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 2 (Customer Anticipation) and Factor 4 (Relevancy of the Ad Jingle with the objectives of the product). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that relevancy of the ad jingle with respect to the objectives of the product has effect on customer anticipation according to the research.

**Correlation Between Customer Anticipation (Factor 2) & Uniqueness (Factor 5)**

**Table 15**

		<b>FACTOR 5</b>
<b>FACTOR 2</b>	<b>Pearson Correlation.</b>	.670**
	<b>Sig. (2-tailed)</b>	.000
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 2 (Customer Anticipation) and Factor 5 (Uniqueness). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that the uniqueness of the ad jingle of the product has effect on customer anticipation according to the research.

**Correlation Between Relevancy of the Ad Jingle with the Characteristics of the Product (Factor 3) & Relevancy of the Ad Jingle with the Objectives of the Product (Factor 4)**

**Table 16**

		<b>FACTOR 4</b>
<b>FACTOR 3</b>	<b>Pearson Correlation</b>	.457**
	<b>Sig. (2-tailed)</b>	.000
	<b>N</b>	110

The table adjacent reflects the correlation existing between Factor 3 (Relevancy of the ad jingle with the characteristics of the product) and Factor 4 (Relevancy of the ad jingle with the objectives of the product). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that the relevancy of the ad jingle with respect to objectives of the product has effect on the relevancy of the ad jingle with respect to characteristics of the product.

**Correlation Between Relevancy of the Ad Jingle with the Characteristics of the Product (Factor 3) & Uniqueness (Factor 5)**

**Table 17**

		<b>FACTOR 5</b>
<b>FACTOR 3</b>	<b>Pearson Correlation</b>	.708**
	<b>Sig. (2-tailed)</b>	.000

The table adjacent reflects the correlation existing between Factor 3 (Relevancy of the ad jingle with the characteristics of the product) and Factor 5 (Uniqueness). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that the uniqueness of the ad jingle has effect on the relevancy of the ad jingle with respect to characteristics of the product.

**Correlation Between Relevancy of the Ad Jingle with the Objectives of the Product (Factor 4) & Uniqueness (Factor 5)**

**Table 18**

		FACTOR 5
FACTOR 4	Pearson Correlation	.623**
	Sig. (2-tailed)	.000
	N	110

The table adjacent reflects the correlation existing between Factor 4 (Relevancy of the ad jingle with the objectives of the product) and Factor 5 (Uniqueness). It shows that there is positive correlation between the two factors. The correlation value shows that the positive correlation has also resulted in a positive significance between the two. The relation between the two factors is significant towards the attainment of the objective of the research. Hence, an inference can be determined from this table, that the uniqueness of the ad jingle has effect on the relevancy of the ad jingle with respect to objectives of the product.

**B. FACTOR ANALYSIS**

The significance level for the test adequacy is coming above .50, which shows that our data is reliable to conduct factor analysis test for the various statements. The main objective for conducting this test is to reduce the number of factors to the minimum level, and those minimum factors are the most important one need to be focus in the whole process.

From the above table it is to be analysed those top 2 variables will lead to 62.767 % of variance. It shows among 5 factors, 2 will play a significant role in creating a variance in the process of creating brand recall in the customer’s mind.

**Table 19**

KMO and Bartlett’s Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.607
Bartlett’s Test of Sphericity	Approx. Chi-Square	97.154
	df	10
	Sig.	.000

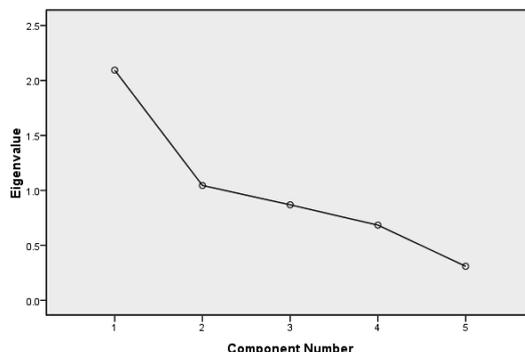
**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cummulative %	Total	% of Variance	Cummulative %	Total	% of Variance	Cummulative %
1	2.094	41.879	41.879	2.094	41.879	41.879	1.958	39.154	39.154
2	1.044	20.888	62.767	1.044	20.888	62.767	1.181	23.613	62.767
3	.869	17.375	80.142						
4	.684	13.675	93.816						
5	.309	6.184	100.000						

*Extraction Method: Principal Component Analysis.*

**Fig. 3**

Scree Plot



**Analysis:**

It is analysed from the above diagram that Eigenvalue for 2 factors is above 1, which shows significant impact of these factors in the whole process.

The 2 factors are Customer Anticipation and Uniqueness. Their respective values are .850 and .868. These factors are resulting in a significant creation of brand recall by customers

**Table 21**

**Rotated Component Matrix<sup>a</sup>**

	Component	
	1	2
FACTOR 1	.320	.497
FACTOR 2	-.088	.850
FACTOR 3	.764	.214
FACTOR 4	.714	.346
FACTOR 5	.868	.213

*Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.*

**Customer Anticipation:**

The factor checks the expectations of the respondents. It reflects the perception and expectancy level of the respondents towards an advertisement. It finds whether an advertisement jingle creates the right mood, excitement for the respondents towards a product advertised.

**Uniqueness:**

Uniqueness measures the point of difference between a jingle advertisement and drama advertisement. It provides information regarding how an advertisement jingle makes a product unique and different as compared against its competitors. It checks whether an advertisement jingle indeed makes identifying the uniqueness of the product in the eyes of the consumers.

**One-Sample Test**

From the adjacent table it is analyzed that there is significant impact of 2 factors in the process of creating brand recall in the customer’s mind.

**C. T TEST**

**One-Sample Test**

**Table 22**

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
FACTOR 2	21.700	109	.000	.977	.89	1.07
FACTOR 5	24.551	109	.000	1.134	1.04	1.23

**HYPOTHESIS TESTING**

H0= There is no impact of certain factors on brand recall with regard to advertisement jingles

H1= These is a significant impact of certain factors on brand recall with regard to advertisement jingles.

It can be analyzed from the above table that there is 95% of confidence level and P value comes to be .05 and if the significance value comes below .05, our hypothesis will be accepted. In the table  $P < .05$  (2 tailed) (.000), it shows our hypothesis is significant and Null hypothesis is rejected and alternative hypothesis is accepted.

From all the 5 factors, the 2 significant factors has been taken and T test is done on them and from our analysis we have found a significant effect of these factors on the whole process. So we can say, there is significant impact of advertisement jingles on brand recall by customers.

		FACTOR 5
FACTOR 3	Pearson Correlation	.708**
	Sig. (2-tailed)	.000

**HYPOTHESIS TESTING**

H0= There is no correlation between ad jingles and brand recall.

H1= There is significant correlation between Ad jingles and brand recall.

It is clearly evident from the Correlation and Sig (2- tailed) test, that the hypothesis that we selected is accepted.

The P value is below .05 that is .000, which shows that null hypothesis is rejected and alternative hypothesis is accepted, which shows that there is a significant correlation between Factor 3 (Relevancy of the ad jingle with the characteristics of the product) and Factor 5 (Uniqueness).

From the above analysis it can inferred that by using jingles in advertising campaign it will create a uniqueness image in the mind of the customer, they easily link the brand image with services that are being offered by the organization and help in increasing Brand recall in the mind of the customers. We can say it as creating a relationship in the minds of the customers to attain a long term vision of the organization. So these jingles are contributing a major role in Brand Recall of

the advertisement, that is one of the key factor for the success factor.

**RECOMMENDATIONS**

As per the hypothesis and the research objectives, we can recommend the following points for future studies as well as for general viewing for creatives involved in creating an advertisement using advertisement jingles.

- a. Customer anticipation regarding a product does not too much affect the brand recall of the customers. This is for the reason that advertisement jingles are made to suit the drama or the skit of the advertisement. Advertisement jingles can change this fact if only it would be made keeping the product in mind and not the advertisement script.
- b. Advertisement jingle goes a long way in making a product to be perceived as unique by the consumers. This is because of the general perception of customers that music gives an advertisement the creative edge over other forms of advertisements. Hence, it is imperative for ad gurus to look into creating an advertisement which can showcase the creativity of the advertisement jingle as well. New and freshly composed advertisement jingles would give the brand recall by customers a boost.
- c. According to the findings in the research, the brand recall of customers is directly related to the unique features, characteristics and objectives of the product. Hence to give a brand this edge against its competitors, it is of utmost importance that an advertisement jingle is able to justify the characteristics of the brand as well as the product. It should also be able to highlight the competitive advantage of the brand gained over its competitors.
- d. A drama or a skit based advertisement is successful only if:
  - the advertisement is humorous.
  - the advertisement follows a well structured script.
  - the characters involved in the advertisement are celebrities.
  - the advertisement matches the customer’s perception towards the need of the product.
- e. An advertisement involving a jingle is successful and provides brand recall ability if:
  - it has been originated from an old yet popular song.
  - the advertisement involves a celebrity.

- catchy music with the use of digital sound and well composed lyrics.
- it is unique and is able to prove its competitive advantage through the jingle.
- it can be recollected even against the changing time.
- involves a catchy punch line.
- it is played repeatedly.

f. Customer anticipation towards an advertisement jingle and its uniqueness forms the main reason for brand recall. The study actually reflects the fact that customer's of today's times are looking for uniqueness in an advertisement which has been exploited by the use of advertisement jingles and also that the secret towards creating anticipation amongst the customers can be rested on the shoulders of advertisement jingles. Hence, it is furthermore important for advertisement agencies to look into creating an advertisement which is creative, maybe with the use of advertisement jingles, and also look to creating anticipation and interest for the product or brand.

## CONCLUSION

Music in advertising is a heavily used social-engineering technique and a commonplace of today's customers. From an advertising perspective, the benefits of music that give it a strong vehicle to a memorable message to the audience. Mainly used as a jingle on the radio and TV spots or as a background component in shopping environments sounds arise in the context of the interaction on the Internet and digital media in the open. But there was only very limited attempts to control music in the interactive experience.

- Customer Anticipation towards a brand and its products can be clearly classified by the uniqueness of an advertisement. The study reflects that how an advertisement jingle creates customer anticipation by its uniqueness, because as per past studies, music in advertisement creates a differentiation and more importantly proves to be unique and decisive in brand building.
- A very important observation of this study is that popular music more relevant to the story advertising (91 percent) than the product or service (28 percent). This suggests that there is popular music are used by some customers, provide for some type of relevance, or at least perspective (eg, time, uniqueness) to the action in advertising to

consumers with the goal of increasing the participation of consumers in the commercial register

- It seems that advertisers and advertising agencies, use music to "fit" the action rather than the product. This contradicts previous research that a commercial is effectively complete when the music in some way relates to the product.
- The next step is to build on this foundation in the various categories of variables (continuous, commercial properties, commercial objects, features, uniqueness and musical characteristics). For instance, the definition of the time, or the surrounding program provide more or less effectiveness of advertising with music. Non-narrative productions (commercial features) have to interact most effectively with music or commercials no. Future research can now quantify the process of striking its use in the longitudinal direction, how much is used and to qualify, as it is used.

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# Fama and French: Three Factor Model

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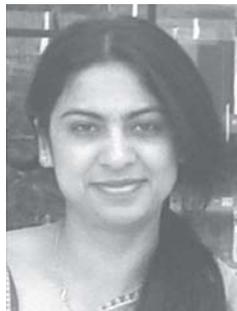
## A b s t r a c t

*Fama and French (1993) elaborated the use of firm specific characteristics in explaining the return behaviour of different types of portfolios and described that only market factor cannot describe the return behaviour of the stocks in a significant manner but a blend of market factor with the size and book to market ratio jointly has more power to elucidate the behaviour of stock returns. The Fama-French Three Factor Model compares returns of portfolio to three distinctive types of risk found in the equity market to assist in categorizing returns. The present study is destined to empirically test the three factor model suggested by Fama and French on Indian stock market and to document the evidences how firm characteristics are used as a better explanation of stock return behaviour.*

**Key words:** *Portfolio, return behaviour, categorising returns, size premium, value premium*



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The past two decades of finance research have strongly documented that the beta or systematic risk of a security or portfolio cannot be relied to explain the return behaviour of securities as well as returns of a portfolio. Further evidences have been documented by academic research done in this area indicating that certain other parameters should also be added to an asset pricing model which is based upon single factor like market risk. In June 1992, Eugene F. Fama and Kenneth R. French documented that on an average only 70% return of a portfolio are explained by the beta of the portfolio and rest 30% returns are expressed by some other factors. The Capital Asset Pricing Model (CAPM) is extensively used by researchers to explain the returns of a portfolio as well as for individual assets. Later on this model was found to be limited use due to ignorance of certain other fundamental parameters which also affect the return behavior of the security or portfolio. Incorrectly predicting results compared to realize returns and the affect of other risk factors have put this model under criticism. Ideally the inclusion of firm specific parameters when included in an asset pricing model, which is based upon any single

factor, must increase the explanatory power of that single factor model. Fama and French (1993) elaborated the use of firm specific characteristics in explaining the return behavior of different types of portfolios. He extended the CAPM model and described that only market factor cannot describe the return behaviour of the stocks in a significant manner but a blend of market factor with the size and book to market ratio jointly have more power to explain the behaviour of stock returns. The Fama-French Three Factor Model is used to predict the risk and returns of equity portfolios. It's a model that compares a portfolio to three distinctive types of risk found in the equity market to assist in categorizing returns. The return of any stock portfolio can be explained almost entirely by two factors: Market cap ("size") and book/market ratio ("value"). The smaller and the median market cap of your portfolio, the higher its expected return.

The present study is destined to empirically test the three factor model suggested by Fama and French on Indian stock market and to document the evidences how firm characteristics are used as a better explanation of stock return behaviour.

### Review of Literature

Fama and French (1992) provided a strong support to the relationship between size and B/M ratio and stock returns. In their univariate and multivariate tests they found a significant positive relationship between B/M value and stock returns and a negative relation between size and stock returns. They studied the joint effect of beta, size, E/P ratio, leverage and B/M ratio on the cross-sectional stock returns. Their results showed that both size and B/M ratios were significant when included together, and they dominated other variables. In their study leverage and P/E ratio were significant by themselves or when considered with size, but they became insignificant when both size and B/M ratio were considered. The strong size effect has also been documented in the succeeding works of Fama and French. Lakonishok, Schleifer and Vishny (1994) defined value strategies as buying shares with low prices compared to some indicator of fundamental values such as earnings, book value, dividend and cash flow. Glamour stocks grew faster for the first couple of years but after that the growth rates of the two groups were essentially the same. Value strategies using both past low growth and low current multiplies outperformed glamour strategies by an impressive 10-11% per year. Among the various measures of fundamental values, P/E did not produce as large an effect as price-to-book value or price-to-cash flow, possibly because stocks with temporarily depressed earnings were lumped together

with well performing glamour stocks in the high expected growth/low E/P category. They found little support to the view that value strategies were fundamentally riskier. Value stocks outperformed glamour stocks quite consistently and did particularly well in 'bad' state of the world.

Fama and French (1995) studied the behaviour of stock prices, in relation to the size and book-to-market-equity (BE/ME) of companies listed New York Stock Exchange, American stock exchange and NASDAQ for the period from 1963 to 1992. They found, consistent with rational pricing, high BE/ME (a low stock price relative to book value) indicated persistent poor earnings and low BE/ME (a high stock price relative to book value) indicated strong earnings. Within book-to-market groups, small stocks tended to be less profitable than big stocks. Berk (1995) argued that the market value of a firm was inherently negatively related with its common stock return and Berk (1996) reported that size effect disappeared when some non market based size measure was used. He used five different measures of firm size viz market capitalization (MC), book value of total assets (BVA), book value of undepreciated property, plant and equipment (PPE), annual sales value (sales) and number of employees in order to check the existence of size effect.

Fama and French (1996) studied the value and growth stocks in markets around world for the period 1975-1995. During the study period the difference between average returns on global portfolios of high and low book-to-market stocks was 7.60% per year and value stocks outperformed growth stocks in 12 of 13 major markets. There were similar value premiums when stocks were sorted on earnings/price, cash flow/price, and dividend/price and found a value premium in emerging markets. Since these results were out-of-sample relative to earlier tests on U.S. data, they suggested that the return premium for value stocks was real. An international CAPM was not able to explain the value premium, but a two factor model that included a risk. Kim (1997) examined the explanatory power of beta, firm size, book-to-market equity and the earning price ratio during the period July 1958 to December 1993. The study found stronger support for the betas pricing theory and concluded market betas had economically and statistically significant force regardless of the presence and absence of the firm size, book-to-market equity and earning-price ratio. But unlike the firm size and earning price, book to market had significant explanatory power to average stock returns. In particular, firm size was barely significant using monthly returns, but no longer

significant using quarterly returns. However, book-to-market equity still had significant explanatory power for average stock returns. Daniel and Titman (1997) confronted that firm characteristics rather than factor loadings on the SMB and HML portfolios determine expected returns. Within portfolios formed on size, there was basically no relation between returns and loadings on the SMB factor. This suggested that expected stock returns were related to their characteristics for reasons that might have nothing to do with the covariance structure of returns and constituted evidence against a financial distress interpretation of the SMB factor.

Connor and Sehgal (2001) examined the Fama-French three-factor model of stock returns for India using a sample of 364 companies from June 1989 to March 1999. They analyzed whether the market, size and value factors were pervasive in the cross-section of random stock returns and investigated whether there were market, size and value factors in corporate earnings similar to those in returns, and whether the common risk factors in earnings translated in to common risk factor in returns. They found evidence for pervasive market; size and book-to-market factors in Indian stock returns and found cross-sectional mean returns were explained by exposure to these three factors and not by the market factor alone. They found mixed evidences for parallel market, size and book-to-market factors in earnings and did not find any reliable link between the common risk factors in earnings and those in stock returns. As a whole the empirical results were reasonably consistent with the Fama-French Three-Factor model. Pandey (2001) studied panel data set of 1729 observations to identify variables that could explain expected returns of Malaysian stocks. The study was based on the fixed effects regression model as it performed better than the random effect model and OLS models without the firm effects. Results of the fixed-effect univariate regression indicated that beta, size, book-to-market value (B/M) ratio, earning-price (E/P) ratio and dividend yield individually played significant role in explaining stock returns and payout and leverage had no effect. The explanatory power of size (natural log of market capitalization) was the highest. Beta was found to have consistently a positive relation with stock returns by itself and other variables. But this explanatory power was less than size and other variables. Contrary to the results of Fama and French (1992) B/M ratio was not persistently a significant variable; it's significance disappeared when they incorporated size and E/P ratio in regression.

Drew, Naughton and Veeraraghavan (2003) studied firm size, book-to-market equity and security returns on Shanghai Stock Exchange (China) and tested multifactor approach to asset pricing in one of the most challenging international market, the Shanghai Stock Exchange, China for the period December, 1993 to December, 2000 by making various type portfolios. The study concluded that mean-variance efficient investors in china was able to select some combinations of small and low book-to-market equity firms in addition to the market portfolio to generate superior risk-adjusted returns. Moreover they found no evidence to support the view that seasonal effects could explain the findings of the multifactor model. In summary, the study found the market factors alone was not sufficient to describe the cross-section of average stock returns in China. Gaunt (2004) studied the evidences of size effect, BE/ME effect and the application of the Fama and French factor model in the Australian market. He found that beta was less than one which was contrary to Fama and French who found beta to be close to one. Risk inclined to be greater for smaller size firms and low BE/ME ratios like the findings of Fama and French. There were evidences that there was a monotonic increase in the HML factor loading from low to high BE/ME portfolios implying that the HML factor played a significant role in asset pricing. The author found an inconsequential small firm effect and no large firm effect. He found an improvement in the explanatory power of the three factor model over and above the one factor CAPM when compared to prior studies in the Australian setting. Vassalou and Xing (2004) investigated the relation between the size and book-to-market effects and default risk, defined as the risk that a firm failed to service its debt obligations. The authors estimated the default likelihood for up to 4,200 U.S. firms over the period 1971-1999 on the basis of contingent claims theory. The study showed that while the SMB and HML factors contain some default-related information, default risk could not account for the explanatory power of the Fama-French three-factor model. Nartea and Djajadikerta (2005) found a significant size effect and a weak BE/ME effect in the case of New Zealand. According to them, the three factor model's explanatory power was not as big an improvement over the CAPM as was for the Australian case. Sehgal and Triphati (2005) examined the size effect in the Indian stock market using data of top 482 Indian companies for the period of 1990-2003. They found a strong size premium using six alternative measures of company viz. - Market capitalization, Enterprise value, Net Fixed Assets, Net Annual Sales, Total assets and net working capital. Further the size based investment strategy seemed to be economically feasible as it

provided extra normal returns on risk adjusted basis. Frequent rebalancing of size based portfolio was however found to be undesirable. The size effect did not seem to be owing to any seasonality or business cycle factors. The presence of a strong size premium also raised doubts the informational efficiency of Indian Stock market. The authors found strong size effect over the study period which had become more pronounced during recent time period.

Bhel (2006) studied the Fama and French three-factor model of stock returns along with its variants, including the one-factor CAPM for 79 stocks listed on the BSE-100 stock market index for India from July 2001 to June 2006. These sample stocks were split in to six portfolios sorted on size and book-to-market equity ratio. The factor portfolios that explained the returns were the market factor, size factor (SMB) and value factor (HML). The author found strong evidences for the market factor in all the portfolios, it being regarded with had the highest explanatory power. The SMB and HML factors could not be clearly ranked in this regard. On the basis of the adjusted  $R^2$  it was confirmed that the three-factor model captured better the common variations in the stock returns than the CAPM. It was found that the three-factor model of Fama-French fares better in explaining the cross-section of returns in the portfolios than its variants and the CAPM.

#### Data Inputs and Research Methodology

The present study has considered a sample of 219 stocks which are listed in BSE 500 index. The monthly observations have been considered for all parameters used in Fama and French three factors model. As the base year of BSE-500 index was February 1999, so the study under consideration has taken data from Feb 1999 to December 2007. This time period has been studied in different time segments as Indian stock market passed through different phases of market cycle during the overall study period.

- ❖ First Phase, July 1997-March 2000 (End of declining trend and growth phase),
- ❖ Second Phase, April 2000-March 2003 (Bear Market Phenomenon), and
- ❖ Third Phase, April 2003-December 2007 (Bull Market Phenomenon).

Further, the companies were first shortlisted in consideration with the availability of the data for a regular period of the

sampled duration. The companies listed under the head 'Finance Related' was excluded as these companies may differ from the other companies in terms of their market cap and other financial parameters. A few companies were further eliminated due to non availability of data related to one or more parameters (EP or Size). So the final sample consisted of a total of 219 companies having consistent availability of monthly data for their prices, EP ratio, & size factors.

All the portfolios are constructed and revised on first trading day of July. All the data required for the study under consideration have been obtained from *PROWESS* database provided by CMIE, Mumbai.

#### The Fama and French Three Factors Model

To represent the market cap ("size") and book/market ratio ("value") returns, Fama and French modified the original CAPM with two additional risk factors: Size risk and Value risk.

The original CAPM equation:

$$E(R_i) = R_f + \beta_i (E(R_m) - R_f)$$

Where  $R_f$  is the risk free rate and  $E(R_m)$  is the expected excess return of the market portfolio beyond the risk-free rate, often called the equity risk premium.

The Fama and French equation:

$$E(R_i) = R_f + \beta_i (E(R_m) - R_f) + s_i \text{SMB} + h_i \text{HML}$$

Where SMB is the "Small Minus Big" market capitalization risk factor and HML is the "High Minus Low" value premium risk factor.

SMB, Small Minus Big, measures the additional return investors have historically received by investing in stocks of companies with relatively small market capitalization. This additional return is often referred to as the "size premium." HML, which is short for High Minus Low, has been constructed to measure the "value premium" provided to investor for investing in companies with high book-to-market values (essentially the value placed on the company by accountants as a ratio relative to the value the public markets placed on the company, commonly expressed as B/M). The key point of the model is that it allows investors to weight their portfolios so that they have greater or lesser exposure to each of the specific risk factors, and therefore can target more precisely different levels of expected return.

So in order to test the explanatory power of different variants of Fama and French three factor model, the study under consideration constructed the six size and value sorted portfolios.

As size in terms of market cap and value premium in terms of book to market ratio are the two additional parameters considered in the Fama and French Three Factors Model to improve basic CAPM equation therefore the six portfolios constructed are of following types. S and B stands for the size of the firm. S is used for small cap firms which are small in size (market capitalization) and B is used for the large cap firms having big size (market capitalization). L, M and H stands for Low Book to Market ratio, Medium Book to Market ratio and High Book to Market ratio.

**SL:** Portfolio having small cap stocks with low book to market ratio

**SM:** Portfolio having small cap stocks with medium book to market ratio

**SH:** Portfolio having small cap stocks with high book to market ratio

**BL:** Portfolio having large cap stocks with low book to market ratio

**BM:** Portfolio having large cap stocks with medium book to market ratio

**BH:** Portfolio having large cap stocks with high book to market ratio

Every year the portfolios were revised in the month of July. Fama used these two factors to construct value and growth

portfolios and used excess returns of market proxy to model the stock return behaviour. He found that the three factors, market, size, and book to market ratio as the three main factors to determine the insidious risk in the returns. The following section has discussed the findings of the Fama and French three factor model in detail.

### Empirical Results

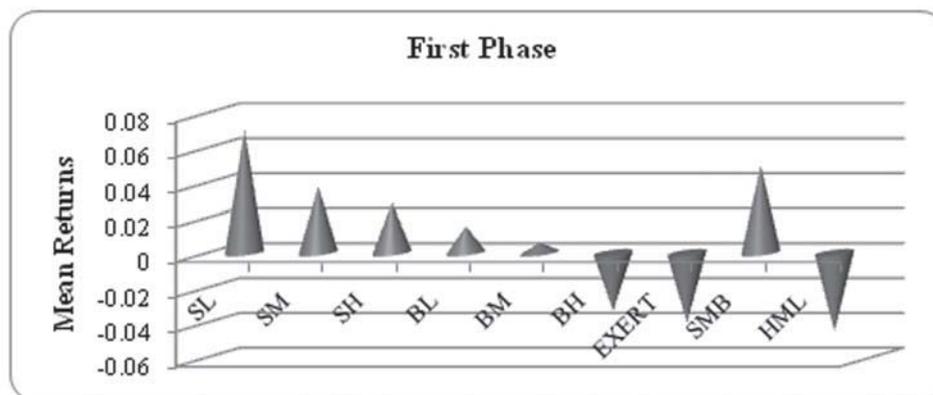
During the first phase of the study under consideration, it was interesting to see that there was huge difference in the mean returns of small and big sized portfolios. The mean returns reported by SL portfolio were highest and BH portfolio reported lowest mean returns with negative value. Even the BM portfolio also reported near to zero mean returns. No doubt the portfolios reporting the higher mean returns also showed higher level of volatility in terms of their standard deviation coefficients. SL & BL portfolios reported negatively skewed distribution of their returns. In addition to this, the kurtosis coefficient also reported leptokurtic curve for SH portfolio, rest all five portfolios reported platykurtic distribution curve. But the skewness and kurtosis coefficients have not resulted into a biased distribution of returns as the Jarque-Bera statistic reported normally distributed return series of all the six portfolios. Further, during the first phase the market and HML portfolios reported negative mean returns and higher level of volatility in comparison to SMB portfolio. But all the three factor portfolios showed normally distributed return series during the first phase (see Table 1). Figure 1, has depicted the patterns of mean return of all the six size and value portfolios.

**Table 1**  
**Descriptive Statistics for All Portfolios under Fama and French Three Model (First Phase)**

Portfolios	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera (prob.)
SL	0.0701	0.1254	0.1549	-0.3574	1.7891	0.7415 (0.6902)
SM	0.0377	0.022	0.1198	0.1386	2.8244	0.0404 (0.98)
SH	0.0286	-0.0224	0.1318	1.3353	4.0126	3.0589 (0.2167)
BL	0.015	0.0184	0.0933	-0.1425	1.6697	0.6941 (0.70680)
BM	0.0056	-0.0236	0.1109	0.961	2.7736	1.4046 (0.4955)
BH	-0.0331	-0.0372	0.0988	0.7297	2.9712	0.799 (0.6706)
EXRET	-0.0399	-0.0102	0.0863	-1.071	2.7474	1.7445 (0.418)
SMB	0.0496	0.0658	0.0442	-0.5278	2.0848	0.732 (0.6935)
HML	-0.0448	-0.067	0.0968	-0.1196	1.4421	0.9316 (0.6276)

\*Significant at 1% and \*\*Significant at 5% level of Significance.

**Figure 1**  
Mean Returns of All Portfolios under Fama and French Three Factor Model



The findings of the second phase were robust to see. During the bearish phase, all the portfolios except BH reported negative mean returns and lowest mean returns were reported by SL portfolio followed by BL. As the BH portfolio reported the highest and positive mean returns, it also showed highest level of volatility followed by SL, SH, SM, BM, & BL portfolios. All the portfolios showed negatively skewed distribution of their monthly return series. The BM and BH portfolios showed lesser peakedness in their monthly return distribution curve than the normal curve. But despite the

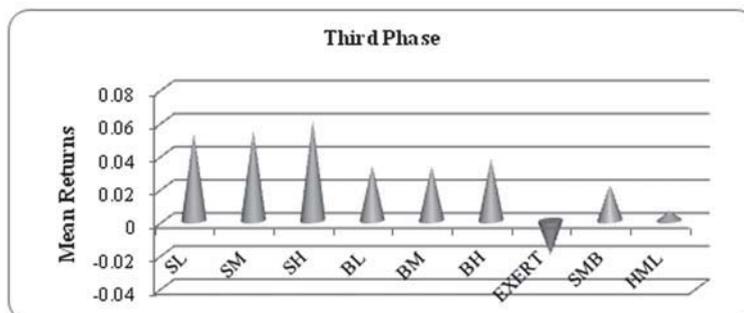
evidences of less than normally distributed return series by the skewness and kurtosis coefficient, the Jarque-Bera statistic reported less than normally distributed mean return series only for SL and BL portfolios. Rest all four portfolios followed normal distribution in the distribution of their monthly returns during the bear phase of the market. The three factor portfolios also reported negative mean returns but normally distributed returns during the bearish phase (see Table 2). The pattern of mean returns of the six portfolios during the bearish phase can be easily observed through Figure2.

**Table 2**  
Descriptive Statistics for All Portfolios under Fama and French Three Model (Second Phase)

Portfolios	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera (prob.)
SL	-0.0297	-0.0087	0.1104	-0.924	3.9438	6.4588** (0.0396)
SM	-0.0015	0.0019	0.0943	-0.0476	3.5802	0.5185 (0.7716)
SH	-0.0021	0.0053	0.1038	-0.0176	4.0976	1.8088 (0.4048)
BL	-0.0195	-0.013	0.0708	-1.4292	6.0377	26.097* (0.000)
BM	-0.0039	-0.0062	0.0862	-0.1671	2.3945	0.7175 (0.6986)
BH	0.0048	0.0188	0.119	-0.4613	2.7875	1.3446 (0.5105)
EXRET	-0.0893	-0.0767	0.088	-0.8328	3.252	4.2564 (0.1191)
SMB	-0.0049	0.0009	0.0345	0.05691	2.5194	0.3659 (0.8328)
HML	0.02599	0.02416	0.0701	-0.0435	3.7056	0.7582 (0.6845)

\*Significant at 1% and \*\*Significant at 5% level of Significance.

**Figure 2**  
Mean Returns of All Portfolios under Fama and French Three Factor Model



During the bull phase, some new evidences were depicted through the distribution of mean returns for various portfolios (Table 3). Although all the three small sized portfolios performed better than all big-sized portfolios, the highest mean returns were reported by SH portfolio instead of SL portfolio in case first phase of rising market. All the six portfolios reported negatively skewed distribution of their monthly returns during the third phase. The peakedness of the distribution curve of monthly returns was more than normal curve in case of all the portfolios except for SH

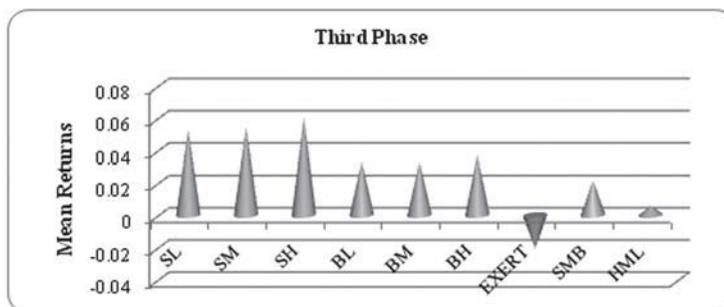
(platykurtic). But the Jarque-Bera statistic reported less than normally distributed returns for SL, BL, & BM portfolios. The mean returns distribution of all the six size and value sorted portfolios can be seen through Figure 3. In addition to this, during the third phase, the market factor portfolio continued to show negative mean returns with highest volatility and SMB factor portfolio reported highest mean returns with lowest volatility. Only the market factor portfolio depicted less than normal distribution of monthly returns during the bull phase.

**Table 3**  
Descriptive Statistics for All Portfolios under Fama and French Three Model (Third Phase)

Portfolios	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera (prob.)
SL	0.053	0.0693	0.0846	-1.0692	4.2054	14.311* (0.0008)
SM	0.0544	0.0667	0.087	-0.7278	3.391	5.3948 (0.0674)
SH	0.0605	0.0736	0.1039	-0.203	2.7123	0.5882 (0.7452)
BL	0.033	0.0456	0.0615	-0.9266	4.3256	12.331* (0.0021)
BM	0.0328	0.0443	0.0747	-0.6438	4.0915	6.7673** (0.0339)
BH	0.0371	0.0433	0.0879	-0.0427	3.366	0.3355 (0.8456)
EXRET	-0.0207	-0.0133	0.0697	-0.7813	4.6021	11.896* (0.0026)
SMB	0.0217	0.0204	0.0305	0.20702	3.116	0.4391 (0.8029)
HML	0.0059	4.8E-05	0.0482	0.4491	3.3268	2.1697 (0.338)

\*Significant at 1% and \*\*Significant at 5% level of Significance.

**Figure 3**  
Mean Returns of All Portfolios under Fama and French Three Factor Model



**Implication of Fama and French Three Factor Model during First Phase**

Table 4 has reported the outputs of all the variants of Fama and French model during the first phase of the study under consideration. The findings were really attention-grabbing. The market factor has not explained the variations in the return of all six size and value sorted portfolios. For big sized portfolios, the adj. R<sup>2</sup> was found even less than 10% when regressed on the EXRET. The highest adj. R<sup>2</sup> was found in case of BL portfolio explaining 43.53% variability in the monthly returns. The second factor alone, i.e., SMB showed

comparatively better power to explain the risk involved in the monthly returns of all portfolios. The SMB factor was found a better parameter to explain the return behaviour of portfolios with low book to market ratio (SL & BL). But for rest of four portfolios it showed more power than the EXRET factor but still having adj. R<sup>2</sup> with lower value. When the other variant of the model having HML factor alone was observed, it showed even more fascinating power to explain the return behaviour of various portfolios.

The magnitude of adj. R<sup>2</sup> was found very low and even with some negative signs (see Table) indicating that this factor

**Table 4 Fama and French Three Factor Model (First Phase)**

Explanatory Variable	Dependent Variable	a	b	SMB	HML	Adj R <sup>2</sup>
EXRET	S/L	0.0277	1.2455	-	-	0.4156
	Std.Error	0.0436	0.4815			
	S/M	-0.015	0.9903	-	-	0.4421
	Std.Error	0.0331	0.3655			
	S/H	-0.0253	0.9598	-	-	0.3059
	Std.Error	0.0409	0.4511			
	B/L	-0.0466	0.7637	-	-	0.4353
	Std.Error	0.0259	0.2853			
	B/M	-0.0581	0.7136	-	-	0.2089
	Std.Error	0.0367	0.4045			
SMB	B/H	-0.1056	0.4919	-	-	0.0679
	Std.Error	0.0354	0.391			
	S/L	-0.1811	-	3.2072	-	0.829
	Std.Error	0.0329		0.5085		
	S/M	-0.1613	-	2.1553	-	0.5844
	Std.Error	0.0399		0.6159		
S/H	-0.165	-	2.046	-	0.3923	
Std.Error	0.0534		0.824			

Explanatory Variable	Dependent Variable	a	b	SMB	HML	Adj R <sup>2</sup>
	B/L	-0.1649	-	1.7709	-	0.6729
	Std.Error	0.0275		0.4239		
	B/M	-0.1638	-	1.5578	-	0.2971
	Std.Error	0.0482		0.7443		
	B/H	-0.1787	-	1.0798	-	0.1236
	Std.Error	0.048		0.7401		
<b>HML</b>	S/L	-0.0597	-	-	-0.8411	0.1774
	Std.Error	0.0518			0.5095	
	S/M	-0.0601	-	-	-0.1272	-0.1307
	Std.Error	0.0472			0.4641	
	S/H	-0.0498	-	-	0.3064	-0.0854
	Std.Error	0.0512			0.5031	
	B/L	-0.095	-	-	-0.4002	0.0567
	Std.Error	0.0334			0.3288	
	B/M	-0.0925	-	-	-0.134	-0.1273
	Std.Error	0.0438			0.4306	
	B/H	-0.1049	-	-	0.4523	0.0811
	Std.Error	0.0352			0.3462	
<b>EXRET-SMB</b>	S/L	-0.2022	-0.1803	3.488	-	0.8055
	Std.Error	0.0644	0.4609	0.8998		
	S/M	-0.1261	0.3007	1.6868	-	0.538
	Std.Error	0.0771	0.5519	1.0773		
	S/H	-0.1252	0.3398	1.5167	-	0.3149
	Std.Error	0.1039	0.7436	1.4516		
	B/L	-0.1521	0.1097	1.6	-	0.6234
	Std.Error	0.054	0.3865	0.7545		
	B/M	-0.139	0.2115	1.2283	-	0.193
	Std.Error	0.0947	0.6778	1.3231		
	B/H	-0.1625	0.139	0.8632	-	-0.0153
	Std.Error	0.0946	0.677	1.3216		
<b>EXRET-HML</b>	S/L	-0.006	1.0776	-	-0.6022	0.4979
	Std.Error	0.0465	0.4608		0.411	
	S/M	-0.0094	1.0177	-	0.0985	0.3571
	Std.Error	0.0409	0.4051		0.3613	
	S/H	0.0057	1.1141	-	0.5534	0.3956
	Std.Error	0.0439	0.4346		0.3876	
	B/L	-0.0604	0.6951	-	-0.2461	0.4238
	Std.Error	0.03	0.2975		0.2654	
	B/M	-0.0566	0.7208	-	0.0258	0.0777
	Std.Error	0.0455	0.4509		0.4021	
	B/H	-0.0721	0.6587	-	0.5983	0.3416
	Std.Error	0.0343	0.3393		0.3026	
<b>SMB-HML</b>	S/L	-0.1808	-	2.9577	-0.2693	0.832
	Std.Error	0.0327		0.5563	0.2542	
	S/M	-0.1617	-	2.4819	0.3526	0.6044
	Std.Error	0.0389		0.6631	0.303	

Explanatory Variable	Dependent Variable	a	b	SMB	HML	Adj R <sup>2</sup>
	S/H	-0.166	-	2.8379	0.855	0.7199
	Std.Error	0.0363		0.6174	0.2821	
	B/L	-0.1648	-	1.7057	-0.0705	0.6243
	Std.Error	0.0294		0.5013	0.2291	
	B/M	-0.164	-	1.7464	0.2036	0.2144
	Std.Error	0.051		0.8684	0.3967	
	B/H	-0.1796	-	1.8255	0.8052	0.6575
	Std.Error	0.03		0.5106	0.2333	
<b>EXRET-SMB -HML</b>	S/L	-0.1936	-0.1092	3.1376	-0.2588	0.8005
	Std.Error	0.0659	0.4731	0.9874	0.2807	
	S/M	-0.1372	0.2094	2.1369	0.3324	0.5383
	Std.Error	0.0779	0.5592	1.1669	0.3317	
	S/H	-0.1533	0.1078	2.6603	0.8446	0.6667
	Std.Error	0.0732	0.5257	1.097	0.3119	
	B/L	-0.1493	0.1326	1.4872	-0.0833	0.5578
	Std.Error	0.0591	0.4245	0.8859	0.2519	
	B/M	-0.1453	0.1598	1.4831	0.1882	0.066
	Std.Error	0.1029	0.739	1.5422	0.4385	
	B/H	-0.1895	-0.0844	1.9645	0.8133	0.5921
	Std.Error	0.0606	0.4349	0.9076	0.258	

could not be relied during the first phase of rising market to study the variability in the return of the various portfolios. Thus the above discussion concluded that none of the three factors stated above, when considered individually, could explain the variability in the mean return behaviour of all the six portfolios. The following paragraph will discuss the changes in the power of coefficient of determination when two factors were considered jointly to measure the level of risk in the mean returns of various portfolios.

The explanatory power of EXRET increased when SMB factor was combined with the regression model to study the variation in the returns of various portfolios. As depicted in the table, both these factors explained 80.55% variability for SL portfolio, but still it has not explained the cause of variability in big sized portfolios significantly. The power of EXRET and HML factor was found comparatively better in explaining the variability in the returns of small-sized portfolios (adj. R<sup>2</sup> ranged from 35.71% to 49.79%) rather than for big-sized portfolios (adj. R<sup>2</sup> ranged from 7.77% to 42.38%). When two factors were jointly taken to determine the return variability of all the portfolios, then SMB & SML factors jointly showed greater power than other two factors stated above.

The SMB & HML factors explained 21.44% to 83.2% variability in the monthly returns of the all size and value

sorted portfolios. Further, these two factors were better in explaining the return behaviour of small sized portfolios in comparison to large ones.

In addition to this, the combination of all the three factors (EXRET, SMB, & HML) jointly produced better results but less significant than the explained by SMB & HML factors jointly. All the three factors jointly were found very poor in explaining the variability in the returns of BM portfolio. The highest value of adjusted R<sup>2</sup> was reported in case of SL portfolio. Hence it can be concluded that during the first phase of the market, the size and book to market ratio jointly explained the risk involved in the return series of all the size and value sorted portfolios in a better way than other variants of the Fama and French Model.

#### **Implication of Fama and French Three Factor Model during Second Phase**

During the bear phase of the market, all the variants of the Fama and French three factor model showed different results than the first phase. All these findings are depicted in Table 5. As reported in the Table, the EXRET factor alone showed good explanatory power to explain the cause of variability in the monthly returns of various portfolios. The adjusted R<sup>2</sup> co-efficient ranged from 57.86% to 82.91%.

## 5 Fama and French Three Factor Model (Second Phase)

Explanatory Variable	Dependent Variable	a	B	SMB	HML	Adj R <sup>2</sup>
<b>EXRET</b>	S/L	0.026701	1.065866	-	-	0.607298
	Std.Error	0.01787	0.143557			
	S/M	0.01134	0.964567	-	-	0.73989
	Std.Error	0.011974	0.096188			
	S/H	0.007439	0.927418	-	-	0.578686
	Std.Error	0.01648	0.132389			
	B/L	-0.02266	0.78517	-	-	0.829179
	Std.Error	0.007477	0.060062			
	B/M	0.001515	0.882032	-	-	0.751981
	Std.Error	0.010609	0.085222			
<b>SMB</b>	B/H	0.026701	1.065866	-	-	0.607298
	Std.Error	0.01787	0.143557			
	S/L	-0.06864	-	-0.04001	-	-0.02927
	Std.Error	0.020372		0.593208		
	S/M	-0.06956	-	1.061388	-	0.113571
	Std.Error	0.015565		0.453227		
	S/H	-0.0715	-	0.784806	-	0.03743
	Std.Error	0.01754		0.510757		
	B/L	-0.08989	-	0.584755	-	0.043687
	Std.Error	0.012457		0.362727		
<b>HML</b>	B/M	-0.07602	-	0.245418	-	-0.02013
	Std.Error	0.01515		0.44115		
	B/H	-0.06864	-	-0.04001	-	-0.02927
	Std.Error	0.020372		0.593208		
	S/L	-0.05969	-	-	0.965664	0.3021
	Std.Error	0.017739			0.240289	
	S/M	-0.08565	-	-	0.418669	0.062524
	Std.Error	0.016926			0.229282	
	S/H	-0.09524	-	-	0.765128	0.233131
	Std.Error	0.016556			0.224262	
<b>EXRET-SMB</b>	B/L	-0.09376	-	-	0.038644	-0.02809
	Std.Error	0.013658			0.185009	
	B/M	-0.09072	-	-	0.519168	0.14231
	Std.Error	0.01469			0.198985	
	B/H	-0.09354	-	-	0.965664	0.3021
	Std.Error	0.017739			0.240289	
	S/L	0.0319	1.1763	-0.9402	-	0.6667
	Std.Error	0.0165	0.1386	0.3538		
	S/M	0.0093	0.9228	0.3551	-	0.7470
	Std.Error	0.0118	0.0994	0.2538		
S/H	0.0069	0.9177	0.0824	-	0.5666	
Std.Error	0.0168	0.1407	0.3592			
B/L	-0.0225	0.7872	-0.0177	-	0.8240	
Std.Error	0.0076	0.0638	0.1630			
B/M	0.0041	0.9374	-0.4720	-	0.7766	
Std.Error	0.0101	0.0847	0.2163			
B/H	0.0319	1.1763	-0.9402	-	0.6667	
Std.Error	0.0165	0.1386	0.3538			

Explanatory Variable	Dependent Variable	a	B	SMB	HML	Adj R <sup>2</sup>
<b>EXRET-HML</b>	S/L	0.0013	1.0588	-	0.9534	0.9283
	Std.Error	0.0079	0.0613		0.0769	
	S/M	0.0004	0.9615	-	0.4075	0.8217
	Std.Error	0.0102	0.0796		0.0999	
	S/H	-0.0126	0.9219	-	0.7545	0.8289
	Std.Error	0.0108	0.0843		0.1059	
	B/L	-0.0234	0.7849	-	0.0295	0.8248
	Std.Error	0.0078	0.0608		0.0763	
	B/M	-0.0120	0.8783	-	0.5090	0.9145
	Std.Error	0.0064	0.0500		0.0628	
<b>SMB-HML</b>	B/H	0.0013	1.0588	-	0.9534	0.9283
	Std.Error	0.0079	0.0613		0.0769	
	S/L	-0.0942	-	1.0171	1.1852	0.3549
	Std.Error	0.0170		0.5225	0.2570	
	S/M	-0.0869	-	1.7769	0.8022	0.3675
	Std.Error	0.01390		0.4260	0.2095	
	S/H	-0.0965	-	1.8171	1.1573	0.5080
	Std.Error	0.0132		0.4063	0.1998	
	B/L	-0.0943	-	0.7668	0.2041	0.0453
	Std.Error	0.0131		0.4033	0.1983	
<b>EXRET-SMB-HML</b>	B/M	-0.0913	-	0.8774	0.7085	0.2150
	Std.Error	0.0140		0.4306	0.2118	
	B/H	-0.0942	-	1.0171	1.1852	0.3549
	Std.Error	0.0171		0.5225	0.2570	
	S/L	0.0012	1.0588	0.0001	0.9534	0.9261
	Std.Error	0.0083	0.0661	0.1879	0.0882	
	S/M	-0.0104	0.8468	0.9635	0.6168	0.9057
	Std.Error	0.0077	0.0615	0.1747	0.0820	
	S/H	-0.0246	0.7966	1.0519	0.983	0.9148
	Std.Error	0.0079	0.0632	0.1796	0.0843	
<b>EXRET-SMB-HML</b>	B/L	-0.0236	0.7832	0.0145	0.0327	0.8193
	Std.Error	0.0082	0.0656	0.1864	0.0874	
	B/M	-0.0124	0.8737	0.0381	0.5173	0.9120
	Std.Error	0.0067	0.0539	0.1531	0.0718	
	B/H	0.0012	1.0588	0.0001	0.9534	0.9261
Std.Error	0.0083	0.0661	0.1879	0.0882		

Among the big sized portfolios, it significantly explained the variability in the returns of BL and BM portfolios. During the bear market the investors have not relied on SMB and HML factor as much as they relied on the market factor. The SMB & HML factors individually showed very lesser explanatory power to determine the variability in the returns of all size and value sorted portfolios. The SMB factor had less than 5% explanatory power in case of five out of six

portfolios. On the other hand, the HML factor alone has not explained more than 30% variability in the returns.

But a significant improvement could be noticed in the explanatory power of the regression models when two factors jointly were considered to study the risk in the monthly returns of various portfolios. As depicted in Table, when EXRET and SMB factors were taken together, there was an increase in the value of adjusted R<sup>2</sup> for all the portfolios. But

this increase was very high when the joint effect of EXRET and HML was studied. The explanatory power of the model increased with a huge difference. The  $R^2$  was found more than 80% for three portfolios and more than 90% for other three portfolios. It showed that the market factor and book to market ratio jointly explained the variability in the monthly returns of all the portfolios in a more powerful manner.

However the findings obtained through joint effect of SMB and HML factors were not found significant enough to explain the risk involved in the cross section of mean returns. Both these factors individually and jointly had poor power to explain the deviations in the return series of various portfolios. But the findings obtained through the Fama and French three factor variant was very impressive. In exception with BL portfolio (81.93%), it explained more than 90% variation in rest all the portfolios. The three factors taken

together in the regression model definitely increased its power to determine the deviations in the monthly returns of all the six size and value sorted portfolios. Therefore it can be stated that during the bear phase also the three factors taken together in the regression model will definitely prove better than other variants of the mode to explain the variations in the returns of various portfolios.

#### Implication of Fama and French Three Factor Model during Third Phase

Table 6 has reported the findings of all variants of Fama and French three factor model for the third phase of the study under consideration. When all the factors were regressed individually, the market factor (EXRET) reported better explanatory power than other two factors (SMB & HML). As reported in the Table, when EXRET factor was taken alone, the adjusted  $R^2$  ranged from 56.58% to 89.68%.

**Table 6 Fama and French Three Factor Model (Third Phase)**

Explanatory Variable	Dependent Variable	a	B	SMB	HML	Adj R <sup>2</sup>
<b>EXRET</b>	S/L	0.002	1.0641	-	-	0.6997
	Std.Error	0.0067	0.0928			
	S/M	0.0201	1.1095	-	-	0.7542
	Std.Error	0.0061	0.0844			
	S/H	<b>0.0271</b>	<b>1.1478</b>	-	-	<b>0.5658</b>
	Std.Error	<b>0.0096</b>	<b>0.1335</b>			
	B/L	-0.007	0.8438	-	-	0.8968
	Std.Error	0.0028	0.0382			
	B/M	-0.004	1.0053	-	-	0.8433
	Std.Error	0.0042	0.0578			
	B/H	0.0267	1.0659	-	-	0.6073
	Std.Error	0.0179	0.1436			
<b>SMB</b>	S/L	-0.046	-	1.2101	-	0.1593
	Std.Error	0.0132		0.3552		
	S/M	-0.042	-	1.8103	-	0.3748
	Std.Error	0.0114		0.3079		
	S/H	-0.047	-	2.3086	-	0.4334
	Std.Error	0.013		0.3487		
	B/L	-0.041	-	0.7613	-	0.1242
	Std.Error	0.0095		0.2546		
	B/M	-0.045	-	0.9554	-	0.1306
	Std.Error	0.0116		0.3115		
	B/H	-0.069	-	-0.04	-	-0.029
	Std.Error	0.0204				

Explanatory Variable	Dependent Variable	a	B	SMB	HML	Adj R <sup>2</sup>
<b>HML</b>	SL	-0.06	-	-	1.1553	0.3862
	Std.Error	0.0092			0.1919	
	S/M	-0.007	-	-	0.7102	0.133
	Std.Error	0.011			0.2293	
	S/H	-0.005	-	-	1.4931	0.454
	Std.Error	0.0104			0.2165	
	B/L	-0.026	-	-	0.264	0.0246
	Std.Error	0.0082			0.17	
	B/M	-0.028	-	-	0.5986	0.1278
	Std.Error	0.0095			0.1973	
	B/H	-0.094	-	-	0.9657	0.3021
	Std.Error	0.0177			0.2403	
<b>EXRET-SMB</b>	SL	-0.01	0.9956	0.5088	-	0.7231
	Std.Error	0.0083	0.0937	0.2142		
	S/M	-0.008	0.9565	1.1365	-	0.8925
	Std.Error	0.0052	0.0587	0.1342		
	S/H	-0.013	0.9246	1.6573	-	0.7723
	Std.Error	0.009	0.1016	0.2324		
	B/L	-0.011	0.819	0.1844	-	0.9026
	Std.Error	0.0035	0.039	0.0892		
	B/M	-0.01	0.9685	0.2733	-	0.8517
	Std.Error	0.0052	0.0591	0.1352		
	B/H	0.032	1.1763	-0.94	-	0.6667
	Std.Error	0.0166	0.1386	0.3538		
<b>EXRET-HML</b>	SL	-0.006	0.9324	-	0.8546	0.9083
	Std.Error	0.0038	0.0526		0.0761	
	S/M	0.0167	1.0524	-	0.3708	0.7896
	Std.Error	0.0057	0.0801		0.1159	
	S/H	0.0164	0.9657	-	1.1816	0.844
	Std.Error	0.0059	0.0821		0.1187	
	B/L	-0.007	0.8452	-	-0.009	0.895
	Std.Error	0.0028	0.0395		0.0572	
	B/M	-0.006	0.9608	-	0.2887	0.8733
	Std.Error	0.0038	0.0533		0.0771	
	B/H	0.0013	1.0589	-	0.9535	0.9284
	Std.Error	0.0079	0.0613		0.077	
<b>SMB-HML</b>	SL	-0.042	-	0.7272	1.0173	0.4342
	Std.Error	0.0109		0.3055	0.1932	
	S/M	-0.04	-	1.6191	0.4027	0.4083
	Std.Error	0.0112		0.314	0.1986	
	S/H	-0.042	-	1.7584	1.1592	0.6866
	Std.Error	0.0097		0.2719	0.172	
	B/L	-0.04	-	0.699	0.1313	0.1178
	Std.Error	0.0095		0.2679	0.1695	
	B/M	-0.043	-	0.7378	0.4585	0.1938
	Std.Error	0.0112		0.3144	0.1989	
	B/H	-0.094	-	1.0172	1.1852	0.355

Explanatory Variable	Dependent Variable	a	B	SMB	HML	Adj R <sup>2</sup>
	Std.Error	0.0171		0.5226	0.2571	
	S/L	-0.01	0.9131	0.1739	0.8278	0.9098
	Std.Error	0.0047	0.054	0.1262	0.0779	
	S/M	-0.008	0.9357	1.0522	0.2086	0.9025
	Std.Error	0.0049	0.0565	0.132	0.0815	
	S/H	-0.013	0.8262	1.2577	0.9878	0.9591
	Std.Error	0.0038	0.0435	0.1017	0.0628	
	B/L	-0.011	0.8229	0.2004	-0.039	0.9017
	Std.Error	0.0035	0.0396	0.0926	0.0572	
	B/M	-0.01	0.9423	0.1669	0.263	0.8749
	Std.Error	0.0048	0.0549	0.1282	0.0792	
	B/H	0.0013	1.0589	0.0001	0.9535	0.9261
	Std.Error	0.0083	0.0662	0.1879	0.0882	

The market factor was found a better way to explain the variability in the average returns of the large sized portfolios in comparison to small ones. The second factor, SMB, was found poor in explaining the deviations in the mean returns of all the six portfolios and even poorer for large sized portfolios. The adjusted R<sup>2</sup> reported by HML factor showed more power to explain the deviations in the returns but these were much lesser than market factor. Therefore none of three factors individually found a powerful tool to explain the risk involved in the cross section of average returns. The results obtained through the two factors taken jointly were better than individual factor based models. Amongst the three variants of, EXRET-SMB, EXRET-HML, & SMB-HML, EXRET-HML based regression model gave best explanation for the variability in the cross section of average returns. As depicted in the Table, the EXRET-SMB regression model showed the value of adjusted R<sup>2</sup> coefficient in the range of 66.67%-90.26%. The higher range was found in case of small-sized portfolios. On the other hand, the EXRET-HML model explained the variations in the mean returns of all the portfolios in the range of 78.96% - 92.84%, which was found significant enough and could be relied on for all the size and value sorted portfolios. But the power of SBM-HML regression model was very fragile in comparison to above two variants as it has not explained the variation in the mean returns by more than 68.66% for small sized portfolios and by 35.5% for big sized portfolios.

In addition to this, the relevance and importance of Fama and French three factors was further proved when the results of regression model based upon these three factors jointly were

observed. As depicted in the Table, it explained 95.91% variations in the returns of SH portfolio, 92.61% for BH portfolio. It was only in case of BM portfolio that adjusted R<sup>2</sup> was found 87.49% but for rest of the portfolios it explained more than 90% risk involved in the mean returns. Hence the magnitude of explanatory power of three factor model was found much more than other variants of the model.

To conclude it can be said that in case of a consistent rising market also, instead of considering any single or two factors, all the three factors regressed jointly will be really helpful to the investor in studying the return behaviour of various portfolios.

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# Impact: Job Enrichment in Organizational Citizenship Behaviour

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## A b s t r a c t

The present study was conducted in Iran and aimed to analyze the relationship between job enrichment and organizational citizenship behaviour of 150 employees of ten SMEs in Salmanshahr industrial state in Mazandaran, a northern province of Iran. A total of 150 questionnaires were distributed among the employees and 103 usable questionnaires were returned. The research method used for this study is descriptive-correlation. Further, the analysis was carried out utilizing Structural Equation Modeling (SEM) methodology by LISREL 8.8 software. The factors analysis and the findings show that job enrichment has a significant positive influence on employees' organizational citizenship behaviour.

**Key words:** Job enrichment, organizational citizenship behavior, OCB, Iran



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Successful organizations enjoy employees who go beyond their formal job responsibilities and freely give off their time and energy to succeed at the assigned job (Jahangir et al., 2004). According to Podsakoff et al. (2000), Organizational Citizenship Behaviour (OCB) helps improve the organizational performance of firms. Since, this is the main aim of any organization, it is necessary for managers to understand how various variables influence organizational citizenship behaviour.

Today's organizations could not survive or prosper in such competitive environment without their personnel behaving as good citizens by engaging in all sorts of positive behaviours (Davoudi, 2012). Organ (1988) argued that OCB is held to be vital to the survival of an organization. Organ further elaborated that OCB can maximize efficiency and productivity of both the employee and the organization that ultimately

contribute to the effective functioning of an organization. Furthermore, it is widely accepted among contemporary OB and HRM theorists, that OCB have an accumulative positive influence on organizational functioning (Wagner & Rush, 2000).

The vast majority of OCB researches have focused on the effects of OCB on individual and organizational performance; but the lack of sufficient researches focusing on factors affects OCB (Davoudi, 2012). But, this paper focused on job enrichment and its effect on OCB. There is little attention given to research on the relationship between job enrichment and OCB. Thus, the present study attempted to propose a framework on the mentioned topic in Iran.

### Literature Review

Despite the growing literature on job enrichment and OCB, the author of this paper couldn't find any study exploring the relationship between these two variables. Thus, in the following sections, the author suffices to just explaining research variables and then show their relationship by proposing a model.

### Job Enrichment

Job enrichment is a managerial attempt to motivate employees by giving them enough opportunity to use all their abilities. In 1950, this new concept emerged and was being applied in job designing method. The term was introduced by Fredrick Herzberg from his work on hygiene & motivational factors. Job enrichment refers to add factors to one's job to make it more pleasurable. Any organization can benefit from consequences of job enrichment such as increasing in the level of employees' job satisfaction, organizational commitment, individual productivity, and decreasing in the level of absenteeism, turnover intentions, and social loafing.

### Organizational Citizenship Behaviour

Organ et al (2005) defined OCB as behaviour that is discretionary, not directly or explicitly recognized by a formal reward system and that in aggregate promotes the effective functioning of an organization. According to Organ (1988), OCBs are behaviours that employees are not explicitly rewarded for exhibiting nor punished for not exhibiting; and

are behaviors for which employees do not receive training to perform. According to Schnake (1991), pro-social ethical behaviours such as helping new employees to understand the internal workings of the organization, assisting co-workers complete their jobs, attending meetings and volunteering to do things in excess of job prescriptions are some of the behaviours that can be associated with OCB. Further, according to Moorman (1991), these non-traditional behaviours are on-the-job behaviours that are not usually captured by traditional job descriptions.

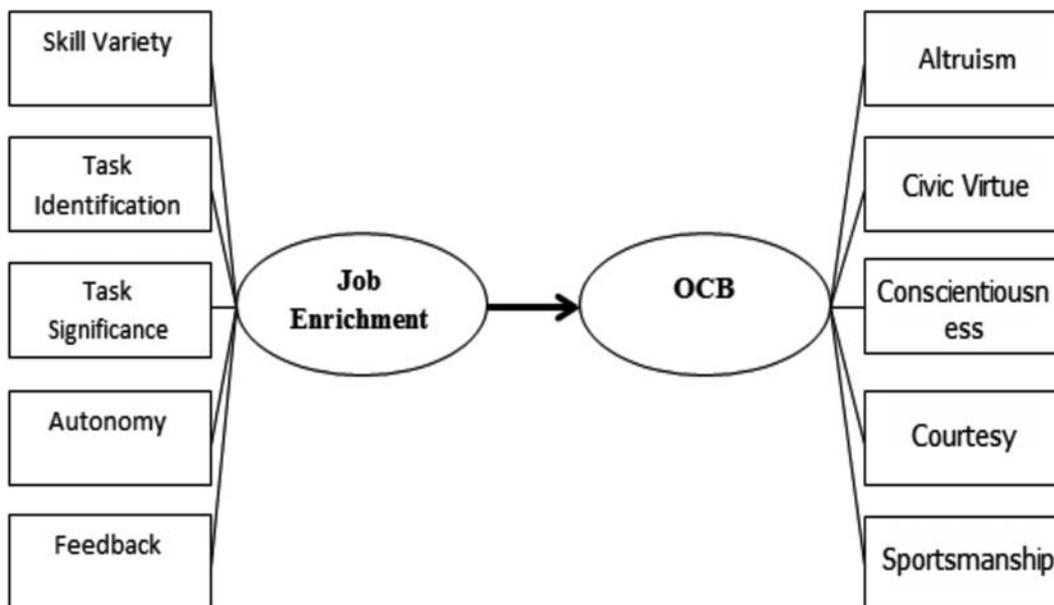
### Research Hypothesis & Model

Figure 1 shows the conceptual model of the study which involved the relationship between job enrichment as independent variable and OCB as dependent variable. It is important to note that, the author used five dimensions of Hackman & Oldham (1976) for measuring job enrichment as follows: (1) Skill variety: is the extent to which a job allows various skills and talents that an employee should utilize to do his job, (2) Task identity: is the extent that a job allows completion of a whole work from beginning to the end, (3) Task significance: refers to the effect of the job on lives or work of others, (4) Autonomy: refers to the discretion that an employee has in executing his job, (5) Feedback: refers to the extent work activities give an employee clear information about the effectiveness of his performance.

Further, we used five dimensions introduced by Organ (1990) for measuring OCB as follows: (1) Altruism: refer to voluntary actions that help a fellow employee in work-related problems, (2) Civic virtue: refers to voluntary participation in, and support of organizational functions of both a professional and social nature, (3) Conscientiousness: refers to a pattern of going well beyond minimally required role and task requirements, (4) Courtesy: refers to the discretionary enactment of thoughtful and considerate behaviors that prevent work-related problems for others, (5) Sportsmanship: refers to a willingness to tolerate the inevitable inconveniences and impositions that result in an organization without complaining and doing so with a positive attitude.

**H:** Job enrichment has a significant positive influence on employees' organizational citizenship behavior.

Figure 1: Research Proposed Model



**Methodology**

**Statistical Population**

Statistical population of this study includes 150 employees of ten SMEs in Salmanshahr industrial state in Mazandaran,

a northern province of Iran. A total of 150 questionnaires were distributed among the employees and 103 usable questionnaires were returned. Table 1 shows the descriptive statistics of the respondents.

Table 1: Description of the Respondents

Item	Description	Frequency	Percentage
Gender	Male	76	74%
	Female	27	26%
Age	Below 30	39	38%
	31-50	54	52%
	Above 51	10	10%
Education	Diploma	18	17%
	STP	28	27%
	Bachelor	51	50%
	Master & PhD	6	6%

**Instrument**

In order to collect the necessary data, a questionnaire was used to test the hypothesis of the study. The questionnaire consists of two parts; first part consisted of three questions which is shown in table 1 and relates to descriptive statistics

of respondents; and the second part consisted of 44 questions that measured the research variables; 20 questions used for measuring job enrichment, and 24 questions developed by Podsakoff et al (1990) for measuring OCB. We used five-point Likert type scale for all the items. Response categories range from 1 (strongly disagree) to 5 (strongly agree).

**Reliability & Validity**

The summary statistics of formal survey are shown in Table 2. For reliability evaluation we utilized Cronbach’s alpha.

The Cronbach’s alpha reliability of all variables is more than 0.7 ( $\hat{\alpha} > 0.7$ ), which indicates all scales demonstrate good reliability.

**Table 2: The Summary Statistics of Formal Survey**

	N	Mean	Std. Deviation	Cronbach’s Alpha
Skill Variation	4	3.1529	0.75182	0.762
Task Identity	4	3.6626	0.72483	0.784
Task Significance	4	3.7985	0.75086	0.811
Autonomy	4	3.8228	0.74313	0.796
Feedback	4	4.1748	0.54664	0.803
<b>Job Enrichment</b>	<b>20</b>	<b>.....</b>	<b>.....</b>	<b>0.874</b>
Altruism	5	3.6641	0.97144	0.745
Civic Virtue	4	3.818	0.79072	0.795
Conscientiousness	5	4.1592	0.56385	0.768
Courtesy	5	4.068	0.60167	0.823
Sportsmanship	5	4.1029	0.61984	0.806
<b>Organizational Citizenship Behaviour</b>	<b>24</b>	<b>.....</b>	<b>.....</b>	<b>0.839</b>

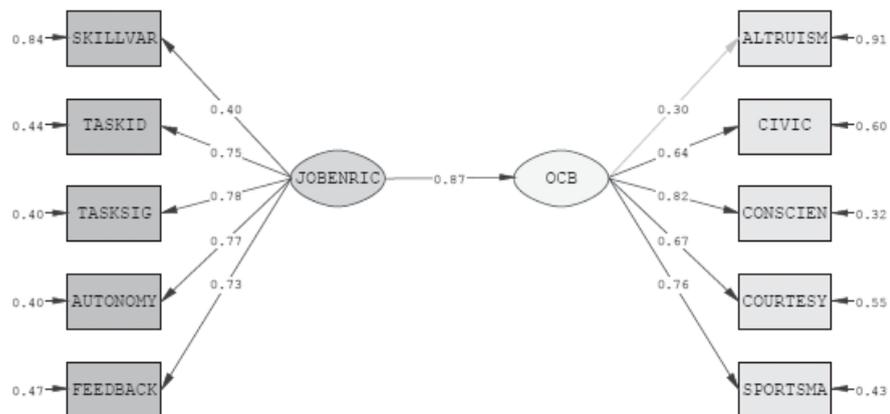
For evaluating the validity of the questionnaires, the author used content validity and construct validity. In order to test the content validity after devising a framework for the questionnaire, the author asked 15 experts to modify it if needed. These experts evaluated all the implemented criteria in the questionnaire and modified it. Moreover, in this research the author used factor analysis for considering the structure of research. Confirmatory factor analysis was used to investigate the construction of the questionnaire. Factor analysis depicted that all the mentioned criteria have been measured in these questionnaires. It is important to note that for the X model and our Y model the fitness indices were as

follows: Chi-square/df < 3, RMSEA < 0.1, and P-value < 0.05 which show that the selected indicators are good representatives for each dimensions of research variables.

**Results**

In this study, the relationship between job enrichment and OCB was tested using the SEM technique. For testing the hypothesis, the author performed the structural model applying five dimensions of job enrichment and five dimensions of OCB. Figure 2 and 3 shows the results of the SEM analysis. Fitness’s indices also show good fitness of the Structural model (table 3)

**Figure 2: Structural Equation Model**



Chi-Square=64.85, df=34, P-value=0.00111, RMSEA=0.094

Figure 3: Output of T-value Test

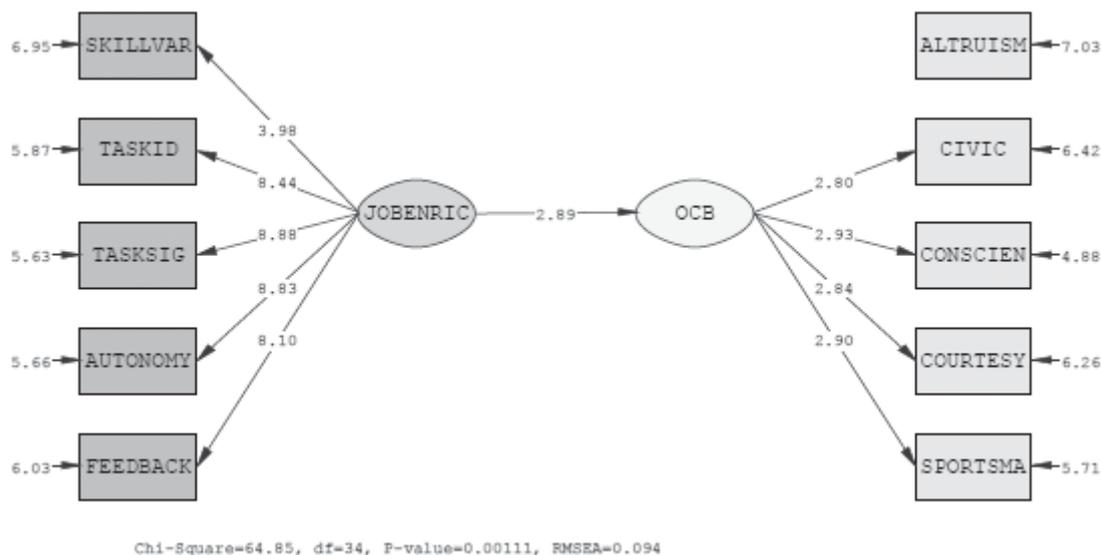


Table 3: The Structural Model Fitness Indices

Fitness Indices	Measure of Index	Appropriate Value
Chi-Square/df	1.9073	< 3
p-value	0	< 0.05
Root Mean Square Error of Approximation (RMSEA)	0.94	< 0.10
Comparative Fit Index (CFI)	0.97	> 0.90
Incremental Fit Index (IFI)	0.97	0 < & < 1
Relative Fit Index (RFI)	0.91	> 0.90
Normed Fit Index (NFI)	0.93	> 0.90
Non-Normed Fit Index (NNFI)	0.96	> 0.90

Based on the results of SEM analysis, research hypothesis is confirmed. Table 4 summarizes the hypothesis test results in

terms of path coefficients (standardized) and T-value as follows:

Table 4: The Results of the Hypothesis Test

N	Hypothesis	Path-Coefficient	T-value	Result
H	Job Enrichment '!' Organizational Citizenship Behavior	0.87	2.89	Accepted

Moreover, table 5 shows the results of one sample t-test. As the scale used for gathering data was five-point Likert type, number 3 was selected as the Test Value of the analysis.

**Table 5: One Sample T-Test**

	Test Value = 3					
					95% Confidence Interval of the Difference	
					Lower	Upper
Skill Variety	2.064	102	0.042	0.15291	0.006	0.2998
Task Identification	9.278	102	0	0.66262	0.521	0.8043
Task Significance	10.793	102	0	0.79854	0.6518	0.9453
Autonomy	11.237	102	0	0.82282	0.6776	0.9681
Feedback	21.81	102	0	1.17476	1.0679	1.2816
Altruism	6.938	102	0	0.66408	0.4742	0.8539
Civic Virtue	10.499	102	0	0.81796	0.6634	0.9725
Conscientiousness	20.865	102	0	1.15922	1.049	1.2694
Courtesy	18.014	102	0	1.06796	0.9504	1.1856
Sportsmanship	18.058	102	0	1.10291	0.9818	1.2241

## Discussion

The aim of the present study is to investigate the relationship between job enrichment and OCB of employees in ten SMEs in Iran. Past studies examined the relationship between these two factors with other factors, but, lack of sufficient research examining these two factors with each other was the main reason this research was carried out. Further, because of the positive impact of OCB, examining factors contribute to the improvement in OCB have been of particular interest to researchers which was another reason this research was carried out.

Factor analysis and the findings show that job enrichment has a significant positive influence on employees' OCB. The results of the current study provide further insight for managers of organizations on enriching organizational activities to achieve competitive advantages through employees. As can be inferred from structural equation model of research, Task Significance (factor loading: 0.78), Autonomy (factor loading: 0.77), Task Identification (factor loading: 0.75), Feedback (factor loading: 0.73), and Skill Variety (factor loading: 0.40) have the most to the least influence on Employees' OCB, respectively. Therefore, the results of the present paper helping managers to focus on dimensions have more impact on employees' OCB. Furthermore, according to

table 5, all dimensions of research variables have suitable status. Table 5 shows that the selected SMEs have enriched jobs and also their employees engage in organizational citizenship behaviour.

Moreover, the present research has some limitations. The first limitation relates to all questionnaire surveys that some people deny filling questionnaires or do not answer the questions carefully. Another limitation was about cause and effect relationship between research variables. Maybe there are other variables that affect the relationship between job enrichment and OCB. Thus, future research can examine other variables such as job satisfaction, organizational commitment, and organizational justice, and their impact on OCB to expand and refine research model.

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**Book Title :** Customer Service - Building Successful Skills for the Twenty First Century  
**Author :** Robert W.Lucas  
**Edition :** Third 2012  
**ISBN 13 :** 978-1-25-902567-9  
**ISBN 10 :** 1-25-902567-5  
**Pages :** 416  
**Publisher :** Tata Mc Graw Hill Education Pvt. Ltd., New Delhi

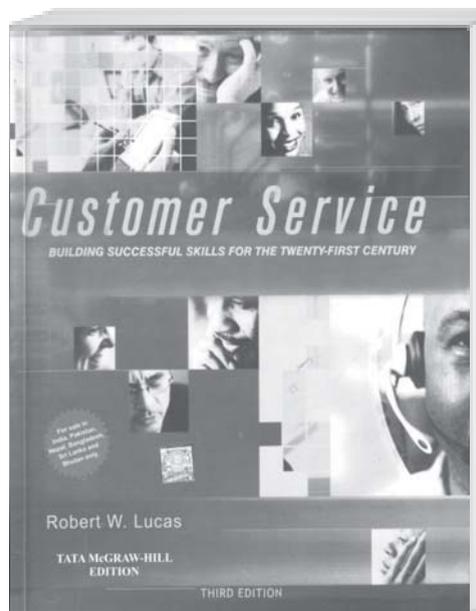
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**E**ffectively dealing with both internal and external customers is a sine qua non for survival, not to speak of success, for any business. Needless to say, customer service concepts and skills are essential for every one working in business and industry.

“Customer Service - building successful skills for the twenty first century” by Robert W Lucas, now in its third edition, comes handy for service personnel to gain a crucial set of customer service skills, most relevant in this technology-accentuated age. This book comprehensively covers the various aspects of the much-needed skills in the modern world viz. listening techniques, verbal and non verbal communication, dealing with different customer types and using technology for a variety of complex customer situations. Third edition updates the earlier edition of the book by adding meaningful insights for customer service supervisory personnel.

The book has fourteen chapters arranged into five parts. First part, consisting of two chapters, highlight the imperative for service providers to fine-tune the policies, procedures and systems to create a service culture that would enable them to identify, meet and exceed customer expectations.



Part two of the book (next seven chapters) deals extensively on a variety of skills in customer service viz positive verbal and nonverbal communications, active listening, handling service encounters based on their nature of customer behavior, managing diversity and technology for results. Initial three chapters here, place emphasis on responding and communicating to customers in a positive manner to make the customer feel special and welcome that would lead to total customer satisfaction and increased customer loyalty. The relevance of positive verbal communication along with a host of non verbal cues has been critically analysed for their implications and

necessary guidance has been provided for developing the required skill set to understand, assess and complement each other. The techniques for objective assessment of listening skills, developing the characteristics of an effective listener, overcoming the listening impediments and positive questioning skills, are invaluable for any one.

Sixth Chapter dwells on ways to positively influence customer perceptions and opinions. For this purpose, a unique frame work is provided to determine a course of action-by examining the customers' individual behavioural tendencies, actions, communication styles and needs- that would lead to customer loyalty and increased word-of- mouth referrals.

Techniques to deal with a variety of customers who may be angry, dissatisfied, indecisive, demanding, domineering, rude or talkative, has been dealt in detail in the seventh chapter, with a view to promote harmonious working. Eighth chapter shows how to prepare and develop an attitude to providing quality service while dealing with diverse customer groups.

Chapter nine stresses on using technology to its full potential as well as upgrading ones, own personal technology, knowledge, skills, evaluation approaches and techniques.

Part 3, has two chapters that provide guidance on effectively managing stress levels and time. Besides emphasizing on the need for being educated on stress management, a host of techniques are provided to deal with stress in order to improve one's quality of life. Practical tools and techniques are provided in capter Eleven to avoid time wasters like personal time record sheet, prioritization system and good time usage strategies to improve efficiency under all situations- in face to face encounters, over the telephone or while using technology .

The last two chapters in part 4, deal with encouraging customer loyalty and service recovery. A host of strategies, to build enduring and strong customer relationships, based on the principles of trust, responsibility, loyalty and satisfying customer needs for achieving organizational success has been provided in this part of the book. In customer service, the

author asserts, it is crucial to remain vigilant, recognize the customer needs and provide service levels to keep the customers coming back. Further he adds, when a customer experiences an actual or perceived service break down, prompt and efficient service recovery strategies have to be undertaken for retaining the customers.

The last chapter in part Four provides a perspective of the future in terms the service challenges emanating from changing demographics, evolving technology and increased competition - and dwells on the need to plan ahead for building multi-faceted skills.

Robert currently serves as an adjunct faculty for Webster University, USA teaching subjects like organizational & inter personal communications, diversity and training & development. He also holds dual roles as President of Creative Presentation Resources - a creative training and products Company and founding Managing Partner for Global performance Strategies LLC- an organization specializing in performance based training, consulting services, and life planning seminars.

The book concludes with the optimism that the growing realization of the need to regain the competitive edge , in the wake of rising competitive global environment, offer a strong chance for organizations to create truly customer-focused cultures.

The book is embellished with pre and post chapter quizzes, special boxes providing insights on managing effectively, 'Search it out' exercises to encourage outside class room research with web links to other relevant resources and corresponding exercises.

Written in simple language, lucid style and down to earth approach, the book is eminently readable and draws much from the author's vast experience as a teacher and practitioner rather than theoretical constructs.





<b>Book Title</b>	:	<b>Human Resource Management</b>
<b>Author</b>	:	<b>Sabari Mondal, Amal Goswami</b>
<b>Edition</b>	:	<b>First-2012</b>
<b>ISBN</b>	:	<b>978-81-8281-449-3</b>
<b>Pages</b>	:	<b>401</b>
<b>Publisher</b>	:	<b>Vrinda Publications Pvt Ltd., Delhi</b>

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**H**uman Resource Management has simple and impressive front cover page. Back cover presents the experience of the authors both of whom have a decade plus in the academic field in the state of West Bengal. It also narrates the lack of availability of combined text for HRM and labor law that gave inspiration to the authors to produce this text. The preface to the book by authors talks about the opening of the book with analysis of the environment of HRM in Australia; availability of numerous pedagogical features such as extensively updated, relevant case study material throughout the text and web based case studies in every chapter.

Unfortunately, when one goes through the text, one does not find a single reference to any case in any of the chapters. The text does not have chapter objective, there are no review questions/ points or even summary of the chapter. The chapter ends without any sense of conclusion. Last three pages of the text have been devoted to

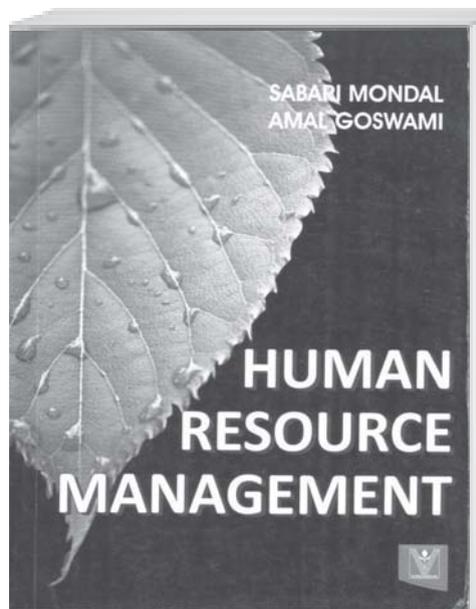
review questions that are very theoretical and do not do justice to the practical application of the subject.

The book is full of grammatical errors, spelling errors and other typos, e.g. on page 39, while referring to external sources of recruitment, it is written, "xx) Discharged or retired military

personnel or Ex – Service men after servise 20 years at lead in militant get retirement." Besides these errors the book is not at all reader friendly, the font size is very small and the book does not have constant spacing, this gives a very cramped feeling.

The entire content of the book appears to be taken directly from various power point presentations that give bullet points for emphasis and is meant to be teaching aid. There is no explanation to most of them and authors have not even bothered to change capital font to sentence case at some places.

By including laws on some of the topics, the authors claim to have



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covered all labour laws, which is highly misleading. Important labor laws like Workmen Compensation Act, Acts dealing with ESI, Gratuity, Maternity benefits have not even been mentioned. Moreover, in the recent years, there have been several amendments in the labor laws that have not been

considered while writing this text. The text does not contain any references or bibliography of any kind.

Overall, this text is an apology in the name of book publishing. I will not recommend this book for students at any level.





**Book Title :** Organizational Behaviour  
**Author :** Shuchi Sharma  
**Edition :** Third 2012  
**ISBN 13 :** 978-1-25-900502-2  
**ISBN 10 :** 1-25-900502-X  
**Publisher :** Tata Mc Graw Hill Education Pvt. Ltd., New Delhi

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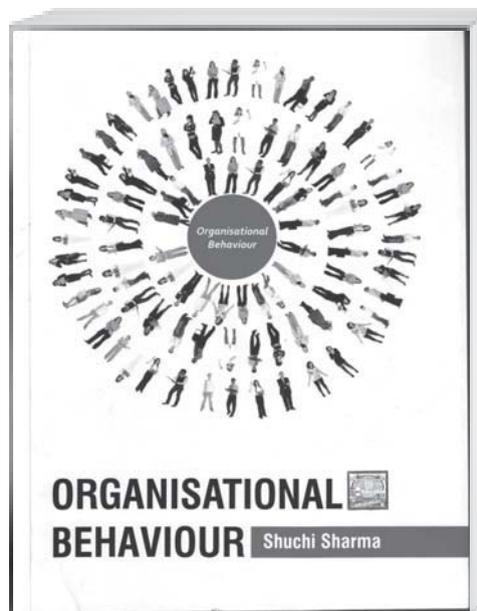
**W**ithout much ado, it can be noted that every successful business firm bestows a high level of concern and importance to organizational behaviour. This book written by Ms. Shuchi Sharma, like other decent compilations on organizational behaviour, also recognizes the critical role played by the management of an organization in setting up the right behaviour within and outside its zone of relevance. The behaviour of course cannot be only about being fair and legal but dynamic as well to unleash the energy and direction required to achieve its objectives.

As is the wont, books on behaviour of individuals, groups, or organizations tend to turn the students off simply because the text usually contains a lot of theory, analysis, interpretation heavily drawn from all areas stretching from anthropology to psychology and much more! To her credit, the author has adhered to a lucid and forthright style of narrative throughout the book and has thus made it very enjoyable

to read. For the same reasons, management students should find the book easy to follow and ensure comprehension.

The book is organized in the traditional method of presenting the discourse on behaviour as it impacts the organization founded by individuals, groups, and the structures that let in the interactions and work flows that restrain or facilitate activities. The text is divided into five broad sections each devoting considerable discussion on organizations as 'integral to our life,' understanding the human behavior of the individuals constituting the firm, how groups behave and perform, the impact of structures and design of organizations, and the decisive role of human resources management. In terms of contents, it is capacious yet compact and it is presented in brief sections.

Chapter 2 contains a fairly serious focus on how the evolution of organizational behaviour has taken place over a period of time much on the heels of the evolving management



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thought. Not many books on organizational behaviour contain references to the critical role played by the contributions of the authors of scientific management school, classical organization theory school, bureaucratic theory, neo classical approaches, behaviour school, etc. The relevance of history and holistic approach in the context of how the management science and culture developed over the years, is pretty significant and from that point of view, this special treatment is worth recalling.

Cruising through the main street of group behavior, the reader gains a fairly good exposure on team building and communication at work place and discuss how 'how managers do things right' versus 'leaders do right things' in Chapter 16. Though there is a good amount of discourse on leadership theories and styles, the discussion does not appear to be

complete without much focus on the approaches that seem to lay great emphasis on stakeholder trust and the breaches of trust that have in recent times impacted negatively the behaviour of some reputed organizations.

Each chapter of the book contains exhibits, tables, graphs, figures, and snippets about say, a Tata group or Britannia Industries giving the readers the full benefit of comprehending a particular topic or area of significance. Chapter endings are enriched with both objective and review questions and assignments for the students to work on. A bunch of short cases are presented toward the end of the text.

The book published by Tata McGraw Hill Education Private Limited is brought out well and should serve well as a good and adequate text book for post graduate students.





**Book Title :** Macroeconomics  
**Author :** Paul A. Samuelson  
 and William D Nordhaus  
**Edition :** 19<sup>th</sup> Edition  
**ISBN 13 :** 978-0-07-133336-8  
**ISBN 10 :** 0-07-133336-3  
**Pages :** 511  
**Publisher :** Tata Mc Graw Hill Education Pvt. Ltd., New Delhi

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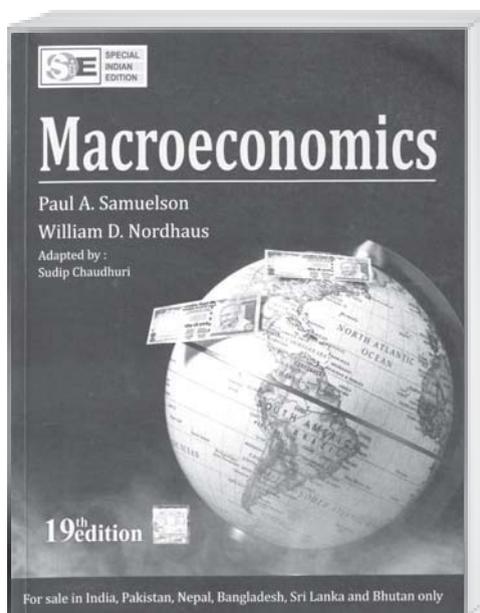


**A**nalysis of global and domestic economic environment, is imperative for the successful continuation of business. Economic environment is highly dynamic and complex in nature. The Economic factors, including nature of an economy; economic policies; trade cycles; economic resources; level of income; distribution of income and wealth etc. which have their affect on the working of the business, is known as economic environment. Economic environment does not remain the same and it keeps on changing over time and with the changes in power at the centre, political situations and Govt. policies. The books written by Samuelson and Nordhaus and Bradley R. Schiller are very effective in this regard.

Paul Anthony Samuelson needs no introduction to students of Economics. He was an American economist, and the first American

to win the Nobel Memorial Prize in Economic Sciences. The first edition of this book *Economics* written by him has become the best selling economics textbook ever since its first publication in 1948. For more than half century the book served as a basic text to learn/ teach economics across the globe. The economic systems around the world have been changing over the past decades since the first edition of the book. The latest edition of the book was written in the context of the US financial crisis 2007-09. Hence, the book addressed one of the major concerns of affluent world – ‘Will financial crisis cause redistribution of world wealth?’

The successive edition of the book *Economics* co-authored by Nordhaus and the 19<sup>th</sup> edition on *Macroeconomics* provides simple and detailed explanation of macroeconomic concepts. The Indian publication of the new edition has an additional feature

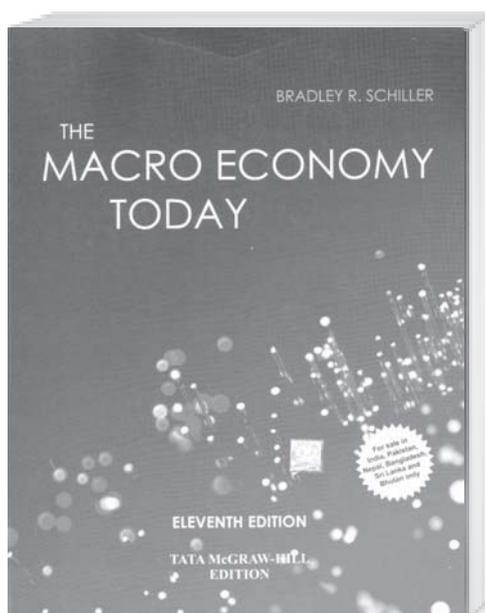


that it has been adapted by Sudip Chaudhari, faculty of economics at IIM Calcutta. Indian adaptation facilitates the Indian readers to understand the application of different macroeconomic concepts in the domestic economy context.

The book runs into four parts with part one deals with the basic economic concepts and economic systems. This part provides a special reference to mixed economy model of India. The part two of the book covers concepts of economic growth and economic instabilities. The measurement of economic growth and policy changes during business cycles are detailed in this section. The theories of economic growth and development are discussed in part three. This section also provides a description on open economy macro-

economics and importance of international financial system. The last part of the book discusses the economic perils - unemployment and inflation from supply side perspective.

The application of macroeconomic concepts especially in the Indian context is lacking in many of the macroeconomics text books available in the market. The adapted new edition of *Macroeconomics* solve this issue. Appendix of each chapter presents the Indian counter part of US systems and events. The authors tried to link the demand and supply side analysis of economic instability to recent happenings around the world.



<b>Book Title</b>	: <i>The Macro Economy Today</i>
<b>Author</b>	: <b>Bradley R. Schiller</b>
<b>Edition</b>	: <b>11<sup>th</sup> Edition</b>
<b>ISBN 13</b>	: <b>978-0-07-328711-9</b>
<b>ISBN 10</b>	: <b>0-07-328711-3</b>
<b>Pages</b>	: <b>511</b>
<b>Publisher</b>	: <b>Tata Mc Graw Hill Education Pvt. Ltd., New Delhi</b>

**A** The new edition of *The Macro Economic Today* comes with an electronic edition in the same layout of print version, emphasizing the environmental concern. Other additional feature of the book is the inclusion of a small chapter 'economics and internet' which provides quick access to economic statistics. The Indian adaptation of the book provides important websites from where macroeconomic data pertain to Indian economy can be accessed. In short, 19<sup>th</sup> edition of *The Macro Economy Today* is an appropriate choice for those who pursue a course in economics.

An equally good book to start with economic learning is 'Macro Economy Today' by Bradley R. Schiller. The author tries to make

economics more interesting by merging theoretical insights with real world situations. The major concern of eleventh edition of the book is 'who should resolve the basic questions of economics – what, how and whom to produce? Should government or market resolve these basic questions?' With real world examples the author describes how different nations resolved the above question and why do market failures occur and when one can expect government intervention.

The book has been divided into eight parts with part one dealing with the challenges and core issues in economics – scarcity and

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efficiency. Part two of the book describes the measurement of macro indicators like national income, unemployment and inflation.

Parts 3 to 5 narrates macroeconomic instabilities and fiscal – monetary options to tackle the economic fluctuations from Keynesian (demand-side) framework. Part six of the book analyses the supply side policy options to achieve long run growth and productivity. Last two parts of the book describe global scenario with emphasis to international trade and finance.

Each chapter of the book begins with well defined learning objectives. The readers have been taken to the theoretical underpinnings of the chapter after providing an exposure to the real world situation. Some of the additional features of the 11<sup>th</sup>

edition include arithmetic and graphing problem set for students and resource manual for instructors.

Even though the book is an ideal choice to economic students, the real world examples provided in the book are US based which may be a drawback to students outside US.

The two books discussed above by Samuelson-Nordhaus and Schiller discuss the macro economic theory in detail both from demand and supply-side framework. Of these, demand-side analysis or Keynesian policy option to tackle economic instabilities is very relevant in the context of current financial turmoil across the globe. Samuelson and Nordhaus in their book try to highlight this centrist approach and assert the value of mixed economy.





**Book Title :** Crafting and Executing Strategy  
**Author :** A. Thompson and Margaret A. Peteraf  
**Edition :** Special Indian Edition  
**ISBN 13 :** 978-1-25-900476-6  
**ISBN 10 :** 1-25-900476-7  
**Pages :** 800  
**Publisher :** Tata Mc Graw Hill Education Pvt. Ltd., New Delhi

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**T**he book titled *Crafting and Executing Strategy* goes beyond being a student reference book with its dual focus on scholarly content and managerial perspectives. What is truly appreciable is the authors' attempt at contemporizing the content so as to sensitize the reader (be it academician or executive) to fresh perspectives in strategic management. The book's content strikes the right balance between academic thought and real-world pragmatism. Each chapter is capped with small illustrative cases, apart from the 28 full-blown cases presented in the Case diary section in Part 2 of the book. At times, one may feel that the theory content in certain chapters could be combined or curtailed, but on the whole the book makes for excellent reference with ample examples, contemporary cases and illustrations on offer.

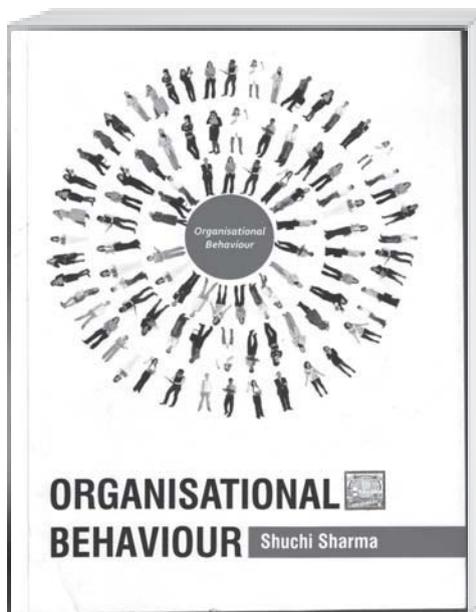
Chapter 1 introduces students to the importance of having a sound strategy to compete successfully. It also

proposes a litmus test for ascertaining the viability of the chosen strategy.

Chapter 2 discusses the process of crafting and executing strategy at various organisational levels. The highlight of this chapter is its frequent reference to the contemporary buzzword of 'corporate governance.'

Chapter 3 evaluates various competitive positions within Strategic Groups and probes in-depth the competitive macro-environment through PESTEL and micro-environment through Porters Five Forces Model.

Chapter 4 covers how resources and capabilities must be modeled to create competitive advantage. In doing so, the chapter reviews concepts like SWOT, Benchmarking and Value chain analysis in good depth. What sets this book apart from counterparts is the section on the interpretation of Key financial ratios and their role as performance indices.



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Chapters 5 and 6 present Business Strategy in action covering all the possible competitive strategies firms may adopt to compete successfully.

Chapter 7 deals exclusively with corporate strategies for entry and growth in foreign markets namely export, licensing, franchising and acquisition options available to firms. Additionally, the text discusses how cross-border strategies can be used to compete in global markets.

Chapter 9 is again a highlight of this book as it dwells extensively upon the importance of abiding by ethical framework while crafting and executing strategy. The book presents a strong case for following an ethical strategy in clear and compelling terms.

The remaining part of the book highlights the importance of matching organizational infrastructure and capabilities to strategic requirements for proficient strategy execution. This includes establishing standards in staffing, policies and procedures, operating systems and reward management. In emphasizing the thrust on corporate governance further, a full chapter has been dedicated to the role of corporate culture and leadership in good strategy execution.

The icing on the cake is certainly the impressive line-up of 28 cases from companies and scenarios as diverse as chalk and cheese. The repertoire includes cases pertaining to global firms, SMEs and family businesses. This being a Special Indian edition, cases on Indian companies have also been incorporated.



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## Aims and Scope

The *SCMS Journal of Indian Management* is a **blind peer-reviewed Journal**. The Journal deems it its mission to submit to the readers fresh fruit of management thoughts and rich cream of current innovative research. The format of the Journal is designed reader-friendly. The academia and the corporates have an easy access to the Journal.

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- § Proposals for articles that demonstrate clear and bold thinking, fresh and useful ideas, accessible and jargon-free expression, and unambiguous authority are invited. The following may be noted while articles are prepared.
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Fax : +91 484 2623855

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## CERTIFICATE OF REGISTRATION

Title of Newspaper : *SCMS JOURNAL OF INDIAN MANAGEMENT*

Language : English  
(in which it is to be published)

Registration Number of the Newspaper : KERENG/2009/32718

Periodicity of the publication and the day on which it is published : Quarterly  
1 January, 1 April, 1 July, and 1 October

Retailing Selling price of the Newspaper : ₹ 1000/- (One Year Subscription)

Publisher's Name : Dr. D. Radhakrishnan Nair

Nationality : Indian

Address : 25/74, Ambady,  
Kothamangalam-686691, Ernakulam.

Place of publication : Prathap Nagar, Muttom,  
(with complete Postal address) Aluva-683106, Ernakulam District, Kerala.

Printer's Name : Dr. D. Radhakrishnan Nair

Nationality : Indian

Address : 25/74, Ambady,  
Kothamangalam-686691, Ernakulam.

Name of the Printing Press : Maptho Printings, Kalamassery, Cochin-683104  
(with complete address where printing is to be conducted)

Editor's Name : Dr. D. Radhakrishnan Nair

Nationality : Indian

Address : 25/74, Ambady,  
Kothamangalam-686691, Ernakulam.

Owner's Name : SCMS-COCHIN

Place : Prathap Nagar, Muttom.

# SCMS Journal of Indian Management SCMS-COCHIN

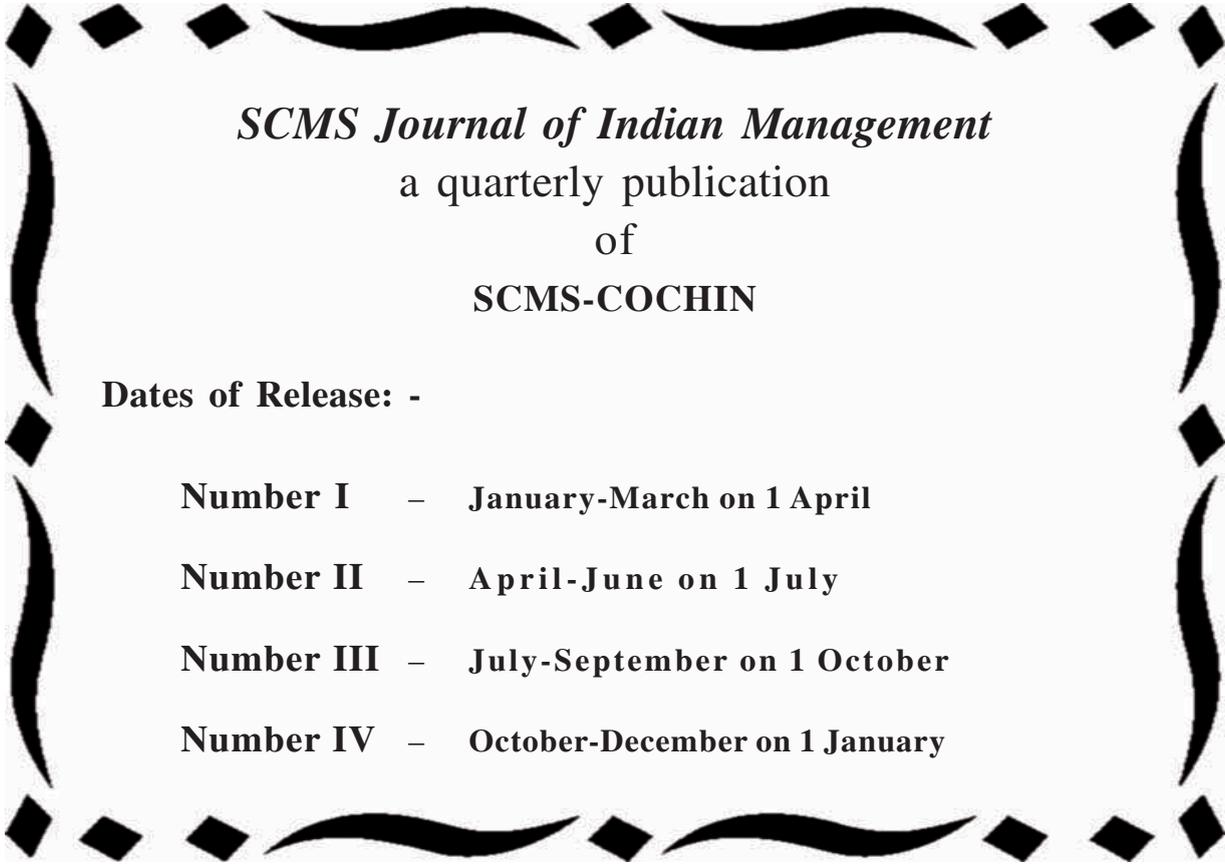
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E-mail: editor@scmsgroup.org / scmseditorcochin@yahoo.com

Website: www.scmsgroup.org



*SCMS Journal of Indian Management*  
a quarterly publication  
of  
**SCMS-COCHIN**

**Dates of Release: -**

**Number I – January-March on 1 April**

**Number II – April-June on 1 July**

**Number III – July-September on 1 October**

**Number IV – October-December on 1 January**

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Ph: 91-484-262 3803 / 262 3804 / 262 3885 / 262 3887 Fax: 91-484-262 3855, Website: www.scmsgroup.org  
E-mail: editor@scmsgroup.org / scms@vsnl.com, Journal Website : scmsgroup.org/scmsjim

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Story of an entrepreneur who built up a set of high quality academic institutions in a totally hostile and challenging environment. A model for entrepreneurship in any situation.

Edited, printed and published by Dr. D. Radhakrishnan Nair on behalf of SCMS-COCHIN [School of Communication and Management Studies] and printed at Maptho Printings, Kalamassery, Cochin-683104 and published at Muttom, Aluva-683106, Cochin.



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Email: [editor@scmsgroup.org](mailto:editor@scmsgroup.org), Website: <[www.scmsgroup.org](http://www.scmsgroup.org)>  
Journal Website: <[www.scmsgroup.org/scmsjim](http://www.scmsgroup.org/scmsjim)>

**ISSN-0973-3167**

