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Men Money Machines Markets Methods Modernisation Maintenance Materials

Management is Synergy

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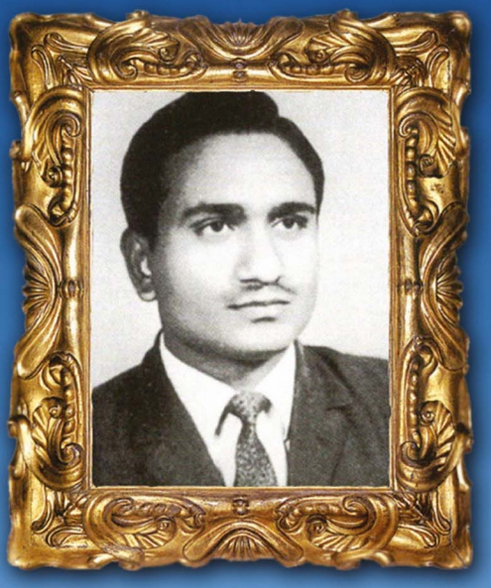
A TRUE VISIONARY

"You see things and you say **Why***? But I dream of things that never were and say* **Why** *not?"*

- George Bernard Shaw



Shri Jagannath Gupta
(1950 - 1980)

Also a true visionary...who dared to dream!
He lives no more but his dreams live on....and on!

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And more dreams to come!

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Editor's Desk

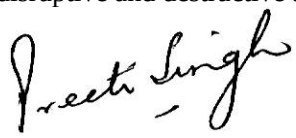
Today I was working on my computer and a thought came to my mind about the security of my computer because there are so many alerts and threats about cyber-attacks. How to keep my data safe because someone may damage my computer? How can he do so from a remote place if he is not with me and is not connected with my computer? I heard about ransom ware in the news and also that many computers had stopped working in educational institutes, commercial services, government departments, hospitals and other service areas because their computers were hacked and the hacker was demanding a ransom to fix the problems. What is ransomware? Why did we not hear about them earlier and how can we secure ourselves from these types of sudden attacks. Can a hacker easily damage my property without asking me? Can he delete all my data without my permission? I know science, I have antivirus, I have tried to understand all the basics but still I am scared because hackers are good in disruption and they can easily notice what is going in my mind?

The first cyber war happened in 2007 in Estonia when they set up cyber center for excellence and tried to know the implications and consequence of a cyber-attack. Attacker had mainly targeted on Parliament, ministries, banks, and media.

In November 2014, The North Korean attack on Sony was one of the most destructive cyber-attacks on a U.S. entity to date. The attack further spurred an already ongoing national discussion about the nature of the cyber threat and the need for improved cyber security.

Digital India is a mission of Mr. Modi our Prime Minister where he is keen that people should have everything in their own computer and they can transfer money, shopping, put their important data, talk to friends/relative, arrange meetings, book travel ticket etc. But at the same time government needs to think about the other side where normal users of computers are not aware that every single click is being noticed, everything is being tracked by a third person and we can't even think about their unusual activity. Is government thinking of educating people? Digital India can only be successful if people have awareness of cyber security.

Cyber security is one of the most important requirements for people, organization and in private and government sectors. Leaders must take steps to mitigate cyber risks. Governments, companies, and organizations must carefully prioritize the systems and data that they need to protect, assess risks and hazards, and make prudent investments in cyber security and cyber defense capabilities to achieve their security goals and objectives. To mitigate risks in cyberspace requires a comprehensive strategy to counter and if necessary withstand disruptive and destructive attacks.



(Preeti Singh)

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ANALYSIS OF CLUSTER DEVELOPMENT APPROACH IN INDIA

Dinesh Rawat *

This paper focuses on two main aspects of the clusters, namely, which factors gives rise to development of clusters and what benefits are acquired by firms from participating in clusters of India. The methodology used for this article is a literature review of published materials. A broad search strategy was used using key terms like industrial clusters, evolution of clusters, and advantages of clusters from electronic databases. Among the factors that give rise to clusters in India, the more important ones are historical background, easy availability of raw materials, existence of one or few large enterprises, pooled labour market of skilled workers, regional government policy, and presence of entrepreneurial spirit. The important benefits reported by enterprises through their presence in clusters are formation of new business, network formation with supporting institutions, women empowerment, market development, product development, easy availability of finance, increased trust and collaboration among members, increase in sales, skills up gradation of workers and employment opportunities. We expect that the findings from this study will assist firms and policy makers in making more informed decisions regarding the adoption of a cluster approach and start new initiatives for promoting inter-firm relations within MSME clusters. The major contribution of this paper is that it attempts to justify the positive impact of cluster approach and describe the status of clusters in India.

Keywords: Clusters, Industrial clusters, Small and medium enterprises (SMEs), MSMEs, SME clusters.

Worldwide, the micro, small and medium enterprises (MSMEs) have played a leading role in promoting equitable regional development and economic growth. Globally, MSMEs are the largest employment generators. MSMEs employ at least 45 percent of the workforce in half of the high income economies (FICCI, 2013). Similar results have been observed in India, where MSMEs have contributed beyond doubt to the Indian economy by generating employment opportunities, promoting exports and innovations, and by developing entrepreneurial skills. This sector has emerged as a highly vibrant and dynamic sector of the Indian economy and enabled our country to achieve industrial growth and development (Vasu, 2014). MSMEs helped in industrialisation of rural and backward areas. They also played a crucial role in providing large employment opportunities, reducing regional imbalances, assuring more equitable distribution of national income and wealth. Since MSMEs contribute enormously to the socio-economic development of the country thus they can be boon and a hope for Indian economy in near future (Ali, 2014). In the present business scenario, the MSMEs have been accepted as the engine of industrial growth as they provide employment to around 805 lakh people and contribute 37.33 percent towards total manufacturing output of the country (MSME, 2016). With a contribution of 35 percent to direct exports, the MSME sector has achieved substantial landmarks for the industrial development of India (FICCI, 2013).

An important feature of India's industrial organization is that Indian MSMEs often form clusters. Clustering has been the age old phenomenon in India. Clusters have been in existence in India for centuries and are known for their products at the national and international level (Singh, 2010). Clusters are geographic concentration of interconnected companies and institutions in a particular field which includes actors such as suppliers, customers, manufacturers, government and other institutions such as standards-setting agencies, universities, think tanks, and trade associations (Porter, 1998). Clusters occur at several geographical levels (nations, states, cities) and in many types of industries either large or small which decreases the appropriateness in the definition of cluster (Porter, 2000). With respect to micro, small and medium enterprises, cluster is a sectoral and geographical concentration of micro, small and medium enterprises producing a similar range of goods or services and facing similar threats and opportunities (UNIDO, 2006; Das et al., 2007). Industrial clusters consist of firms in a region dedicated to particular product and offer favourable environment which allows the firms to easily pool the resources for them to become more competitive (Niu et al., 2008). In India it is estimated that there are around 6400 clusters. A total number of 5847 clusters have been mapped. Out of theses, 2443 are SME clusters, 540 are handloom clusters and 2864 are handicraft clusters.

Few important questions common to these clusters arise: What are the critical drivers for their growth in India?

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What benefits MSMEs gets by participating in these clusters? The purpose of this paper is to address these two questions. This paper answers these questions by examining a sample of 20 clusters on the basis of information provided in the previous surveys on India's industrial clusters.

This paper has been divided into 8 sections. Section 2 reviews the important studies relevant to the present research. Section 3 talks about the evolution and status of clusters in India. Section 4 defines the objectives of the study. Section 5 deals with research methodology part and provides a brief description of the selected clusters. Sections 6, 7, and 8 respectively deals with findings, conclusion, and scope for further research.

I. Review of Literature

For better understanding and to draw useful inferences, the important studies reviewed have been presented under the following heads:

Clustering Perspective

The underlying concept of cluster which most economists have referred to as agglomeration dates back to 1890 in the work of Alfred Marshal. Alfred Marshall is among the first who examined the phenomenon of clustering in industrial organizations. Alfred Marshall in 1920 explained why particular specialized industries concentrate in particular localities through Industrial districts which he defined as concentration of specialized industries of similar kind in a particular locality. Marshall (1920) suggested that clustering of firms operating in similar industries creates externalities in the form of economies of labor and supply of specialized input materials. Pouder and St. John (1996) describe geographic clustering of firms in the same industry through hot spot which they defined it as regional clusters of firms that compete in the same industry, begin as one or several start-up firms that, as a group, grow more rapidly than other industry participants in sales and employment levels, and have the same or very similar immobile physical resource requirements in the long run. However, Michael Porter was the one who gave the cluster concept relevance. Michael Porter, a leading authority on company strategy and the competitiveness of nations and regions introduced the term industry cluster in his book The Competitive Advantage of Nations in 1990. Porter defined clusters as geographic concentration of interconnected companies and institutions in a particular field which includes actors such as suppliers of specialized inputs for components, machinery and services, providers of specialized infrastructure, customers, manufacturers of complementary products, companies in industries requiring skills, technologies, or common inputs, government and other institutions such as universities, standards-setting agencies, think tanks, vocational training providers, and trade associations which provide specialized training, education, information, research, and technical support (Porter, 1998). Later various other scholars and organizations worked in this area (Baptista and Swann, 1998; Morosini, 2004; UNIDO, 2006; Das et al., 2007; Planning Commission, 2012; Giuliani, 2013; Fundeanu and Badele, 2014). Baptista and Swann (1998) defined geographic cluster as a strong collection of related companies located in a small geographical area, sometimes centered on a strong part of a country's science base. Morosini (2004) defined industrial cluster as a socioeconomic entity characterized by a social community of people and a population of economic agents localized in close proximity in a specific geographic region. Clusters are defined as sectoral and geographical concentration of enterprises, especially small and medium, which share a future, both in terms of opportunities and threats (UNIDO, 2006; Das et al., 2007). A Cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, that share common markets, technologies, worker skill needs, and which are often linked by buyer-seller relationships (Planning commission, 2012). Industry clusters are geographic agglomerations of firms specialized in one or more related industries (Giuliani, 2013). According to Fundeanu and Badele (2014) competitive and innovative industry which favours the emergence of new form of competitive advantages in the form of partnerships between businesses, research institutions, universities and states is called cluster.

Types of Clusters

Clusters are present worldwide. Every country has a number of agencies which have come up with a range of definitions, tailored to suit the typology of clusters, which an agency is mandated to cater to. For instance, in India, clusters are broadly divided into SME clusters, handicraft clusters and handloom clusters, similarly in U.S and Canada they are divided into traded clusters and local clusters, and in Japan they are divided as per industry like automobile and transport equipment, aircraft, food manufacturing etc. Markusen (1996) gave three new types of industrial districts (Table 1): first, hub-and-spoke districts, revolving around one or more dominant, externally oriented firms; a satellite platform, an assemblage of unconnected branch plants embedded in external organization links; and the state-anchored district, focused on one or more public-sector. John and

Pouder (2006) proposed two types of clusters: technology-based clusters and industry-focused clusters, on the basis of differences in economic activity. As per them industry-focused clusters develop deep expertise in the industry of interest and include resources skilled labor, banks, accountants and other service providers with in-depth knowledge of industry. In contrast, technology-based clusters always focus on new technologies and include resources such as entrepreneurial experience and insight. Gulati and Sarkar (2006) defined different types of clusters (Table 2) based on various types of categorisations.

Cluster formation

In past few decades researchers have shown an increased interest in the study of clusters and other related areas like factors that support clusters development. Some of the factors that help in development of clusters are: presence of related and supporting industries, acts of innovation, factor conditions, sophisticated, or stringent local demand, prior existence of supplier industries, related industries, and presence of one or two innovative companies that stimulate the growth of many others (Porter, 1998). As per Boari (2001) key drivers of cluster origin and formation in Northern Italy were role of high demanding customers and presence of local expertise like local technical school and lastly the presence of leading firms which were nurturing future entrepreneurs. Boari (2001) also concluded that the role of public policy in creating clusters of firms was negligible i.e. no industrial clusters emerge from industrial policy initiatives. Clusters evolve because of knowledge creation within the cluster (Maskell, 2001) and strong skills base, networks and relationship, innovation and strong R&D base, presence of an entrepreneurial spirit and good physical infrastructure and access to finance (Consulting, 2001). According to Yamawaki (2002) factors gave rise to industrial clusters in Japan are existence of leading large firms, presence of research institutes, prior existence of supporting and related industries, and availability of human resource. There is at least one large indigenous Indian firm functioning as an anchor company and also acts as attractors for other major companies (Khomiakova, 2007). As per Das (2008) the key determinants of cluster performance in context of developing countries are: strength of networks, degree of nature of informalisation, and dynamics and effects of macro policy environment. Das also suggested few approaches for cluster promotion like skill formation/ training, local economic development, technology/ innovation support, and expanding trade / exports. Cooperation and integration among firms (Oprime et al., 2010), and universities and research institutes in a cluster also play an important role in development of a cluster (Fundeanu and Badele, 2014). Three key factors for success of clusters studied in India (U.P leather and footwear cluster, Varanasi silk saree cluster and Moradabad brass ware cluster) were decentralized production integrated through a complex web of relations, trust and co-operation and skills of the artisans (Varman and Chakrabati, 2011). Professional human resource is an important factor for industrial cluster formation (Hsu et al., 2014).

Clusters in India

Cluster development thought in India

It was observed that MSME sector was hard hit by the Government's recourse to liberalisation policy in 1991. The MSME sector was vulnerable because it had neither the size nor the technology advantage. Small scale industries observed deterioration in their performance after 1991. Table 3 shows the deterioration in the performance of small scale industries after 1991.

No. of Units: The number of units in the SSI Sector over the year is the criteria to decide the growth of SSI in the economy. Though the numbers of units were increasing in absolute figures, the compound annual growth rate has decreased (Table 3) from 10 % in 1977-1922 i.e. pre-reform periods to 8.97 % after 1991 i.e. post-reform periods from 1992-2002. This was supported by further annual decrease from 2002-2006 (Table 2).

Employment growth: Employment generation has always been one of the main objectives of the policies aimed at economic development and growth of the nation. The compound annual growth rate has decreased (Table 3) from 5.45 per cent in pre-reform period to 5.33 per cent in post reforms period, which is quite disheartening.

Gross Output: The compound annual growth rate has decreased from 91.06 per cent in pre-reform period to 16.81 per cent in post reforms period (Table 3). This further went down from 2002-06 (Table 2).

Export performance: During the pre-reforms period, the average growth in SSI exports was 24.26 percent which was reduced to 18.98 percent in post-reform period (Table 4).

All these results show that the small scale sector does not get the required support from the Governments. Thus it was necessary to help small scale industries to improve their performance. Several promotional measures were taken by the Government. Keeping in view the enormous

potential of this sector, the Department of small scale industries and Agro & Rural industries (DSSI & ARI), Ministry of industry set up Abid Hussain Committee in 1995. The Committee report, which was released in 1997, advocated cluster development as the approach to be followed to promote SSI. It said that cluster based approach is a very practical approach to SME promotion in India since there already exist a large range of small scale industry clusters across the country. In 1996, UNIDO was requested by the DSSI, Ministry of Industry, to conduct a mapping of SSI clusters, promote pilot projects in selected clusters and assist the Ministry to formulate a national cluster development programme. Various project, organizations and schemes were launched like UPTECH (scheme for technology up-gradation and management) in 1998 which was renamed as Small Industry Cluster Development Programme (SICDP) in 2003, Baba Saheb Ambedkar Hastashilp Vikas Yojana (BAHVY) for integrated development of potential handicrafts clusters in 2001-02, and Foundation for MSME Clusters (FMC) in 2005 for promoting MSMEs in clusters. In the Budget speech of 2006-07 the then Finance Minister said that the Cluster Development model can be usefully adopted not only to promote manufacturing but also to renew industrial towns and build new industrial townships. In 2007, the erstwhile cluster development scheme 'Small Industries Cluster Development Programme (SICDP) was renamed as Micro and Small Enterprises Cluster Development Programme (MSE-CDP) with more broad objectives like support the sustainability and growth of MSEs by addressing common issues such as improvement of technology, skills and quality, market access, access to capital, etc.

Defining clusters in India

In India a number of agencies have come up with a range of definitions, tailored to suit the typology of clusters, which an agency is mandated to cater to, by specifying a certain minimum number of units in a given measured location. Few major agencies and their cluster definition are: Micro and Small Enterprises - Cluster Development Programme (MSECDP) defined cluster as a group of enterprises located within an identifiable and as far as practicable, contiguous area and producing same/similar products/services; Office of the Development Commissioner (Handlooms)-Integrated Handloom Cluster Development Programme (IHCDP), Ministry of Textiles-define handloom cluster as one having a minimum of 500 looms; and Office of the Development Commissioner (Handicrafts), Ministry of Textiles-Baba Saheb Ambedkar Hastshilp Vikash Yojana (AHVY)-defined handicraft clusters as agglomerations having 100 artisans. In case of North East Region, Jammu & Kashmir and other hilly terrains, the clusters will have a minimum of 50 artisans.

Typology of clusters in India

In India, a cluster is known by the name of the product being produced by principal firms and the place they are located in. Cotton hosiery (the product) cluster of Tirupur (the place), Knitwear cluster of Ludhiana, Brass products cluster of Moradabad and Information Technology cluster of Bangalore are a few such examples. Most of these clusters have been in existence for years and are well known not only locally, but also nationally and at times internationally. At present it is estimated that there are around 6400 clusters in India. A total number of 5847 clusters have been mapped. These clusters are spread all over India. Table 5 tells about the typology of these 5847 clusters state wise.

Objectives

The present study has two objectives:

- To identify the critical determinants of industrial clusters development in India
- To identify the benefits accrued by MSMEs present in industrial clusters in India

II. Research Design & Methods

The methodology used for this paper is a literature review of published materials. A broad search strategy was used using key terms like industrial clusters, evolution of clusters, and advantages of clusters from electronic databases. Further, a sample of 20 clusters in India was selected from the clusters previously studied by the Foundation for MSME clusters (FMC, 2006; Das et al., 2007, Russo et al., 2000, and Planning Commission (2012). Detailed analysis of these 20 clusters was done. These clusters are not located in one particular area rather they are dispersed widely across India. Each of these clusters is briefly described in below table 6.

III. Analysis, Discussion & Findings

Key factors responsible for cluster development

What are the key driving factors that underlie these 20 clusters? Many important drivers have emerged from the analysis of above mentioned clusters. Following are the key drivers.

I. Historical background: The Chanderi Handloom cluster, Solapur terry towel cluster, Brass and bell metal cluster of Rengali, Floriculture cluster of Pune,

Crochet lace cluster of Narsapur, Mojari clusters of Rajasthan, Kannaur handloom cluster, Hand block printed textile cluster of Jaipur, Wet grinder cluster of Coimbatore, Bidri cluster of Bidar and Stone carving cluster of Konark had already been known for their products. Traditionally the artisans and families have been making products for generation in these clusters. Through their long histories the artisans have accumulated the skills required for making products.

II. Existence of one or few large enterprises: The second factor is the existence of one or few large enterprises. The existence of a large enterprise in clusters like Machine tools cluster of Bangalore, Chittoor Fruit Processing cluster, Heavy Engineering fabrication cluster of Trichy, Rubber cluster of Kottayam, and Hosiery cluster of Tirupur, has stipulated the entry and growth of other firms and the cluster itself.

III. Pooled labour market of skilled workers: Some of these clusters were formed and got success because of access to pooled labour market of skilled workers in their region. The Chanderi Handloom cluster, Solapur terry towel cluster, Crochet lace cluster of Narsapur, Mojari clusters of Rajasthan, Kannaur handloom cluster, and Hand block printed textile cluster of Jaipur, took the advantage of the presence of such pool of skilled manpower.

IV. Regional government policy: The regional governments often played significant roles in providing seed for formation and development of these clusters. Heavy Engineering fabrication cluster of Trichy, Solapur terry towel cluster, Floriculture cluster of Pune, are the few clusters where regional governments took important initiatives for their growth. Supportive law and order situation, supportive regulatory framework, and absence of unnecessary interference by government officials and inspectors were some of initiatives provided by the state governments.

V. Presence of entrepreneurial spirit: Diesel engine and engineering cluster of Rajkot and Brass parts cluster of Jamnagar have emerged only after when a few pioneering entrepreneurs started manufacturing the products.

VI. Easy availability of raw materials: The Coir cluster of Alleppey, Hosiery cluster of Ludhiana and Rubber cluster of Kottayam are the clusters which illustrates the importance of the easy availability of raw materials.

Benefits accrued by firms in clusters

As per the analysis of above mentioned clusters it was found that the firms have reaped multiple benefits by being actively associated in the cluster. The advantages experienced under cluster approach are mentioned below.

I. Formation of new business: In Coir cluster of Alleppey more than 4500 tiny and small enterprises were evolved. There has been an increase in the number of ISO registered enterprise in Chittoor Fruit Processing cluster, Floriculture cluster of Pune, and Diesel engine and engineering cluster of Rajkot.

II. Network formation with supporting institutions: Greater synergies were established between cluster MSMEs and support institutions. Gap between enterprises, institutions were reduced over the period in Heavy Engineering fabrication cluster of Trichy, Solapur terry towel cluster, Diesel engine and engineering cluster of Rajkot, Floriculture cluster of Pune. Strong institutional linkages were formed in these clusters. Supporting institutions has helped enterprises in pursuing common activities in terms of input purchases, establishing common testing laboratory and carrying out common marketing initiatives. Enterprises in these clusters started collaborations and tie ups with domestic firms and research institutes including Universities.

III. Women empowerment: Many women consortia were financed in Coir cluster of Alleppey. Women majorly housewives were organized into self help groups in Brass and bell metal cluster of Rengali. Various training programme for rural woman artisans were launched in Mojari clusters of Rajasthan.

IV. Market development: Various new international markets were explored in Machine tools cluster of Bangalore. Consortium of various enterprises was formed and also a website was developed for marketing the products in Crochet lace cluster of Narsapur. Enterprises in Mojari clusters of Rajasthan got opportunity to sell their markets in new marketing avenues like Dilli Haat, India Habitat Centre. Various international firms visited these clusters for marketing tie-ups and it became easy for the enterprises to access market information through specialised agencies.

V. Product development: New techniques to raise competitiveness were introduced in Machine tools cluster of Bangalore, Chittoor Fruit Processing cluster, Heavy Engineering fabrication cluster of Trichy, Brass and bell metal cluster of Rengali, and Diesel engine and engineering cluster of Rajkot. Enterprises introduced new design inputs with the help of local and international designers in cluster like Mojari clusters of Rajasthan, and Hosiery cluster of Ludhiana.

VI. Easy availability of finance: Enterprises in Chanderi Handloom cluster reported easy access to capital assistance from the institutions. Grant-in-aid was sanctioned by the financing institutions to MSMEs for setting up CFC, and business promotion. State government provided support packages for infrastructure development in clusters like Wet grinder cluster of Coimbatore, and Chanderi Handloom cluster.

VII. Increase in sales, skills up gradation of workers and employment opportunities: All clusters reported additional business sales, better employment opportunities and skills upgradation of workers. Many enterprises made huge savings through implementation of better shop floor practices and efficient energy audits.

VIII. Increased trust and collaboration among members: To enhance the backward and forward linkages, exchange for sub-contracting was established in cluster like Rubber cluster of Kottayam. Cluster like Chittoor Fruit Processing cluster, Solapur terry towel cluster, and Diesel engine and engineering cluster of Rajkot observed increase in trust and collaboration among the enterprises and other supporting institutions. Enterprises in these clusters started pursuing common business plans. Enterprises in these clusters started inter-firm collaborations for sub-contracting and other business activities.

IV. Conclusion

The present research had two objectives viz. first, to identify critical determinants of cluster development in India and to identify the benefits accrued by firms present in clusters. This study has been carried out in the context of 20 clusters dispersed widely across India. This study incorporates a literature review method to filter key factors that are responsible for cluster development and major benefits accrued by firms due to their presence in clusters to conclude a conceptual framework. Further detailed analysis of the 20 clusters of India has been done to conclude that firms in a cluster reap emormous benefits.

On cluster development factors front, the analysis showed the following factors responsible for development of clusters; Historical background, existence of one or few large enterprises, pooled labour market of skilled workers, regional government policy, presence of entrepreneurial spirit, easy availability of raw materials. These six factors are not meant to substitute each other instead several of them are often present together and complement each other when a cluster emerges in a region. These factors by no means are exhaustive but they are consider critical for these twenty clusters in India in this paper. Understanding of these driving factors will assist the managers of these enterprises in making more informed decisions and frame new policies for the healthy growth of their firm. On the benefits front, the enterprises have benefited in multiple ways by actively associated in the cluster. They reported the following benefits; formation of new business, network formation with supporting institutions, women empowerment, market development, product development, easy availability of finance, increased trust and collaboration among members, and increase in sales, skills up gradation of workers and employment opportunities. The results suggest that firms have benefitted from the advent of industrial clusters. Due to the benefit of networking, firms have been able to overcome barriers such as global Competition, technological obsolescence, investment shortages, and supply chain incompetence. The inter-firm trust and collaboration stimulated by these networks have aided the firms to move up the value chain and gain competitiveness. Presence in clusters has helped firms in introducing innovation in products and processes. The list of these key cluster development determinants and major benefits of industrial clusters are quite similar and consistent with the factors and benefits given in previous literature.

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Table 1: Main characteristics of Markusen's industrial districts.

Indicator	Hub-and-spoke districts	Satellite industrial platforms	State-anchored industrial districts
Business structure dominated by	one or several large, vertically integrated firms surrounded by suppliers	large, externally owned and headquartered firms	one or several large, government institutions surrounded by suppliers and customers
Key investment decisions made	locally, but spread out globally	externally	at various levels of government, some internal, some external
Degrees of cooperation, linkages with external firms	High both locally and externally	High especially with parent company	High
exchanges of personnel	Moderate	High	Moderate
Degree of cooperation among competitor firms	Low	Low	Low
Source of finance	by large firms	provided externally, through firm or external purchase	No specialized sources of finance
Government role	Strong	Strong	Weak
Growth prospects	Long-term prospects	Short-term due to intermediate-term portability of plants and activities elsewhere	Long-term prospects

Table 2: Different types of clusters as per Gulati and Sarkar (2006).

Categorisation	Type of cluster	
Origin	Naturally clusters which evolved by themselves	Induced which evolve through special policy measures
volume of business	Large	Small
relationship among firms	Vertical cluster which consists of one or a few large enterprises and a large number of other small supplier enterprises	Horizontal cluster which consists of a large number of small & medium sized enterprises (often in hundreds) that may produce and market directly while competing with one another
Nature of business	Exporting	Non-exporting

Table 3: Performance of small scale sector.

	Employment (Annual Compound growth rates)	**No of Units (Annual Compound growth rates)**	**Gross Output (Annual Compound growth rates)**
1977-1992	5.45	10	91.06
1992-2002	5.33	8.97	16.81
2002-03	5.85	4.06	8.67
2003-04	4.40	4.07	9.64
2004-05	4.44	4.07	10.87
2005-06	4.27	4.07	12.32

Source: 1 and 2 census reports of SSI and Economic survey reports

Table 4: Export of small scale industries

Year	**Average growth rate (%)**
Pre-reform period (1982-1992)	24.26
Post –reform period (1992 – 2006)	18.98

Source: Economic survey reports and (Asra and prashad, 2011)

Table 5: State-wise distribution of clusters in India

S. No.	Name of State/ UT	SME Clusters	Handicraft Clusters	Handloom Clusters
1.	Jammu & Kashmir	10	179	10
2.	Himachal Pradesh	18	49	7
3.	Punjab	82	34	
4.	Chandigarh	-		
5.	Uttaranchal	44	62	8
6.	Haryana	42	38	1
7.	Delhi	-	42	
8.	Rajasthan	77	108	6
9.	Uttar Pradesh	359	325	50
10.	Bihar	81	135	14
11.	Manipur	4	22	39
12.	Mizoram	6	4	2
13.	Meghalaya	4	11	7
14.	Assam	17	26	27
15.	West Bengal	47	257	39
16.	Jharkhand	26	42	35
17.	Orissa	16	268	36
18.	Chhattisgarh	41	27	10
19.	Madhya Pradesh	228	154	17
20.	Gujarat	369	198	9
21.	Maharashtra	69	208	6
22.	Andhra Pradesh	68	150	52
23.	Karnataka	227	147	23
24.	Kerala	255	90	24
25.	Tamil Nadu	350	143	49
26.	Andaman & Nicobar Islands	1		
27.	Arunachal Pradesh		9	15
28.	Daman and Diu		1	
29.	Goa		38	
30.	lakshadweep		3	
31.	Nagaland		17	29
32.	Pondicherry		2	
33.	Sikkim		14	
33.	Tripura		61	25
Total	**2443**	**2864**	**540**	

Source: Das et al., (2007); Singh (2010) and MSME (2011)

Table 6: Brief description of selected clusters

Cluster	Products
Coir cluster of Alleppey	Mats, mattings, etcetera, ropes
Machine tools cluster of Bangalore	Metal cutting machines
Chanderi Handloom cluster	Pagri, saris, dupattas
Chittoor Fruit Processing cluster	Fruit pulp, concentrate and purees
Heavy Engineering fabrication cluster of Trichy	Boilers, heat exchangers, pressure vessels
Solapur terry towel cluster	Bed sheets, towels
Brass and bell metal cluster of Rengali	Metal products
Floriculture cluster of Pune	Flower cultivation
Crochet lace cluster of Narsapur	Dollies, furnishings, garments, tablemats
Mojari clusters of Rajasthan	Handcrafted ethnic footwear (Mojari)
Hosiery cluster of Ludhiana	Woollens, acrylic and acrowool / wollens
Rubber cluster of Kottayam	Rubber products like rubber mats, rubber bands, Hawaii chappals
Kannaur handloom cluster	Table, kitchen and bed linen, furnishings, curtains, fabrics (shirts), dhotis
Brass parts cluster of Jamnagar	Machinery tools, jigs, fixtures, electrical pins, holders, cycle tube wars
Hosiery cluster of Tirupur	Undergarments, T-shirts, cardigans, jergeys, pullovers, nightwear, ladies' blouses, skirts, trousers, sportswear
Hand block printed textile cluster of Jaipur	Hand printed products
Diesel engine and engineering cluster of Rajkot	Diesel engine, pumps, watch cases
Wet grinder cluster of Coimbatore	Grinders
Bidri cluster of Bidar	Flower vase, metal and silver products
Stone carving cluster of Konark	Handcrafted stone products

Source: (FMC, 2006), (Das et al., 2007), Russo et al., (2000), and Planning Commission (2012)

TO EXPLORE THE REASONS OF "TECTONIC SHIFT" OF CUSTOMERS TOWARD PATANJALI PRODUCTS

Deepa Katiyal *

"We don't know markets or marketing but what we know is serving the people by providing them high quality products at attractive prices." Acharya Balkrishna, MD, Patanjali Ayurved Ltd. When these words were said at that time Acharya Balkrishna was not taken seriously by the experts. But now everybody is surprised and a big question is arising in everybody's mind, how a small company can have billions of profits in such a short span? Patanjali Ayurved Limited is a Haridwar based Indian FMCG company. It was founded in 2006. It has become the fastest growing organization in FMCG sector. Its growth rate has created a high benchmark for its competitors. The popularity and success has created history and because of that the researcher wants to investigate the factors responsible for it. This research will focus on the reasons of the growth of this organization and factors responsible for consumer preference towards Patanjali Products and will also highlight the reasons of not preferring Patanjali Products. A questionnaire is prepared and factors for its growth are identified. The customers are segmented according to their demographical profile. The hypotheses are tested by using one-way ANOVA and t-test.

Keywords: FMCG, ANOVA, t-test, customer satisfaction, demographical profile.

The turnover of Patanjali Ayurvedic Limited of Baba Ramdev grew 150% to more than Rs 5,000 crore in 2015-16 from about Rs 2,000 crore in the previous year, and the Baba predicts the growth of the brand would hurt the market share of existing FMCG majors. This we are also observing that slowing Patanjali Brand has grown so big and famous that we want to find out the reasons for its success. Some of the factors researcher have identified and described.

Ramdev Baba as Brand Ambassador: Baba Ramdev rose to national fame as a yoga guru through his programs on TV channels - Sanskar in 2001 and Aastha from 2003. He readily acknowledges the role of the media in his rise. He did direct advertisement of the products on all the media sources. He is not only popular in India but also abroad.

Smart Pricing: Yet another reason for Patanjali's success is the thrift it practices. The price of the products is comparatively lower than the other brands. Customers at least can try the product because there is not much loss of money.

Easy Availability: Initially, Patanjali shunned the conventional distribution network, preferring to rely on its own channels of super distributors, distributors, Chikitsalayas (franchise dispensaries) and Arogya Kendras (health centres which sell Ayurvedic remedies). Once it turned to retail outlets from 2011, revenue began to multiply manifold. It is very important factor because in Ayreveda medicine has to be taken for long time so easy availability is must. Now they are also selling their products online.

Variety of Products: Patanjali is selling wide range of products from Desi ghee to detergents and from beauty products to healthy drinks. They are trying to capture all type of markets through one brand. It is a continuous process as they are in a way to launch many new products. Ramdev said "To reach our growth target, we will venture into new categories such as dairy, animal feed and khadi garments for yoga. We will enter dairy segment this year with the launch of milk, cheese, butter milk and paneer,"

Swadeshi Factor: "Humara ek simple funda hai: MNCs ko replace karna. We have a simple principle: we want to replace MNCs We don't want to put anyone down, but we would like to instill swadeshi pride so that Indian money does not go out of the country.," said Baba Ramdev. People of India are liking and getting attracted towards this strategy and phenomena.

Advertising: Patanjali's own advertising was limited in the past, but has increased considerably of late, with ads appearing on general entertainment TV channels. Almost on every channel you will find their advertisement. The promotional strategy is excellent as they are concentrating only on purity, healthy and highlighting all positive factors of their products.

*** Associate Professor, Shri Vaishnav Institute of Management, Indore (M.P.)**

Good quality and Purity: Consumers of this millennium have become more concerned about their health and also inclined to maintain quality of life which is reflected through the preferential consumption of those products that protects the good state of their health as well as provide maximum satisfaction. In pursuit of a healthy lifestyle Indian have become more inclined to Ayurvedic or Herbal therapy as alternative healthcare for natural cure.

Ayurvedic: Patanjali's success can be attributed to new product in almost all categories with Ayurveda base. The products are differentiated which appeals to the Indian belief in Ayurveda & natural remedies. Patanjali Ayurveda possesses a wide range of products. They are not only having ayurvedic medicines but also amla juice, aloe vera juice etc. The products are innovative and reasonably price.

No Chemicals: The company's main mission is to provide world class products to consumers without adding any harmful preservatives or using natural preservatives as far as possible. There are so many products available in the market which is harmful for us like juices, soft drinks, chocolates, because of chemicals added to preserve, colors are added to maximize the attractiveness and life of the products.

Good Reviews of the Products: Customers are the masters of their money and they have an enormous influence on the economic market change because they possess the ability to implement and coordinate their choice of spending or saving in the purchase decision. Customers' satisfaction is a very important factor for the success of the product. Good reviews of the products by the customer makes a product a brand. Whatever is the demand of the customers are fulfilled by the Patanjali Company like online availability of products is attracting young customers. Good packaging is increasing satisfaction level in ladies.

Health Benefits: Patanjali has targeted middle class families and is trying to turn them towards healthy food habits. They are recommending yoga, meditation and also helpful home remedies which are beneficial for healthy life. They have targeted the remedy for constipation, body pain, obesity which is very common in individuals. People are taking their healthy products with their regular medicines also.

Rationale of the Study

It was found that researchers have worked on the factors of success of Patanjali Ltd. but not much has been said about its impact on demographical variables. The study will also concentrate on the reasons which are responsible for not preferring Patanjali Products. The recommendations will be given for attracting the customers based on the results and analysis of the research.

Objectives

1. To study the factors responsible for the success of the Patanjali Ltd.
2. To study the various factors responsible for consumer preference toward Patanjali Products.
3. To highlight the reasons for not preferring Patanjali Products by the consumers.

I. Review of Literature

Piyush Panday (2015), executive chairman Ogilvy South Asian brands "Ramdev is a great proponent of a direct marketing FMCG company, and one step ahead of Avons and Amways. He is an all-rounder who is batting, bowling and fielding at the same time."

Layak and Singh (2015), in his report "Desi bustle v/s MNC muscle" said that Ramdev's Patanjali is setting trend for HUL and Baba Ramdev's unconventional marketing and strong follower base coupled with aggressive pricing has helped him overtake established players in ayurvedic FMCG like Emami and Himalaya.

Roy, Lath and Sharma (2015) believe that factors like strong innovation and new products pipeline, pricing discounts, ayurvedic and natural propositions with low A&P spends and manufacturing indigenously lend Patanjali's products a competitive advantage.

Vyas (2015) believes Patanjali instead of outsourcing like established, listed FMCG firms, it has flourished on a backward integration model, using large tracts of land to cultivate and run its factories, is the major factor of success.

Singh and Rajni (2015) reports that Patanjali Ltd. perhaps lacks most ingredients for building a large-scale consumer goods business, be its negligible A & P (advertising & promotion) spends or distribution network. Yet, the brand power of a yoga guru has brought Patanjali Ltd. Into the top league.

G Satheesh Raju, R Rahul (2016), in their study concluded that swadeshi and good quality factors are the main factors for the success of the Patanjali products. Advertisement and reasonable price is also having high

impact on the customers. They found that Ramdev Baba is not able to influence the public to buy the products.

Chandiraleka, Hamsalakshmi (2016) in their study concluded that trust and quality are the main factors for the success of Patanjali Products. With Garrett's Ranking Technique, ranking of all the factors were done. Chemical free, no adulteration, more nutritious got high ranking.

II. Research Design & Methods

The present study is to find the factors responsible for the growth of Patanjali Ayurved Ltd and also to find out the factors and reasons for preferring and not preferring Patanjali products.

a. **Data Collection Methods:** The data has been collected from both primary and secondary data. Primary data has been collected with the help of a structured questionnaire, personal interviews and discussions with people of Indore. Secondary data is collected from various sources such as books, journals, Magazines, Company reports, websites, etc.
b. **Research Design:** The study is Descriptive in nature.
c. **Sampling:** The sample of 159 respondents of Indore city were selected in which people of all age, gender, qualification and income group are included. Convenient sampling technique is used for survey.
d. **Research Tools and Techniques:** Questionnaire of likert scale was developed in1 to 5 scale, 1- strongly disagree, 2- disagree, 3- neutral, 4- agree, 5- strongly agree**.** Reasons of non-preference of Patanjali Products were taken on Yes/ No scale. One way Anova and t-test were applied for hypotheses testing with 5% significance level.

Hypotheses:
Ho1: Age has no impact on the factors of consumer preference for buying Patanjali products.
Ho2: Gender has no impact on the factors of consumer preference for buying Patanjali products.
Ho3: Qualification has no impact on the factors of consumer preference for buying Patanjali products.
Ho4: Income has no impact on the factors of consumer preference for buying Patanjali products.

III. Analysis, Discussion & Findings

The data was collected in Indore where170 questionnaires were distributed but 163 respondents took part in research. Out of that 100 were using Patanjali Products and 63 were not using Patanjali Products. The study of factors responsible for the success and preference of Patanjali Products over other FMCG Products was carried on those Respondents who were using Patanjali products. Whereas the reasons of not preferring Patanjali Products over other FMCG products was conducted on respondents who were not using Patanjali Products.

Table 1 shows that Respondents more than 50 years of age are using more of Patanjali Products. Females have taken participation in research enthusiastically than males. Professionals are more aware of the Patanjali products and are interested in buying and using whereas the teenagers, school going children awareness and liking is very less. In income group also higher middle class respondents are using Patanjali Products. Lower class respondents whose income was less than Rs 20,000 was also considered but most of them were not aware of the Patanjali products or they don't have much knowledge about the products and its characteristics. That's why they are excluded from the research. Most of the respondents in Table 2 who are not much interest in Patanjali Products are young graduates belonging to second group of income. Although every segment of the demographical profile is found in both the groups.

Table 3 shows the Descriptive Statistices of the respondents who prefer Patanjali Products with mean and standard Deviation. Table 4 explains the Descriptive Statistics of the respondents who don't prefer Patanjali Products. Mean and Standard Deviations are also calculated.

Hypotheses Testing
Table 5 shows the results of the first Null Hypothesis **Ho1**: **Age has no impact on the factors of consumer preference for buying Patanjali products**, one way Anova was applied and tested at 5% significance level. It was found that seven factors (Price, Swadeshi, no chemicals, Baba Ramdev, Good quality, Health Benefits, Advertisement) of consumer preference for Patanjali Products are rejected, whereas three factors (Ayurvedic, Good experience, Availability) of consumer preference for Patanjali Products were accepted.

Table 6 shows the results of second Null Hypothesis **Ho2**: **Gender has no impact on the factors of consumer preference for buying Patanjali products**, t test was applied and tested at 5% significance level. It was found that only three factors (price, swadeshi, good quality) of consumer preference for Patanjali Products are rejected, whereas seven factors (No chemicals, Baba Ramdev, Good quality, Health Benefits, Advertisement, Good experience, Availability) of consumer preference for Patanjali Products were accepted.

Table 7 shows the results of the third Null Hypothesis **Ho3: Qualification has no impact on the factors of consumer preference for buying Patanjali products**, one way Anova was applied and tested at 5% significance level. It was found that only three factors (price, swadeshi, availability) of consumer preference for Patanjali Products are rejected, whereas seven factors (No chemicals, Baba Ramdev, Good quality, Health Benefits, Advertisement, Good experience, Ayurvedic) of consumer preference for Patanjali Products were accepted.

Table 8 shows the results of the forth Null Hypothesis, **Ho4: Income has no impact on the factors of consumer preference for buying Patanjali products**, one way Anova was applied and tested at 5% significance level. It was found that four factors (price, no chemicals, Advertisement, availability) of consumer preference for Patanjali Products are rejected, whereas six factors (swadeshi, Ayurvedic, Good quality, Health Benefits, Advertisement, Good experience) of consumer preference for Patanjali Products were accepted.

Analysis and Interpretation of the Reasons for Non-Preference of Patanjali Products by the Respondents

To know the reasons of not preferring Patanjali Products over other FMCG products, six questions were formulated and on percentage and frequency basis analysis is done. The yes/ No options were given for the statement to have the exact answers**.**

Table 9 shows the analysis of non-preference for Patanjali products. Most of the respondents (69.3%) have heard about the Patanjali Brand but don't have much knowledge about the products. 68.3% of the respondents feel that purity and no chemicals is just a publicity to increase the sale, although all the products of different brands are same. 63.5% of the respondents have checked the price and noticed that some products are cheap but many are of the same price as other FMCG products. 82% of the respondents are brand conscious or they have a habit of using some brands from so many years, so don't want to change it.

IV. Conclusion

To conclude the study, the following finding can be enlisted.

- Price, Swadeshi, Good Quality, No Chemicals, Baba Ramdev, Good Quality, Health Benefits, Advertisement, Good Experience, Ayurvedic are the ten main factors on which the study is based. These are the key notations for understanding the Patanjali LTD.
- Impact of Age on the factors of consumer preference is very significant. Respondents who were more than fifity years have high impact of Patanjali Products. They are using lot of range of Patanjali products and are satisfied also.
- Impact of gender is not found to be so significant but it was noticed that female is more aware of Patanjali Poducts and are using some of the beauty Products with satisfaction.
- Impact of qualification on the consumer preference of Patanjali products is significant in some of the factors. The professionals specially Doctors C.A., Engineers are using Patanjali Products and are satisfied also.
- Impact of income plays a very important role in selecting Patanjali products. Middle class people with income group Rs 20.000 to Rs 40,000 are using maximum of Patanjali Products.
- Sticking to the brands they are already using was the strongest reason found during research for not preferring Patanjali products. Most of them know the brand but not ready to shift to other brand products. Some strong marketing strategies have to be used by Patanjali ltd., especially for young segment of the customers. They also should sell their products in small shops and markets to make the brand popular in lower class customers.

Limitations of the Study

The study is done in urban area of Indore, Madhya Pradesh. The data collected is from 159 respondents, if sample is increased may be the results are different.

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Appendix: Tables AND Figures

Table 1: Demographical Profile of the Respondent, who Prefer Patanjali Products.

Demographical Profile	Description	Frequency	Percentage
Age	Less than 30 years	30	30.0
	30-50 years	26	26.0
	Above 50 years	44	44.0
Gender	Male	38	38.0
	Female	62	62.0
Qualification	Less than Graduation	5	5.0
	Graduate/Post Graduate	44	44.0
	Professional Degree	51	51.0
Income	20,000-30000	18	18.0
	30000-400000	40	40.0
	50000 and above	42	42.0

Table 2: Demographical Profile of the Respondent, who don't prefer Patanjali Products.

Demographical Profile	Description	Frequency	Percentage
Age	Less than 30 years	23	39.0
	30-50 years	19	32.2
	Above 50 years	19	32.2
Gender	Male	25	42.4
	Female	34	57.6
Qualification	Less than Graduation	3	5.1
	Graduate/Post Graduate	31	52.5
	Professional Degree	25	42.4
Income	Rs 20,000-30000	19	32.2
	Rs 30000-400000	21	35.6
	Rs 50000 and above	19	32.2

Table 3: Descriptive Statistics of the respondents who prefer Patanjali Products.

Factors	N	Minimum	Maximum	Mean	Std. Deviation
Price	100	1.00	5.00	3.5500	1.09521
Swadeshi	100	1.00	5.00	3.9300	.98734
Ayurvedic	100	1.00	5.00	4.4545	5.22020
No Chemicals	100	1.00	5.00	3.5800	.91210
Baba Ramdev	100	1.00	5.00	3.4700	.90403
Good quality	100	2.00	5.00	3.9100	.68306
Health Benefits	100	1.00	5.00	3.8900	.89775
Advertisement	100	1.00	5.00	3.3300	1.11966
Good Experience	100	2.00	5.00	3.9100	.73985
Availability	100	1.00	5.00	3.5300	1.05844

Table 4: Descriptive Statistics of the respondents who don't prefer Patanjali Products

Factors	N	Minimum	Maximum	Mean	Std. Deviation
Awareness	63	1.00	2.00	1.3016	.46263
Regret Usingproduct	63	1.00	2.00	1.6667	.47519
Purity a Propaganda	63	1.00	2.00	1.3175	.46923
No Difference In Price	63	1.00	2.00	1.3651	.48532
No Difference In Quality	63	1.00	2.00	1.4603	.50243
Stick to My Brand	63	1.00	2.00	1.1746	.38268

Table 5: Impact of Age on different factors of consumer preference for Patanjali Ltd.

S. No.	Factors	F	Sig. at .05 level	Result
1.	Price	6.287	.003	Rejected
2.	Swadeshi	6.338	.003	Rejected
3.	Ayurvedic	.974	.381	Accepted
4.	No Chemicals	6.041	.003	Rejected
5.	Baba Ramdev	2.958	.050	Rejected
6.	Good Quality	6.973	.001	Rejected
7.	Health Benefits	4.293	.016	Rejected
8.	Advertisement	3.229	.044	Rejected
9.	Good Experience	2.724	.071	Accepted
10.	Availability	2.137	.123	Accepted

Table 6: Impact of Gender on different factors of consumer preference for Patanjali Ltd.

S. No.	Factors	F Value	Sig. at .05 level	Result
1.	Price	16.990	.000	Rejected
2.	Swadeshi	11.749	.001	Rejected
3.	Ayurvedic	3.282	.073	Accepted
4.	No Chemicals	.006	.936	Accepted
5.	Baba Ramdev	.225	.636	Accepted
6.	Good Quality	3.802	.050	Rejected
7.	Health Benefits	.161	.689	Accepted
8.	Advertisement	.046	.830	Accepted
9.	Good Experience	.189	.664	Accepted
10.	Availability	.243	.404	Accepted

Table 7: Impact of Qualification on different factors of consumer preference for Patanjali Ltd.

S. No.	Factors	F Value	Sig. at .05 level	Result
1.	Price	4.016	.021	Rejected
2.	Swadeshi	4.459	.014	Rejected
3.	Ayurvedic	.243	.785	Accepted
4.	No Chemicals	.337	.715	Accepted
5.	Baba Ramdev	.618	.541	Accepted
6.	Good Quality	.195	.823	Accepted
7.	Health Benefits	.393	.676	Accepted
8.	Advertisement	1.369	.259	Accepted
9.	Good Experience	.502	.607	Accepted
10.	Availability	6.854	.002	Rejected

Table 8: Impact of Income on different factors of consumer preference for Patanjali Ltd.

S. No.	Factors	F Value	Sig. at .05 level	Result
1.	Price	4.459	.014	Rejected
2.	Swadeshi	.342	.711	Accepted
3.	Ayurvedic	.298	.743	Accepted
4.	No Chemicals	3.034	.050	Rejected
5.	Baba Ramdev	.997	.373	Accepted
6.	Good Quality	2.114	.126	Accepted
7.	Health Benefits	1.744	.180	Accepted
8.	Advertisement	3.442	.036	Rejected
9.	Good Experience	1.098	.338	Accepted
10.	Availability	3.889	.024	Rejected

Table 9: Analysis of Non Preference for Patanjali Products

S. No.	Statements	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	I am Aware of Patanjali Products with full knowledge of its range of products.	44	69.8	19	30.2
2.	After selecting the brand, I feel regretted for selecting it.	21	33.3	19	30.2
3.	All brands are same in ingredients, purity is just a propaganda	43	68.3	20	31.7
4.	Very little difference in price of different brands.	40	63.5	23	37.5
5.	No big difference in quality among different brands	34	54.0	29	46.0
6.	I buy only my choice of brand never other brands	52	82.5	11	17.5

EXPLORING DIMENSIONAL STRUCTURE OF ANTECEDENTS OF ONLINE SHOPPING BEHAVIOUR

Deepak Halan *

This paper provides practical insights of conducting Exploratory factor analysis (EFA) to reveal the underlying structure of a fairly big set of variables related to antecedents of online shopping behavior. The e-commerce policy formulated by the Indian government in March 2016, compelled online shopping players to focus more on improving customer experience, rather than giving large discounts, to achieve higher levels of loyalty. Therefore, understanding the antecedents of online shopping behavior becomes even more significant. To begin with, extensive scholarly literature review on studies related to antecedents of online shopping behavior was conducted. This helped in generating an initial pool of variables on motives for shopping online. However, since the literature was fairly heterogeneous, there was a need for an exploratory study. Based on the insights generated by a qualitative study and expert opinion, the final set of variables to measure online shopping behavior was shortlisted. An empirical study based on a sample size of 175 was carried out. EFA using Varimax rotation was run three times and a set of 46 items was reduced to 36. The total variance explained was 72.45%, the number of factors was reduced from 12 to 9 and a simple and interpretable dimensionality structure was identified. The study has practical implications for the e-tailers in terms of gaining a better understanding of the online shopper behavior in the context of changing market dynamics.

Keywords: Online shopping, Buying behavior, E-Commerce, Factor analysis, Dimension reduction, EFA.

The e-commerce policy formulated by the government in March 2016 (The Press Note No. 3 (2016 Series) compelled online shopping players to focus more on improving customer experience, rather than giving large discounts, to achieve higher levels of loyalty. The e-commerce policy said that the e-tailers cannot directly or indirectly impact the sale price and not more than 25% of the sale via marketplaces can be from one single vendor or its group companies. Therefore, understanding the antecedents of online shopping behavior becomes very significant. The main purpose would be to enhance customer experience by providing basic product variety, personalized services, convenience in order fulfillment, post purchase engagement, etc. For example, Flipkart is presenting pre-approved loans to enable customers to buy products on credit and Myntra is offering 'try and buy' at the time of delivery. The study has practical implications for the e-tailers in terms of gaining a better understanding of aspects that are important to online shoppers. The findings are likely to empower the etailers to understand shopper's expectations and as a consequence, to embark on more effective retail marketing strategies so that they can differentiate themselves.

I. Review of Literature

To being with, an extensive secondary research was carried out using various keywords to select appropriate research papers mostly from eminent academic databases'. This yielded about 60 research papers (mentioned under 'References' towards the end of this paper) which were studied. Amongst these, papers published since 2001 and with 14 or more citations – (19 papers in all) were short listed and content analysed. The papers were scanned for insights on parameters that determine choice of online shopping site – from the consumer's perspective. Most of these papers were based on empirical studies and were published in reputed journals. Amongst research papers which were based on empirical studies, it was found that The Theory of Planned Behavior (TPB) emerged as the most common underlying theory. Content analysis brought out several controllable elements influencing the online buying behavior and these were finally categorised into the following six main factors. Amongst these factors, those that were supplementary to ones used in a typical TBP model and could be tailored to the model, were identified. Hence on basis of this critical review, a conceptual model was developed.

Influence of Behavioral Attitude on Intention

Attitude toward the behaviour is a person's overall evaluation of the behaviour. According to the model, a

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person's attitude towards performing a specific behavior has an indirect relationship to behavior? Ranadive (2015) concluded that the attitude influences consumer behavioural intention by validating the sequential changes in users' beliefs and attitude and examining their effects on the intentions for shopping groceries on-line. It emerged from the literature review, that attitude impacts behavioural intention.

Impact of Perceived Ease of Use

Chang & Chen (2009) suggested it was not possible for one study to incorporate all possible customer interface features from all previous studies. Since for an e-tailer, the customer interface acts as the store ''atmospherics'' (and attempts to create a web environment that has positive emotional effects on prospective shoppers in terms of making the purchase), they adopted four components of customer interface quality that deal with its atmosphere i.e. a) Convenienceb) Interactivity c) Customization d) Character. From the literature review it is found that perceived ease of use influences attitude.

Impact of Perceived Usefulness

Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989: p.320). Khalifa, M., & Liu, V (2007) highlighted that both perceived usefulness and online shopping satisfaction have significant positive effects on online repurchase intention. Perceived usefulness also has a significant positive effect on satisfaction and after sales service and transaction efficiency are two most important and equal drivers of perceived usefulness. Gehrt et al. (2007) discovered that buyers belonging to the shopping enjoyment segment are optimistically inclined toward recreation, quality, and impulse orientations when buying online. Verhoef & Langerak (2010) concluded that shopping enjoyment is not associated with relative advantage (physical effort is linked to it) or perceived compatibility (time pressure relates to it), but both these factors relate positively to intention to adopt electronic grocery shopping. From the literature review it is evident that perceived usefulness influences attitude.

Influence of Subjective Norms on Intention

Subjective norms are a person's own estimate of the social pressure to perform the target behaviour. Javadi et al (2012) discovered that family members, friends and peers' online experience and suggestions positively influence online buying behavior. Literature review shows that subjective norms influence behavioural intention. As per Ranadive (2015), subjective norm factor reached a level of significance which indicates that the influence of social relationships (family, friends, colleagues etc.) on on-line grocery shopping weakly but positively affects the consumer's intention to purchase groceries online. It is evident from literature review that subjective norms influence behavioural intention.

Influence of Trust on Intention

Trust relates to feelings of vulnerability, which are aggravated online by the remote nature of the relationship with the e-retailer. In the context of online shopping, trust manifests itself chiefly in terms of security of the transaction and the reputation of the online company. Park & Kim (2003) put forward that service information quality and security perception were found to affect information satisfaction. Khalifa & Liu (2007) also suggest that though the effect of security, convenience and cost savings are comparatively small, it is significant. Literature review shows that trust influences behavioural intention. Chang & Chen (2009), found that the perceived security is positively related to customer satisfaction and switching cost, these aspects, in turn impact loyalty. Basis literature review, we can conclude that trust influences behavioural intention.

These findings enabled development of a conceptual model which can be thought to be an enhanced version of the typical TPB model.

II. Research Design & Methods

This methodology paper is based on empirical research. There was a need for an exploratory study, given the fragmentation of the literature. Goldberg and Digman (1994) put forward that item selection "is by far the single most important decision to be made in any investigation, and it should be guided by theory and/or the findings from past research" (p. 218).

Given the purpose of this research, an initial pool of variables on motives for shopping online was generated based on extensive review of literature. Qualitative depth interviews were then conducted with 10 respondents who qualified as relevant target audience. These exploratory interviews were spread by age, income and occupational backgrounds. The respondents were selected through acquaintance and snowballing. The responses yielded key insights w.r.t the various aspects of online shopping and also the language to be used while framing the questions. Based on the insights generated and expert opinion, the final set of variables to measure online shopping behaviour were shortlisted.

The quantitative study survey instrument was pre-tested amongst few experts as well as administered to a small number of target respondents. The time taken to complete each questionnaire was measured. Revisions were made as needed in case any text was perceived as ambiguous or difficult to understand.

For the quantitative study, judgmental sampling was used to select online shoppers largely via social media contacts on WhatsApp, Facebook and LinkedIn and snowballing. Email invites carrying the survey were also sent, to cover the sample. https://www.questionpro.com – an online market research tool was used to facilitate the online survey. For this study the target audience was defined as those who are 18 years or above, resided in India and have shopped online, off and on or frequently, in at least last 6 months to purchase a tangible product. All the data collected, was checked variable wise using filters in Excel – for example - the average time spent in answering all the questions was one of the parameters used in filtering out outliers during sanity data checks. In all, 185 online submissions were received. Out of these 40 were rejected and balance 145 were found usable. The empirical results are thus based on 145 completely filled in questionnaires.

The data collected from consumers was analysed quantitatively using SPSS. Exploratory Factor Analysis (EFA) was used to determine the dimensionality of items. Exploratory factor analysis and not confirmatory factor analysis, should be applied in case the underlying dimensions of a data set are unidentified (Stewart,1981). Data analysis was conducted using Principal Component Analysis.

Respondents were asked to think about a specific online shopping site which they have most visited in last 6 months. Majority of the questions were based on shopping experience on 'this site'. Apart from demographics, the research instrument also carried questions related to online shopping experience in general. The EFA was carried out on the following 46 items that measured various aspects of online shopping experience on 'this site' on a 7-point scale ranging from strongly disagree to strongly agree, to capture the degree to which respondents agreed or disagreed with each statement.

Independent Variables

Perceived Service Quality related (11)
PSQ1-Customer care is very helpful
PSQ2-Offers suitable payment options
PSQ3a- All items will actually be delivered to my home
PSQ3b-All items ordered will be delivered on time
PSQ3c - Ordered items will arrive safely
PSQ3d - Items ordered will be delivered in a proper working condition
PSQ3e - Site will not ask me to pay more for ordered items at time of delivery
PSQ4-Has an easy return policy
PSQ4a-Does not have any hidden terms & conditions in its return policy
PSQ4b-Has a fast process for returns
PSQ5-Offers good after sales service

Perceived usefulness (11)
PU1: Easy to compare product prices while shopping on this site.
PU2: Provides access to useful in-depth product information.
PU2a: Information required for shopping on this site is sufficient
PU3: Saves me time as compared to other sites.
PU4: Items that I am looking for are available and in-stock on this site
PU5: Provides customised service to me
PU6a: Prices are lower than those available on other such sites
PU6b: Cheaper than those offered by a physical store
PU7: Attractive offers and deals from time to time
PU8: Rewards program that results in considerable savings
PU9: Not offering high discounts, as what we're being offered in the last 6 months

Perceived ease of use (7)
PEU1: Easy to search and find way while shopping on this site
PEU2: Convenience of searching for and ordering products
PEU3: High interaction speed
PEU4: Interactive features for problem resolution
PEU5: Information required for shopping is easy to locate
PEU6 Has all required or necessary product information in-depth
PEU7: Offers complete information on all its deals.

Attitude (3)
A1: Shopping on this site is a good idea.
A2: Love using this site
A3: Like to shop online using this site.

Subjective Norms (7)

Interpersonal influence (family, friends, colleagues etc.)
II1: People who are important to me encourage me to use this site
II2: Family feels this is the right site for online shopping
II3: Classmates and friends feel this is the right site for online shopping
II4: Relatives feel this is the right site for online shopping

External influence choices
EI1: Have read news reports which say this is a good site for online shopping.
EI2: Mass media reports have influenced me to try this site.
EI3: After watching the advertisements on various media, I was tempted to try this site

Trust (7)
T1-Does not deliver spurious or fake products
T2- Has a good reputation in the market
T3 - Cares and invests on its customers
T4- Will not misuse my personal details
T5- Is secure for transmitting sensitive information
T6- Is free from errors and contains accurate, current and complete information
T7- Offers authentic customer reviews

Depandant Variables

Behavioral intention (3)
BI1 Plan to shop on this site again
BI2 Intend to use this site within the near future
BI3 Will recommend this site to others

III. Results & Analysis

Exploratory factor analysis (EFA) is a statistical method used to reveal the underlying structure of a fairly big set of variables. It is a tool within factor analysis which enables identification of the underlying relationships between measured variables. EFA is commonly used by researchers when developing a scale i.e. a collection of questions used to measure a specific research theme and helps to identify a set of latent constructs underlying a sequence of measured variables Reise, Steven P., et al. (2000).

EFA was carried out by inputting in all independent variables (46 items which included direct as well as indirect independent variables, thus leaving out only the three statements related to Behavioral intention which were the ultimate final dependant variables) in the SPSS 'Dimension Reduction' tool. Varimax rotation was chosen and number of iterations was set at 50 (since a rotated matrix was not achieved in 25 iterations). In order to facilitate the interpretation, factor loadings with values less than 0.3 were suppressed. Kaiser-Meyer-Olkin (KMO) Test - a measure of how suited the data is for Factor Analysis (based on sampling adequacy for each variable in the model and for the complete model) yielded a value of more than 0.5 implying that factor analysis was apt in this case. The Bartlett's test of Sphericity that helps us understand the correlation between the variables, generated a value of 0, i.e. less than 0.5, hence implying that there was the required correlation and it was significant. All the communalities were found to be sufficiently high. Hence the analysis was taken forward towards rotation of the factor matrix. The EFA using varimax rotation on a set of 46 items initially produced 12 factors –based on the factor loadings that emerged in the Rotated Component Matrix. A content analysis was conducted to purify the uncovered factors. Since items measuring the same factor should have constant substantive meanings, items that had inconsistent substantive meanings with the factor or that had low factor loadings were removed from further analysis. The item "Easy to search and find my way while shopping on this site" was removed since it emerged as a standalone variable and the items – "information required for shopping is sufficient" and "Information required for shopping is easy to locate" were already representing this information. The item "Not offering high discounts, as what we're being offered in the last 6 months" was made a measured variable as it emerged as a standalone variable. The 3 Attitude related items were also removed, since these had been loading on a factor, on which another set of items (unrelated to Attitude) were loading. The item "Always like to shop online using this site" was retained since it had the highest loading, was least ambiguous, easiest to understand and was declared a measured variable.

In the 2nd run, the remaining 41 items were again factor analyzed. Based on the factor loadings observed in the Rotated Component Matrix, 12 factors emerged. The KMO value satisfactorily stood at 0.615 while the Bartlett's test of Sphericity generated a value of 0 (i.e. less than 0.5, hence implying that there was the required correlation and it was significant). All the communalities were found to be sufficiently high and the total variance explained was 74.30%. Based on the factor loadings in this run, the following purifications were made: "Rewards program for me that results in considerable savings" was removed from the items list, since it emerged as a

standalone factor and hence was declared as a measured variable. The item "Easy to compare prices of products" was removed since it did not load logically on any of the factors that emerged and moreover there were already items representing this information i.e. 'Information required for shopping is easy to locate' and 'Offers convenience of searching for and ordering products'. In the 3rd run, the remaining 39 items were again factor analyzed. Based on the factor loadings observed in the Rotated Component Matrix, 9 factors emerged. The KMO value satisfactorily stood at 0.625, the Bartlett's test of Sphericity, generated a value of 0 (i.e. less than 0.5, hence implying that there was the required correlation and it was significant) and all the communalities were found to be sufficiently high. The total variance explained was 73.87%.

'In the last 6 months I have noticed a marked improvement in the quality of service' and 'Provides customised service to me' were declared measured variables, since they did not load logically on any of the factors that emerged. 'Will not ask me to pay more for ordered items at time of delivery' was removed since it did not load logically on any of the factors that emerged and moreover during the pilot study there was some feedback that indicated that respondents were not able to understand this item entirely.

The following 9 factors emerged from the EFA iterations.

1. Trust

This factor consisted of the following items that loaded high on it (mostly 0.54 and above) and were logically related to Trust.

- Good reputation in the market
- Cares for and invests on its customers
- Secure for transmitting sensitive information such as debit/credit card details etc
- Feel comfortable sharing my personal details required for shopping on this site
- Offers useful customer reviews (i.e. they constitute feedback from genuine customers)
- Free from errors and provides accurate, updated and complete information
- Offers lower prices as compared to other sites
- Does not deliver fake products

2. Ease of Use

This factor consisted of the following items that loaded high on it (mostly 0.55 and above) and were logically related to 'Ease of Use'.

- Has high interaction speed
- Has interactive features (such as online chat, easy phone access etc) which help in quick problem resolution
- Information required for shopping on this site is sufficient
- Offers complete information on all its deals. Hence, I do not need to refer to other sources such as deal site
- Information required for shopping on this site is easy to locate
- Offers convenience of searching for and ordering products

3. Easy & Fast Returns

This factor consisted of the following items that loaded high on it (mostly 0.68 and above) and were logically related to the Returns Process.

- Has a fast process for returns?
- Has an easy process for returns?
- No hidden terms & conditions in its return policy
- Offers good after sales service such as product installation, demo etc (this item was included under the 'Easy & Fast Returns' factor based on the logic that returns are part of the after sales service offered by online shopping sites)

4. Influence of Media & People

This factor consisted of the following items that loaded high on it (mostly 0.43 and above) and were logically related to 'Influence of Media & People'.

- Read news reports which say this is a good site for online shopping
- Influenced by mass media reports to try this site
- People who are important to me encourage me to use this site
- After watching the advertisements on various media, I was tempted to try this site

5. Value for Money (VFM)

This factor consisted of the following items that loaded high on it (mostly 0.72 and above) and were logically related to 'Value for Money' or savings.

- Attractive offers and deals from time to time
- Prices are cheaper than those offered by a physical store
- Items that I am looking for, are available and in-stock on this site (this item was included under the VFM factor based on the logic that often we do end up

saving money but at the cost of being left with no other option but to buy substitutes)

6. Subjective Norms

This factor consisted of the following items that loaded high on it (mostly 0.42 and above) and were logically related to 'Subjective Norms' i.e. assessment of the social pressure.

- Relatives feel this is the right site for online shopping
- Classmates and friends feel this is the right site for online shopping
- Family feels this is the right site for online shopping

7. Time Saving

This factor consisted of the following items that loaded high on it (mostly 0.66 and above) and were logically related to saving of time.

- Feel assured that all items ordered will be delivered on time
- Shopping on this site saves me time as compared to other sites.
- Provides access to all required or necessary product information in-depth such as technical specifications etc (this item was included under the Time Saving factor based on the logic that having all product information available in one place leads to saving in time)

8. Wide Spectrum Service

This factor consisted of the following items that loaded high on it (mostly 0.67 and above) and were logically related to the wideness of the service offered.

- Offers suitable payment options
- Am confident that all items ordered on this site will actually be delivered to my home
- If I face a difficulty, while placing an order or even before and after it, the customer care of this site is very helpful

9. Safe & Proper Delivery

This factor consisted of the following items that loaded high on it (0.50 and above) and were logically related to Safe & Proper Delivery

- Am confident that the ordered items will arrive safely
- Am sure that all items ordered will be in a proper working condition when received

Hence using Exploratory factor analysis, a set of 46 items was reduced to 36 items and a simple and interpretable dimensionality structure was identified. This helped in preparing a more concise and sharp instrument for further research.

IV. Conclusion

This paper provides practical insights as to how Exploratory factor analysis (EFA) can be used to reveal the underlying structure of a fairly big set of variables, in this case those related to antecedents of online shopping behavior. An exploratory study becomes more significant when the literature is found to be fairly heterogeneous. The study has practical implications for the e-tailers in terms of gaining a better understanding of the online shopper behaviour in the context of changing market dynamics. This study and the proposed conceptual model hope to enable e-tailers to adjust market communications and reposition themselves to retain the existing customers as well as attract potential ones. The findings may also help the etailers to segment and target the retail consumers and, as a consequence, to undertake more effective retail marketing strategies for competitive advantage.

The study, however, is subject to some limitations. Being an exploratory study, the research design is relatively simple. There is scope for the research design to be more refined in the future. The EFA has enabled us to identify a simple and interpretable dimensionality structure. However, as we know, the findings from an exploratory study are only intermediary and hence they lay the brass tacks for successive theory testing. There is considerable scope of research in this area.

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Figure 1: Proposed Conceptual Model (arrived at after extensive literature review & content analysis)

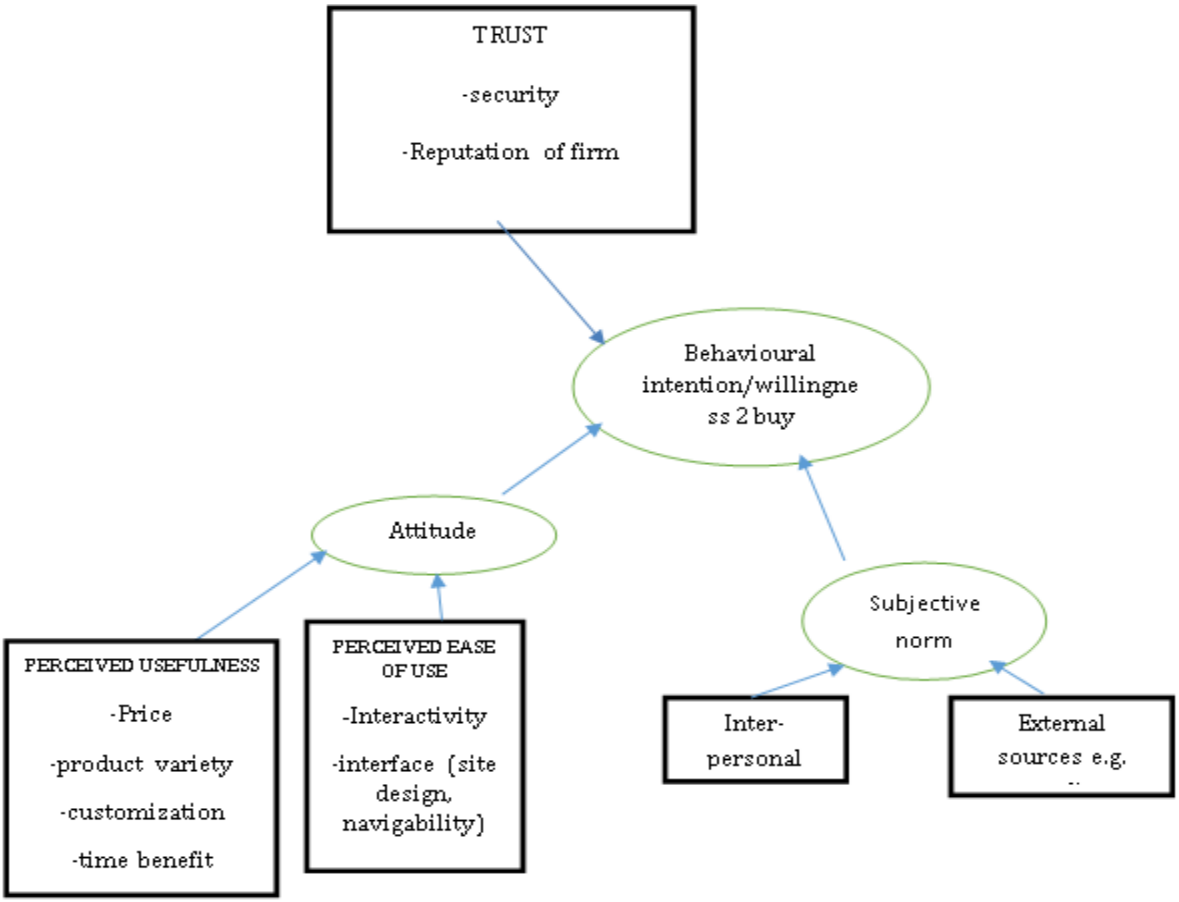

Table 1: Some data analysis results from 3rd EFA Run

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.625
Bartlett's Test of Sphericity	Approx. Chi-Square	1672.850
	df	741
	Sig.	.000

Source: SPSS Data analysis

Table 2: Some data analysis results from 3rd EFA Run - The total variance explained was 73.87%.

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.028	23.149	23.149	9.028	23.149	23.149	3.570	9.153	9.153
2	3.121	8.002	31.152	3.121	8.002	31.152	3.404	8.727	17.880
3	2.648	6.789	37.940	2.648	6.789	37.940	3.217	8.248	26.128
4	2.321	5.952	43.892	2.321	5.952	43.892	2.649	6.793	32.921
5	2.006	5.143	49.035	2.006	5.143	49.035	2.481	6.362	39.284
6	1.828	4.688	53.724	1.828	4.688	53.724	2.261	5.797	45.080
7	1.698	4.353	58.076	1.698	4.353	58.076	2.108	5.405	50.485
8	1.502	3.852	61.928	1.502	3.852	61.928	1.990	5.103	55.588
9	1.330	3.410	65.338	1.330	3.410	65.338	1.964	5.036	60.624
10	1.205	3.090	68.428	1.205	3.090	68.428	1.937	4.966	65.590
11	1.088	2.790	71.218	1.088	2.790	71.218	1.790	4.591	70.180
12	1.034	2.652	73.870	1.034	2.652	73.870	1.439	3.690	**73.870**
13	.937	2.402	76.272						
14	.907	2.325	78.597						
15	.819	2.101	80.698						
16	.702	1.800	82.498						
17	.683	1.752	84.249						
18	.662	1.697	85.946						
19	.589	1.512	87.458						
20	.510	1.308	88.766						
21	.488	1.250	90.016						
22	.442	1.134	91.150						
23	.421	1.080	92.231						
24	.384	.984	93.215						
25	.332	.850	94.065						
26	.303	.778	94.842						
27	.264	.677	95.519						
28	.253	.648	96.167						
29	.240	.614	96.782						
30	.228	.586	97.367						
31	.214	.550	97.917						
32	.157	.402	98.319						
33	.142	.365	98.685						
34	.131	.337	99.022						
35	.108	.278	99.300						
36	.092	.236	99.536						
37	.077	.198	99.734						
38	.061	.156	99.890						
39	.043	.110	100.000						

Source: SPSS Data analysis

Source: SPSS Data analysis

MATHEMATICAL MODELING FOR DEPRECIATING STOCK IN SINGLEWAREHOUSE SYSTEM WITH REFERENCE TO THE DEMAND DEPENDENT ON INVENTORY

Vivek Kumar Sharma* Shradha Goyal**

In traditional Economic Order Quantity modeling technique, as per the storage in a warehouse, the rate of demand is considered to be fixed, whereas in real world practice rate of demand may be dependent on time, price and stock. For example, in a multi warehouse system like a super departmental store, the rate of demand is mostly subjective on the basis of stock demand. In industry, the maintenance of large stock of goods in ware houses has a higher probability of consumers as compared to an industry with small quantity of stock. Such procedures implied in single warehouses systems may be logical for level of stock that is dependent on demand. Hence, a good and large stock level mostly results in a higher profits and larger sales.

Keywords: - Stock, EOQ model, Depreciation, Warehouse, Inventory.

My research work basically focuses on the control of order quantity and cycle time of depleting inventory and computing mathematical model for optimizing demand variations under various stochastic situations for depreciating inventory or perishable stock. Inventory means the stock kept of various goods or in terms of any kind of resources required for smooth and non-stop functioning of a production process. Inventory can be stored resources or the real time availability of stock for production. Operation research plays an important role in finding solutions to real world problems of inventory control. Operation research can give an answer to all the questions of the market in this regard. A wide range of products is made available to the consumer in the market, but availability of that product range to be in perfect coordination with the consumer demand, requires a perfect inventory control at the back end, otherwise with insufficient stock, the consumer either has to wait or change his mind.

Warehouse Inventory can also be defined in following ways: -

1) Goods and resources planned and stored and future use.
2) Any kind of big or small raw material or finished goods are included in inventories.
3) Proper inventory records include all details like names, quantity, sources, cost etc of the goods stored.
4) Inventory is also a list of those movable and non-movable materials required for the maintenance of various equipments and other components of the production and storage systems. This record is kept complete with exact nomenclature and quantity of the units.

Importance of keeping a check on holding inventory can be stated because of following: -

a) Uncertain access situation.
b) To react to unplanned lead times.
c) To meet sudden rise in demand.
d) Uncertain government policies at nation and international level.

The motive of using operations research in inventory control is to make a balance between maintaining and not maintaining the inventory i.e. shortage costs.

The inventory process is an answer to following questions.

a) Quantity required
b) When and what to be ordered or re – ordered.

Every inventory has various uses in different industries depending on situation and needs of the industry. The inventory may be useful in the following ways:

1) Managing the inventory levels by re considering the extreme points, ordering and re ordering, the amount of safety stock and the optimum quantity of each item.

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2) To plan and manage the purchases so as to get the maximum benefit of discounts and other cost reductions, if possible.
3) Maintaining a timed record of the processes, placing and receiving orders and other schedules.
4) Ensuring quality check on both raw material and finished products before stocking them in warehouses.
5) Maintaining record of all receipts and transactions and other documents required during the management of inventory.

1) Raw Material Inventories: For any type of production raw materials are kept in stock for the future processing. These materials are used for different industries. For example, cotton used in textile mills, sugarcane used for sugar mills etc.
2) In process Inventories – this includes the storage of partially completed goods in process of manufacturing.
3) Produced goods Inventory: - This is a category of fully furnished products which are ready to be shipped to the, market for sale. At this point the produced goods are stored together for final sample tests and inspection before dispatch to customer.
4) Spare Inventory: - This is storage of extra units left unused from the production process. These are stored for any emergency situations which require replacement of any parts.
5) Inventory of miscellaneous resources: - This is to maintain the other direct and indirect resources, apart from raw material, which play an important role in main production process, e.g. machine parts, lubricants, stationary etc.

Inventory of perishable product
Usually the models used for inventory management, assumes that the time period of stored material, to be used for future needs, as an indefinite period, without considering any type of deterioration and depreciation in its state. whereas, in reality there are some items with depreciate with time by either becoming outdated or deteriorating in its value and looks, therefore these are not a reliable inventory and may create an imbalance in the planned and actual situation. many perishable products like food items, milk and milk products, raw fruits and vegetables, meat, metals, gases and fuels etc cannot be considered for a long period storage and their storage should be planned according to their lifetime and in some cases storage should not be done if rate of depreciation is high or very high.
Basically, the items stocked in the inventory are categorized into three types:
1. Obsolete
2. Deteriorating
3. No change/effect

Obsolete
The products which lose their value in market with time, because of the new advancements and technologies being introduced in the market every day and hence, giving consumer a better option. Therefore, if kept in inventory for long it loses its demand and hence has to sell at a lower value in its outdated season, for stock clearance. Eg. Electronics, fashion clothes, accessories, spare parts etc.

Deteriorating
These are those products which naturally have a tendency to depreciate in its composition and look and hence be no longer of the same value as before as it will not be able to meet its purpose
E.g food stuffs, drugs, chemicals, blood.

No change
These are those products with indefinite shelf life and depreciation free. There storage can be planned and is reliable for any further calculation using models and formulas. This category product does not have any fixed or finite shelf life or existence duration

I. Review of Literature

Levin et al. (1972) experimented that "huge cluster of consumer supplies display at a shop will direct the consumer to buy extra". Baker and Urban (1988a) offered an economic order quantity (EOQ) model for a control form stock level reliant demand outline. Mandal and Phaujdar (1989b) recognized a theoretical Economic production quantity model for fading items with identical rate of production and stock-dependent stipulate. Silver and Peterson (1982) discussed that "a trade at the selling level is relative to the quantity of stock". Datta and Pal (1990b) worked on inventory based model for worsening of matter with the supposition that the rate of demand is a linearly varying with on-hand stock when shortages are allowed, which are totally backlogged for limited and unlimited horizons. Soni and Shah (2008) formulated most advantageous policies of ordering for vendor when demand is partly stable and partly reliant on the store, and the dealer offers progressive loan time to resolve the account. You and Hsieh (2007) presented "a constant inventory model for making decisions and the strategy for a company that sell a cyclic product over finite preparation duration". Tripathi et al. (2014b) worked on "economic order quantity having linearly related time dependent rate of demand and rate of shortage". There is variety of models with stock-dependent demand taken into study, broadly. Majorly, stock-dependent demand is

usually studied in two types of functions (i) the linear form of $\alpha + \beta I(t)$ and (ii) the power form of $\{I(t)\} \beta \alpha$, where α and β are constants and I(t) is the inventory level at time 't'. In addition to this study Zhou and Yang (2005) gave models based on multi - warehouse systems for stock dependent rate of demand. Mandal and Maiti (1999) suggested an inventory model of depletion prone stock matter with changing rate of replenishment, rate of demand dependent on stock and few in hand units. Giri and Chaudhuri (1998) presented "an inventory model with relationship between hyperbolic holding cost and power form stock-dependent demand". Chung (2003) talked about "an algorithm for an inventory scheme with a power form stock-dependent demand". Balkhi and Benkherouf (2004) offered "an inventory form for weakening substances with a power form stock and time-dependent rate of demand for a set time planning prospect". Urban (2005) gave "an outline on stock models and level of inventory is dependent on demand and differentiated among the early inventory dependent model and instant inventory dependent models". Gupta and Vrat (1986) developed "an inventory model in which rate of demand is varying in function of first level of stock. For recurring goods, the stock problem with value and stock-dependent demand cannot be unnoticed". Urban and Baker (1997) recognized "a deterministic inventory model for order using multivariate meaning of cost, time value and level of inventory". More of such related works in the same concern have been studied by Wee (1995b), Goh (1994), Dye (2002), Chung and Tsai (2001), Sarker et al. (1997), Chung (1989), Goyal and Chang (2009), Yang et al. (2010), Teng et al. (2011) etc. Tripathi et al. (2016d) recognized "inventory model for depreciating goods with quadratic demand dependent on time under trade on credits systems".

Various goods such as blood bank, food, medicine, volatile liquids, green vegetable and many others, deteriorate during their normal storage time. Thus while determining the economic order quantity (EOQ) policy; the loss due to depreciation should be considered. Ghare and Schrader (1963) who suggested "the traditional, zero shortages in inventory model with fixed rate of depreciation". Covert and Philip (1973) elaborated model of Levin (1972) and offered an EOQ model for an uneven rate of depreciation considering a bi - parameter weibull distribution. Chang et al. (2003) published an EOQ model for depreciating goods in which the dealer gives an acceptable delay to a buyer if the quantity ordered is more or equal to a preset capacity. Tripathi and Pandey (2013) offered "an inventory model for depreciating stock with Weibull distribution and rate of demand dependent on time under trade credits". Many times customers are used to a delay in delivery and might be ready to a small time to collect their initial choice. For well-liked matter, the span of the waiting time for the subsequent cycle time determines whether a backlog is acknowledged or discarded. Therefore, the rate of backlog must be changeable and dependent on time. When shortfalls happen, it is understood that either there is a backlog or loss of goods. Tripathi (2012) gave "an inventory model for things with an exponential rate of demand rate and considering shortfalls". Eduardo and Barron (2009) studied an EPQ model for goods contrived in the atmosphere of a deficient manufacturing system that produce flawed Inferiority goods. Dye et al. (2007) developed a model for failing matter with cost reliant requirement under shortage. Pentico et al. (2009) developed "the deterministic inventory model with fractional backordering". Chiu (2008) presented a simple algorithm to restore the use of calculus for formative modeling of the optimal lot size. Other work on manufacturing based inventory model with shortfalls and partial backlogs is done by Wee (1995a), Hollter and Mak (1983) Goyal and Giri (2003), Park (1982), Tripathi et al. (2016e) and more.

The remaining of the Paper is framed as follows. Looking at the research Gap, next discussed are the assumptions followed by Algorithms and derivations for which model for optimal solutions is derived and is justified by numerical hypothetical problem. Further proving the analysis and conclusion using the sensitivity analysis.

II. Research Design & Methods

Research Gap

The various Models and already done research work considered under this study assumed an indefinite time period for the consumption of the perishable inventory as well as the rate of depreciation is also taken as constant, whereas this paper focuses on assuming variation in cycle time for replenishment of Perishable stock (table1) and also assuming the rate of depreciation to be changing with storage time (table 2) in warehouse. As industry nowadays is very fickle and because of high competition situation in the market, demand for a product cannot be assumed and hence inventory is lastly taken as a base for satisfying demand. That is to stay in line, a company nowadays has to maintain exactly required inventory, which neither results in wastage nor shortfalls. Such an inventory is called demand dependent inventory.

Assumptions

The work done is based on the following assumptions: -

1. D is Rate of demand which is assumed to be known and is dependent on stock level

   i.e. $D \equiv D(t)=\alpha + \beta I(t)$, $\alpha > 0$, $0 < \beta < 1$.

2. Allowed and backlogged Shortages.
3. Rate of depreciation (θ) is variation and rate of failure is dependent on age of stock.
4. The time and order scheduling is fixed.
5. No lead time allowed.
6. Initial level of stock is made equal to order level before starting a new period.
7. Stock depreciation is assumed to be considered only after it is received as an inventory.

III. Results & Analysis

Mathematical Formulation

The inventory level I(t) at any time 't' decreases to meet demand and partially due to deterioration. By this process the stock reaches zero level at t = T_1.

Again shortages occur and accumulate to the level q_2 at t =T. The differential equations in time period [0, T] are given by

$$\frac{dI(t)}{dt} + \theta I(t) = -\{\alpha + \beta I(t)\}, 0 \le t \le T_1 \quad (1)$$

$$\frac{dI(t)}{dt} = -\alpha, T_1 \le t \le T \quad (2)$$

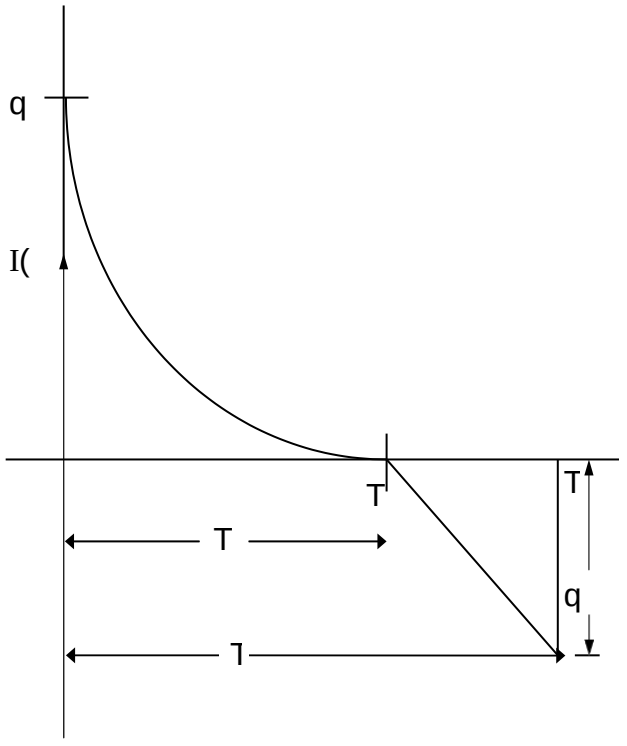

Fig. 8.1 Inventory Level Vs. Time

Solution of (1) with boundary conditions I (0) = $-q_1$ and I(T1) = 0 yield

$$I(0) = q_1 = \frac{\alpha}{\theta+\beta}\left\{e^{(\theta+\beta)(T_1-t)} - 1\right\}, \ 0 \le t \le T_1$$

$$I(0) = q_1 = \frac{\alpha}{\theta+\beta}\left\{e^{(\theta+\beta)(T_1-t)} - 1\right\}$$

From (4), we get $T_1 = \frac{1}{\theta+\beta}\log\left\{1+\frac{(\theta+\beta)q_1}{\alpha}\right\}$

The solution of (2) with the conditions I(T1) = 0 and I(T) = $-q_2$, is given by

$$0(t) = \alpha(T_1 - t), \ T_1 \le t \le T$$

Using the condition $I(T) = -q_2$ in (6), we obtain

$$q_2 = \alpha\left[T - \frac{1}{\theta+\beta}\log\left\{1+\frac{(\theta+\beta)q_1}{\alpha}\right\}\right]$$

Total deteriorating units during the time $[0, T_1]$ is given by

$$D_T = \int_0^{T_1} \theta I(t)dt = \frac{\alpha\theta}{\theta+\beta}\left\{\frac{e^{(\theta+\beta)T_1} - 1}{\theta+\beta}\right\}, \ 0 \le t \le T_1$$

Where T_1 is defined in (5). The deteriorating cost is given by

$$DC = c^* D_T = \frac{c^*\alpha\theta}{\theta+\beta}\left\{\frac{e^{(\theta+\beta)T_1} - 1}{\theta+\beta} - T_1\right\}, \ 0 \le t \le T_1$$

Holding cost over the period $[0, T_1]$ is given by

$$HC = h\int_0^{T_1} I(t)dt = \frac{h\alpha}{\theta+\beta}\left\{\frac{e^{(\theta+\beta)T_1} - 1}{\theta+\beta}\right\}, \ 0 \le t \le T_1$$

Shortage cost is given by

$$SC = s\int_0^{T_1} -I(t)dt = \frac{s\alpha}{2}(T - T_1)^2$$

Hence total inventory cost per cycle is given by

$$TIC = \frac{1}{T}[OC + SC + HC + CD]$$

$$TIC = \frac{1}{T}\left[k + \frac{s\alpha}{2}(T - T_1)^2 + \frac{\alpha(h + c^*\theta)}{\theta+\beta}\left\{\frac{e^{(\theta+\beta)T_1} - 1}{\theta+\beta} - T_1\right\}\right]$$

Determination of Optimal Solution

For finding optimal solution differentiating (12) partially with respect to T and T_1 two times we get

$$\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}}=-\frac{1}{\mathrm{T}^2}\left[\mathrm{k}+\frac{\mathrm{s}\alpha(\mathrm{T}-\mathrm{T}_1)^2}{2}+\frac{\alpha(\mathrm{h}+\mathrm{c}^*\theta)}{\theta+\beta}\left\{\frac{\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}-1}{\theta+\beta}-\mathrm{T}_1\right\}\right]+\frac{\mathrm{s}\alpha(\mathrm{T}-\mathrm{T}_1)}{\mathrm{T}}$$

$$\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}^2}=-\frac{2}{\mathrm{T}^3}\left[\mathrm{k}+\frac{\mathrm{s}\alpha(\mathrm{T}-\mathrm{T}_1)^2}{2}+\frac{\alpha(\mathrm{h}+\mathrm{c}^*\theta)}{\theta+\beta}\left\{\frac{\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}-1}{\theta+\beta}-\mathrm{T}_1\right\}\right]+\frac{\mathrm{s}\alpha}{\mathrm{T}^2}(2\mathrm{T}_1-\mathrm{T})>0$$

$$\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}_1}=\frac{\alpha}{\mathrm{T}}\left\{-\mathrm{s}(\mathrm{T}-\mathrm{T}_1)+\frac{(\mathrm{h}+\mathrm{c}^*\theta)}{\theta+\beta}\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}-1\right\}$$

$$\frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}_1^2}=\frac{\alpha}{\mathrm{T}}\left[\mathrm{s}+(\mathrm{h}+\mathrm{c}^*\theta)\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}\right]>0$$

$$\frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}\partial \mathrm{T}_1}=\frac{\alpha}{\mathrm{T}^2}\left\{\mathrm{sT}_1+\frac{(\mathrm{h}+\mathrm{c}^*\theta)}{\theta+\beta}\left(\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}-1\right)\right\}<0$$

Since $\left(\frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}^2}\right)\left(\frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}_1^2}\right)-\left(\frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}\partial \mathrm{T}_1}\right)>0$ and $\frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}^2}>0,\ \frac{\partial^2(\mathrm{TIC})}{\partial \mathrm{T}_1^2}>0,$

the optional values TIC = TIC* is minimum, Optimal (minimum) values of T = T* and T = T_1* is obtained by solving $\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}}=0,$ and $\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}_1}=0$ simultaneously is minimum, Putting $\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}}=0$ and $\frac{\partial(\mathrm{TIC})}{\partial \mathrm{T}_1}=0.$

We obtain

$$2\mathrm{k}-\mathrm{s}\alpha\left(\mathrm{T}^2-\mathrm{T}_1^2\right)+\frac{2\alpha(\mathrm{h}+\mathrm{c}^*\theta)}{\theta+\beta}\left(\frac{\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}-1}{\theta+\beta}-\mathrm{T}_1\right)=0$$

$$\mathrm{s}(\mathrm{T}-\mathrm{T}_1)-\frac{(\mathrm{h}+\mathrm{c}^*\theta)}{\theta+\beta}\left(\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}-1\right)=0$$

Truncated Taylor's series is used in exponential terms for finding closed form solution i.e.

$$\mathrm{e}^{(\theta+\beta)\mathrm{T}_1}\approx 1+(\theta+\beta)\mathrm{T}_1+\frac{(\theta+\beta)^2\mathrm{T}_1^2}{2},$$ (18) and (19) become

$$\alpha(\mathrm{h}+\mathrm{s}+\mathrm{c}^*\theta)\mathrm{T}_1^2-\mathrm{s}\alpha\mathrm{T}^2+2\mathrm{k}=0$$

$$(\mathrm{h}+\mathrm{c}^*\theta)(\theta+\beta)\mathrm{T}_1^2+2(\mathrm{h}+\mathrm{s}+\mathrm{c}^*\theta)\mathrm{T}_1-2\mathrm{sT}=0$$

Solving (20) and (21) simultaneously, we obtain optimal $\mathrm{T}=\mathrm{T}^*$ and $\mathrm{T}_1=\mathrm{T}_1^*$

A hypothetical problem is considered for the above found result for Cycle time and optimal time for positive stock. i.e. maximum time till which stock can be kept depletion free. It is tested using mathematical software of MATLAB and sensitivity analysis.

Hypothetical Problem

Given the following parameters in appropriate units.

$\theta=0.2, \alpha=500, \mathrm{h}=10, \mathrm{s}=1000, \mathrm{k}=20, \mathrm{c}^*=4.$

Substituting these values in (20) and (21), we get $\mathrm{T}=\mathrm{T}^*=0.084247439$ year $\mathrm{T}_1=\mathrm{T}_1^*=0.08331021$ year,

Sensitivity Analysis

By using the same data as in above hypothetical example. We study the effect of the changes in a single parameter on the optimal solutions of cycle time $\mathrm{T}_1=\mathrm{T}_1^*, \mathrm{T}=\mathrm{T}^*$ and optimal order quantity $\mathrm{Z}(\mathrm{T}_1, \mathrm{T})=\mathrm{Z}^*(\mathrm{T}_1, \mathrm{T})$. We obtain the following results.

Result: - From Table (1), we observe that increase of consumption rate 'α' results decrease in optimal cycle time T = T*, optimal time to finish positive inventory T1 = T1*.

Result: -From Table (2), it can easily see that increase of deterioration rate 'θ' results decrease in T = T*, optimal time to finish positive inventory T1 = T1*.

Findings

a. In-concern, with the demand and consumption situation in the present real world industry, the decision related to inventory are very stochastic in nature. Results of table 1 give a better and clearer picture as compared to general and traditional theory studied in recent times which assumes constant rate of consumption of both the perishable and non-perishable goods, which might be true for industry in past one decade but not for the current manufacturing units.
b. Results of table 2 are also beneficial as they give convenience of broader range for decision making in case of variational rate of depreciation which is applicable also in case of constant rate of depreciation, which nowadays is very rarely considered.

IV. Conclusion

Future Scope of Study

Above conclusions are based on the result achieved by sensitivity analysis done using Matlab software. This result can be further tested in future in real world SME scale industry related to medicine, raw and processed food and chemicals, with more of real time assumptions implied and further developing the given results.

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Table 1: Variation of consumption rate 'α'.

α	T=T*	T1=T1* T1=T1
500	0.084247439	0.08331021
550	0.080421804	0.07952874
600	0.077077804	0.07622322
650	0.074121928	0.07330126
700	0.071484280	0.07069380
750	0.069111434	0.06834805
800	0.066961739	0.06622285
850	0.065002190	0.06428559
900	0.063206259	0.06251005

Table 2: Variation of deterioration rate 'θ'.

θ	T = T*	T1 = T1*
0.25	0.08327689	0.08235088
0.30	0.082336034	0.08142089
0.35	0.081423382	0.08051877
0.40	0.080537588	0.79643194
0.45	0.079677357	0.78792877
0.50	0.078841505	0.07796664
0.55	0.078028907	0.077163395
0.60	0.077238521	0.076382091
0.65	0.076469355	0.07562176

ANTECEDENTS OF ICT UTILIZATION: A CASE OF SELECT UNIVERSITIES

Minakshi Kapoor* Versha Mehta**

The rise of new technologies has become one of the basic building blocks of modern society as it provides higher interactive potential for users to develop their individual, intellectual and creative ability. Now a day, many countries are understanding and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. Despite its huge material resources and population endowment, India cannot be counted among progressive nations using ICT in educational management, as technology has become a critical tool for achieving success in education. Hence, there is need for the country to strategize and expand its vision so as to cope with the challenges of a technological society. In this context and background, the present study has established relationships between variables viz. attitude, belief, self-efficacy, accessibility, ease of use and so on for the utilization of information technologies on the basis of conceptual framework used for the study. The findings of the study revealed that all variables except management support and facilitating conditions had a significant impact on intention to use ICT. Behavioral intention had a significant causal influence on ICT utilization.

Keywords: ICT Utilization, Task-Technology Fit, Individual Context, Organizational Context, Behavioral Intention.

Information and Communication Technologies have become an important parameter of performance in the organizations and businesses in order for them to maintain a competitive advantage. The World Wide Web and the Internet connects people and organizations through a global network and number of people having internet connectivity varies amongst countries. In fact, ICT has become the most preferred choice of all countries to upgrade their economies and become competitive in the global market place. Many researchers have referred to "ICT as a term that contain basically software, hardware, networks and people" (Jennex & Amorose, 2002; Li-Hua & Khalil, 2006; Li-Hua, 2004). Other researchers have identified "ICT as a process which includes sequences of phases to treatment and transform the data into information, which is useful for decision makers" (Haag et al., 2000). As new technologies have become a necessity for every organization within a short span of time, Organizations tend to invest significantly in the complex and contemporary information systems (Gable, Sedera &Chan, 2008). In recent decades, the total investment in the field of information systems has exceeded thousands of billions of dollars annually (Seddon, 1997). It has been estimated that total worldwide expenditure on IT exceeds 1.5 trillion US dollars annually in approximate terms and is further growing at about ten percent compounded annually (Anandarjan & Anakwe, 2002). Also, it has been seen that the lending for new technologies, by the World Bank, has been quite pervasive and growing at about six times growth rate of the bank's total lending (Shaukat et al., 2009). This increased investment in IT would naturally lead to increase performance of organizations and therefore, the organizations are likely to continue doing so in near future (Odedra & Kluizer, 1998).

As investments in new technologies by organizations all over the world continue to grow at a rapid pace, its effective utilization has not been so valuable. However, regardless of potential technical superiority and promised merits, an unused or underutilized technology cannot be effective (Mathieson, 1991). In context to Higher Education, new technologies constitute a major part of educational programs (Thomas & Stratton, 2006), still, there are numerous barriers that restrict the effective utilization of technology, such as technology infrastructure, faculty effort, technology satisfaction, and graduate's competency (Surry, Ensminger, & Haab, 2005). Even many higher online educational institutions have failed due to high cost of technology, poor decisions, competition, and absence of business strategy (Elloumi, 2004). Many universities that provide new technologies face enormous difficulties in achieving successful strategies, including the delivery, effectiveness, and acceptance of technology (Saade, 2003). Thus, with the growing reliance on information systems and increasing rapidity of the introduction of new technologies into learning environment, identifying the

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critical factors related to users' acceptance of technology continues to be an important issue (Yi &Hwang, 2003). Since the present study is an extension of a study by (Kapoor & Mehta, 2016) which was conducted to identify factors for ICT utilization among the respondents in select universities of higher education. In this context, the study has been extended to identify the impact of factors investigated under individual, task-technology and organizational contexts on effective utilization of new technologies in select organizations in the higher education sector.

I. Review of Literature

In the Information System (IS) field, there are a number of theoretical models for explaining the processes through which individuals as well as organizations make ICT acceptance and use decisions (Sun & Zhang, 2006; Venkatesh, Morris & Davis, 2003). These models are expected to have power in explaining and predicting usage of the technology and to provide a useful tool for top management of the Universities to understand the determinants of usage behaviors in order to proactively design strategies to target user populations that may be less inclined to use the new technologies in their work. In this context, large number of studies (Swanson, 1998; DeLone & McLean, 1992; Lucas, Schultz & Ginzberg, 1990) and models (Schewe, 1976; Robey, 1979; Lucas, 1975a) have been proposed for the implementation and use of new technologies.

Most of the Utilization research is based on theories of attitudes and behavior (Goodhue & Thompson, 1995) such as the theory of reasoned actions (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), the theory of planned behaviour (Ajzen, 1991), the technology acceptance model (Davis, 1989; Davis, Bagozzi & Warshaw, 1989), technology acceptance model 2 (Venkatesh & Davis, 2000), Unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003). The theory of reasoned action proposed by Fishbein and Ajzen (1975), is a well-known model in the social psychology domain, which explain and predict the people's behaviour in a specific situation. According to this theory, a person's actual behaviour is driven by the intension to perform the behaviour, and the intention is a function of the person's attitudes toward the behaviour and subjective norms.

The Ajzen's Theory of planned behavior (TPB) is another well-known model that has been used to explain social behavior and information technology use (Ajzen, 1985, 1991; Conner & Armitage, 1998; Sutton, 1998). According to the author, intention is an immediate predictor of behaviour and is loaded by subjective norm (i.e. perceived social pressure), perceived behavioral control (i.e. the beliefs about the ability to control the behavior) and one's attitude towards a behavior. Also, the author has observed that TPB views the control that people have over their behavior as lying on a continuum from behaviors that are easily performed to those requiring considerable effort, resources, etc.

New research models based on TPB, TAM and UTAUT together with new determinants specific for ICT usage have been proposed. Hu et al., introduce eda model where the factors indicating the influence of efficiency gain, facilitating conditions and social influence are integrated into the TAM-based model. This takes into account the anticipated needs of the target users (Hu et al., 2011). In like manner, Bouwman and van de Lidwien underline the context related 25 factors. The context where the communication happens is dominant. They observed that the TAM based factors in the research of the use of mobile technology are not sufficient (Bouwman & Wijngaert, 2009). In their research the theories of media choice and task-technology fit are integrated into one model. They have suggested that TAM based models are too generic to explain fully the factors of the users' intentions in the use of technology. They have proposed that new research is needed for contextual and task related factors in this area. In response to this, a new model known as task-technology fit model (TTF) has been suggested for technology utilization which is governed by the match between technology features and the requirements of the task (Goodhue & Thompson, 1995). There are number of studies which revealed that technology will be used only if the functions available to use through the technology support or fit the user activities (Benbasat et al., 1986; Dickson et al., 1986; Zigurs & Buckland, 1998). According to Goodhue and Thompson (1995), TTF theories are contingency theories that argue that use of a technology may result in different outcomes depending upon its configuration and the task for which it is used. Actually, TTF match the demands of a task and the capabilities of the chosen technology and have four key constructs, task characteristics, technology characteristics, which together affect the third construct task-technology fit, which in turn affects the outcome variable, either performance or utilization. After a technology, which provides appropriate support for the user tasks (i.e. has significant task-technology-fit), has been accepted by an individual only if it helps in enhancing the user's performance. However, some individuals may underutilize a technology by restricting their use of the system functionalities to a handful of

features while others may fully leverage it by exploiting the technology functionalities. Such differences in the usage of ICTs across individuals arise from many factors such as personality, experience, perceptions, self-efficacy, and user competence (Agarwal, 2000; Marcolin et al., 2000; Boudreau & Seligman, 2003) and manifest themselves in actual use behaviour. From this viewpoint, task-technology-fit is an antecedent to utilization of new technologies in addition to the other behavioural antecedents identified elsewhere (Taylor & Todd, 1995; Venkatesh et al., 2003). Though TRA, TPB, TAM, TAM2, UTAUT, TTF and many more technology acceptance models have been referred in various studies as some of the most influential models used to investigate the intention to use technology but still its application in education, particularly in higher education field is yet to be made (Schaik, 2009; Moran et al., 2010).

Conceptual Framework

On the basis of above literature, the present study is related to ICT utilization and adoption in specific contexts and the conceptual framework of this study has been developed with this in mind. The framework as shown in (Figure 1), adapted from Chau & Hu's (2002)'three-dimensional framework' due to its provision of contexts that helps in systematic examination of technology usage, is based on three different contexts and these are; the individual context, the task-technology context and the organizational context. The Individual Context encompasses individual characteristics that rely on measures of utilization behaviour. The Task-Technology Context refers to the characteristics of the task and technology itself in which decision to use ICT is based on an individual expectation that the technology may have some impact on the task, or there must be some degree of fit between the task and the technology (task-technology-fit) that has been chosen to accomplish it (Goodhue & Thompson, 1995). The Organizational Context refers to the specific environment where the individual works and the investigated technology acceptance takes place (Han, 2003). The interpretation of user behaviour within this organizational context will also help to make clear how important a role the organization plays in determining the user's intention towards the technology usage. See figure 1

The following hypotheses have been developed for the study from conceptual framework based on extensive literature:

H_1: Individual characteristics have a positive impact on behavioural intention.

H_2: Task and technology characteristics positively affect the intention to use ICT.

H_3: Organizational context is significantly related to intention.

H_4: Behavioural intention has a significant influence on ICT utilization.

II. Research Design & Methods

Sample and Data

Both primary and secondary data have been used in conducting the present research. Primary data has been collected via using questionnaire. Secondary data has been collected from various books, journals, published papers, newspapers, websites etc. Since the scope of the study extends to the Higher Education Sector, it has been conducted at the University of Jammu in Jammu and Kashmir and also at the Panjab University in Chandigarh. The participants are the students, pursuing graduate or post graduate or doctoral courses from these universities. Approximately 250 questionnaires has been distributed among respondents, out of which only 200 filled questionnaires has been collected. The sample was randomly selected.

Instrumentation

The instrument has been developed from previous literature review with modifications to fit the specific context on ICT utilization in higher education. The particular items for Individual context construct were mainly adapted from the studies conducted by: Taylor & Todd (1995); Venkatesh et.al (2003); Chang (2004); Pierce & Ball (2009); Siragusa & Dixon (2008); Park (2009). Items used for the task-technology fit construct were adapted from the study conducted by Goodhue (1998). Also for the organizational context, items were adapted from various sources as: Thompson et.al (1991); Chang & Cheung (2001); Abdulwahab & Dahalin (2010); Hsiu-Fen Lin (2007); Taylor & Todd (1995); Moore & Benbasat (1991). The items for behavioural intention and utilization adapted from sources: Dishaw & Strong (1999); Kuo & Lee (2011). All items were randomly arranged and were measured on five-point Likert scale, from 1= strongly disagree and 5= strongly agree.

Reliability and Validity

Both reliability and validity tests were carried out to secure accuracy and consistency of the scale. Composite reliability (α) was obtained for each factor. In general, a commonly used threshold value for acceptable composite reliability is .70. Thus, all measures fulfill the suggested levels with composite reliability ranges from .70 to .95 (Tavakol & Dennick, 2011).Convergent and discriminant validity was also evaluated by using principal component method of factor analysis with varimax rotation. By and

large, an instrument is considered to exhibit satisfactory convergent and discriminant validity when measurement items loaded highly on the respective constructs than on others. Since, all the items' loadings has been significantly higher on the respective construct (e.g. loadings of 0.5 or above) than on others, thus suggesting our instrument exhibited satisfactory convergent and discriminant validity. Table 1 shows the result of factor analysis and reliability test with some descriptive statistics, mean, and standard deviation. See Table 1

III. Analysis, Discussion & Findings

Hypotheses Testing: Correlations and multiple regression analysis were performed to test the hypotheses.

H_1: Individual characteristics have a positive impact on behavioural intention.

To make an impact assessment of the identified factors of Individual context on behavioural intention, the stepwise regression analysis has been applied between the explored factors and the overall intention as shown in Table 2. Individual context scale was comprised of three factors viz: Attitude, Belief and Self-efficacy having 11 variables. All items were randomly arranged and were measured on five-point Likert scale, from 1= strongly disagree and 5= strongly agree.

The regression model equation is given as:

$BI = \alpha + \beta 1F1 + \beta 2F2 + \beta 3F3$
$BI = .958 + .531\ AT + .155\ B + .060\ SE$

Where α = constant, $\beta 1$, $\beta 2$, $\beta 3$ represents coefficient of regression for the different independent factors. Table 2 reveals that when AT is increased by one unit, BI increases by .531. Similarly, when B and SE increases by one unit, BI increases by .155 and .060 respectively. The correlation between predictor and outcome is positive with values of R as .605, .627 and .629which signifies high correlation between predictor and the outcome. In model 1, R is .605 which indicates 60% association between dependent and independent variable. R-Square for this model is .369 which means that 36.9% of variation in intention to use can be explained from the independent variable. Adjusted R square .366 indicates that if anytime another independent variable is added to model, R-square will increase. Further beta values reveal the contribution of each independent variable with dependent variable. In this case the largest beta coefficient is .531, which is for Attitude. This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. The beta value for Self efficacy is found to be the weakest (.060), indicating that it has made less contribution. Also it has been found from the table that all the three independent variables are making significant contribution to the prediction of the dependent variable. Change in R square is also found to be significant with F-values significant at 5% confidence level. Since the results of regression analysis depicts positive and significant impact of individual characteristics on intention. Therefore, the hypothesis (H_1) stands accepted.

H_2: Task and technology characteristics positively affect the intention to use ICT.

To evaluate the effect of the characteristics of task-technology context on behavioural intention, regression analysis has been carried out on the data obtained from the select organizations under study. The basic formulation of the regression equation is: $Y=\alpha+\beta X$; Where, Y= Dependent variable, which is intention and X= Independent variable. In this study, the independent variable task- technology context was comprised of two factors viz: Accessibility and Ease of use. The impact analysis in respect of the above hypothesis is shown in Table 3.

The regression model equation is given as:

$BI = \alpha + \beta 1F1 + \beta 2F2$
$BI = 2.125 + .140\ ACC + .388\ EOU$

Where α = constant, $\beta 1$, $\beta 2$, $\beta 3$ represents coefficient of regression for the different independent factors. The above table reveals that when ACC is increased by one unit, BI increases by .140. Similarly, when EOU increases by one unit, BI increases by .388. Also, the correlation between predictor and outcome is positive but not as high with values of R as .355 and .480. In model 1, R is .355 which indicates 35.5% association between dependent and independent variable. R-Square for this model is .126 which means that 12.6% of variation in intention to use can be explained from the independent variable. Adjusted R square .122 indicates that if anytime another independent variable is added to model, R-square will increase. Further beta values for ACC and EOU are .140 & .388. Since EOU has the largest beta coefficient as compared to ACC. Therefore, the independent variable EOU makes the strongest contribution to explaining the dependent variable. Also, it has been found from the table that both independent variables are making significant contribution to the prediction of the dependent variable. Change in R square is also found to be significant with F-values significant at 5% confidence level. Since the

results of regression analysis depicts positive and significant impact of task-technology characteristics on intention. Therefore, the hypothesis (H_2) stands accepted.

H_3: Organizational context is significantly related to intention.

The independent variable organizational context is subdivided into four factors namely, management support, image, social influence and facilitating conditions and the correlation between independent and dependent variables is shown in Table 4.

The results from (Table 4) reveal that all independent variables i.e. Facilitating Conditions, Image, Social Influence and Management Support have statistically significant correlations with Behavioural Intention within the acceptable limit of 0.01 at 99% level of significance. The correlation between social influence (SI) and behavioural intention (BI) is maximum (0.560) and correlation between facilitating conditions (FC) and (BI) is minimum (0.211). Therefore, the third hypothesis (H_3) stands accepted.

As for as the purpose of the study is to analyze the impact of factors on intention to use information and communication technologies. For this, multiple regression analysis technique has been applied between the explored factors under organizational context and the overall intention as shown in Table 5.

Table 5 reveals that the correlation between predictor and outcome is positive with values of R as .304, .353, .582 and.587.In model 1, R is .304 which indicates 30.4% association between dependent and independent variable. R-Square for this model is .092 which means that 9.2% of variation in intention to use can be explained from the independent variable. Adjusted R square .088 indicates that if anytime another independent variable is added to model, R-square will increase. Further beta values reveal the contribution of each independent variable with dependent variable. In this case, social influence has the largest beta coefficient (.565). This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. The beta value for management support is found to be the weakest (.021), indicating that it has made least contribution. Also it has been found from the table that two independent variables i.e. image and social influence are making significant contribution to the prediction of the dependent variable whereas management support and facilitating conditions are not making significant contribution within the acceptable limits of 0.05 and 0.01 at 95% and 99% level of significance. Hence these variables are not found to be the significant predictors of behavioural intention.

H_4: Behavioural intention has a significant influence on ICT utilization.

To test the hypothesis, multiple regression analysis technique has been applied between intention and utilization. The analysis yielded a regression function with ($R = 0.524$; $R^2 = 0.274$; $F = 74.774$; $\beta = 0.524$, $P < 0.01$) as shown in Table 6.

It has been found from the table that behavioural intention explained 27.4% of variance and have significant impact on ICT utilization. Therefore, the hypothesis (H_4) stands accepted.

IV. Conclusion

The results of the study demonstrated that some constructs had significant or insignificant effect on the students' behavioral intention to use ICT. For that reason, there is potential for practical application in the development and management of information technologies in select universities. Since this study found that attitude, beliefs and self-efficacy as an individual attributes play an important role in affecting the intention to use ICT. Attitude made the strongest contribution while self-efficacy has made less contribution in explaining the students' behavioural intention to use ICT in their respective courses. Therefore, the study suggested that educators and managers should make an effort in boosting university students' self-efficacy by providing on- and off-line support. In context to task-technology construct, both accessibility and ease of use had a positive and significant impact on intention. Therefore, it is necessary for the universities to put more emphasis on the effective use of ICT by offering a greater variety of courses and advertising the benefits of ICTs to attract students. In organisational context, management support and facilitating conditions had not significant impact on behavioural intention. Therefore, it is essential that top management of the universities must provide adequate facilities and necessary resources like proper guidance, training, etc., to the students to use new technologies.

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Figure 1: Conceptual Framework of the Research

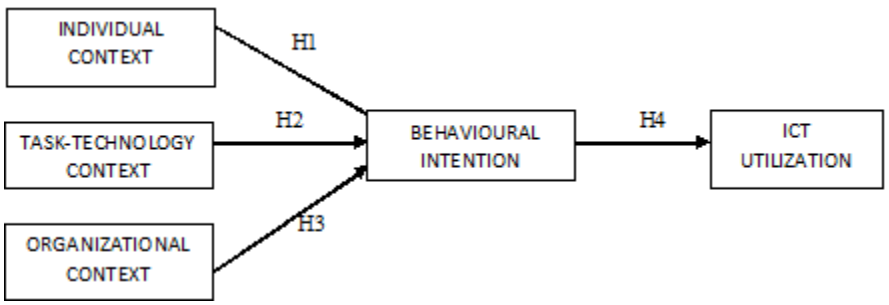

Table 1: Summary of Means, Standard Deviations, Construct Loadings and Reliabilities

Factors	Variables	Mean (STD)	Factor Loadings	Cronbach's Alpha
F1 Attitude (AT)	AT1- Use of ICT is a wise idea.	4.41 (.775)	.810	.757
	AT6- I think positively about using ICT.	3.94 (.699)	.708	
	AT9- I like to use ICT in my job.	4.19 (.736)	.707	
	AT4- I believe it is good to use ICT for my work.	4.20 (.767)	.565	
	AT2- ICT help to gain a deeper understanding of my work/job.	4.15 (.675)	.560	
F2 Belief (B)	B8- Using ICT is entirely with in my control.	3.24 (1.006)	.818	.702
	B7- ICT makes me feel a sense of achievement.	3.70 (.870)	.695	
	B9- ICT makes me feel as though I can work more effectively.	3.87 (.855)	.637	
	B4- Engaging with ICT makes me feel intelligent.	3.76 (.948)	.610	
F3 Self-Efficacy (SE)	SE1- I feel confident in using ICT.	3.62 (.930)	.832	.780
	SE2- I have necessary skills and knowledge for using ICT.	3.43 (1.016)	.826	
F4 Accessibility (ACC)	ACC9- I can get information quickly and easily when I need it.	3.95 (.889)	.819	.772
	ACC8- The information is up- to- date enough for my purposes.	3.83 (.878)	.726	
	ACC11- The organisation/ department maintains the information at an appropriate level of detail for my purposes.	3.57 (1.009)	.726	
	ACC10- It is easy to access information that I need.	4.05 (.750)	.714	
F5 Ease of Use (EOU)	EOU2- The information that I need is displayed in a readable and understandable form.	3.79 (.901)	.874	.796
	EOU7- The information is presented in useful format.	3.90 (.856)	.787	
	EOU5- It is easy to learn how to use ICT that give me access to information.	3.85 (.792)	.752	
	EOU6- The ICT that give me access to information are convenient and easy to use.	4.02 (.751)	.564	
F6 Management Support (MS)	MS1- Management always support to impart knowledge about the use of ICTs.	3.57 (1.016)	.772	.804
	MS2- Management provides most of the necessary help and resources such as sufficient work space, sufficient number of computers etc., for the use of ICTs.	3.57 (1.129)	.758	
	MS3- A central support is provided by the top management to handle with technical problems.	3.52 (1.025)	.660	
	MS4- The resources are available to me to use ICT effectively.	3.70 (.843)	.657	
	MS5- Sufficient electricity and internet services are provided by my organisation to use ICTs facilities.	3.56 (1.136)	.641	
F7 Image (IM)	IM3- People in my organization who use ICT have more prestige than those who do not.	3.40 (1.006)	.804	.763
	IM2- People in my organization who use ICT have a high profile.	3.50 (1.067)	.780	
	IM4- Using ICT is a status symbol in my organization.	3.23 (.990)	.711	
	IM1- Use of ICT improves my image within the organization.	3.63 (.944)	.607	
F8 Social Influence (SI)	SI3- My organization has supported the use of ICT.	4.09 (.702)	.764	.749
	SI4- My organization thinks that encouraging knowledge about ICT with colleagues/students is beneficial.	3.97 (.755)	.729	
	SI1- Management of my organization thinks that I should use ICT.	3.82 (.897)	.720	
	SI2- My friends/colleagues think that I should use ICT.	3.96 (.792)	.603	
F9 Facilitating Conditions (FC)	FC3- A specific person or group is available for assistance with ICT difficulties.	3.26 (1.072)	.789	.715
	FC4- Specialized instructions concerning the system are available to me.	3.32 (.913)	.764	
	FC2- Guidance is available to me to use ICT effectively.	3.60 (.948)	.584	
F10 Behavioural Intention (BI)	BI7- I would recommend the use of ICT to other individuals.	4.21 (.685)	.862	.784
	BI5- I intend to increase the use of ICT in future.	4.03 (.726)	.832	
	BI6- I would recommend the use of ICT to other organizations.	4.14 (.723)	.814	
F11 Utilization (UT)	UT1- I use ICT for enhancing my knowledge and skills.	4.16 (.759)	.761	.814
	UT4- I use ICT for searching information for my work.	4.14 (.833)	.759	
	UT2- I use ICT for student contact and giving my advice.	3.92 (.972)	.757	
	UT3- I use ICT to assist administrative tasks.	3.92 (.802)	.739	
	UT5- I use ICT for personal tasks.	3.94 (.843)	.660	
	UT6- I use ICT in all of my work.	3.83 (.902)	.658	

Table 2: Impact Analysis of IndividualContext Factors on Behavioural Intention.

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	F value ANOVA	Sig. Level	β value	t	Sig. Level
1	.605	.369	.366	.506	115.850	.000	.531	8.585	.000
2	.627	.393	.387	.498	63.744	.000	.155	2.437	.016
3	.629	.396	.387	.498	42.882	.000	.060	1.047	.020

a. Predictors: (Constant), Attitude (AT)
b. Predictors: (Constant), Attitude, Belief (AT, B)
c. Predictors: (Constant), Attitude, Belief, Self-efficacy (AT, B, SE)
d. Dependent Variable: Behavioural intention (BI)

Table 3: Impact Analysis of Task-Technology Context Factors on Behavioural Intention.

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	F value ANOVA	Sig. Level	β value	t	Sig. Level
1	.355	.126	.122	.596	28.531	.000	.140	1.865	.044
2	.480	.231	.223	.561	29.522	.000	.388	5.176	.000

a. Predictors: (Constant), Accessibility (ACC)
b. Predictors: (Constant), Accessibility, ease of use (ACC, EOU)
c. Dependent Variable: Behavioural intention (BI)

Table 4: Correlation Matrix of Organizational Factors with Behavioural Intention

FACTORS		MS	IM	SI	FC	BI
MS	Pearson correlation	1	.399**	.530**	.543**	**.304****
	Sig. (2-tailed)		.000	.000	.000	.000
IM	Pearson correlation	.399**	1	.247**	.338**	**.286****
	Sig. (2-tailed)	.000		.000	.000	.000
SI	Pearson correlation	.530**	.247**	1	.442**	**.560****
	Sig. (2-tailed)	.000	.000		.000	.000
FC	Pearson correlation	.543**	.338**	.442**	1	**.211****
	Sig. (2-tailed)	.000	.000	.000		.003
BI	Pearson correlation	.304**	.286**	.560**	.211**	**1**
	Sig. (2-tailed)	.000	.000	.000	.003	

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

Table 5: Impact Analysis of Organizational Context Factors on Behavioural Intention.

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	F value ANOVA	Sig. Level	β value	t	Sig. Level
1	.304	.092	.088	.608	20.138	.000	-.021	-.268	.789
2	.353	.125	.116	.598	14.011	.000	.185	2.893	.004
3	.582	.339	.329	.521	33.458	.000	.565	8.066	.000
4	.587	.344	.331	.520	25.571	.000	-.091	-1.265	.207

a. Predictors: (Constant), Management Support (MS)
b. Predictors: (Constant), Management Support, Image (MS, IM)
c. Predictors: (Constant), Management Support, Image, Social influence (MS, IM, SI)
d. Predictors: (Constant), Management Support, Image, Social influence, Facilitating conditions (MS, IM, SI, FC)
e. Dependent Variable: Behavioural intention (BI)

Table 6: Impact Analysis of Behavioural Intention on ICT Utilization

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	F value ANOVA	Sig. Level	β value	t	Sig. Level
1	.524	.274	.270	.536	74.774	.000	.524	8.647	.000

a. Predictors: (Constant), Behavioural intention (BI)
b. Dependent Variable: Utilization (UT)

ANALYSING EMOTIONAL IMPACT OF SALES PROMOTION ON FMCG PRODUCTS PURCHASE

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Sales promotions are executed to give emphasis on making consumers to take action. This can be act of purchase, purchase in big amount, invoke impulse purchase or spread the word of promotion. Sales promotions help brands to achieve short term spike in sales, it is often referred to as incremental sales attributed to sales promotion. When an individual comes across sales promotion, particularly in the field of FMCG products, there is establishment of connection between item under promotion and the individual. This paper analyzes emotional impact of sales promotion, whether it positively or negatively impacts the promotion and its short term impact on sales of a product. With the application of Factor Analysis this paper gives the important factors to act upon by manufacturers pertaining to emotion as construct and with the application of multiple regression analysis. This paper elucidates specific emotions and tools that create these emotions as well as their impact on overall act of purchase. This study takes into consideration managerial impact of emotion as a construct on act of purchase while sales promotion is getting executed.

Keywords: Communication, Emotion, Emotional appeal, Marketing message, Sales promotion.

Marketers believe that the choices the consumers make derive from a rational analysis of alternatives available to them. In practical environment, however, emotions generally influence and lead to decision making of buying a particular item. Emotions are cues which lead to purchase of a product or service. It is hence, important for marketers to connect with consumers with right balance of emotions when they execute advertising and sales promotions. It is noteworthy that brand building is a long term evolving process and shorter way do not necessarily work. Brands are developed in the minds and hearts of consumers and it is important to recognize that consumers prefer and select brands rationally as well as emotionally. Particularly in India, emotions are definitely a vital factor in consumers accepting and loving brands.

This paper studies the emotional impact of sales promotions on purchase decision. How sales promotions connect with customers is important. Sales promotions create emotions in customers and emotions will lead to decision of purchase of a product. This becomes even more important in hyper marts where brand competes with competitive brands and customers have varieties of emotions for different brands they observe. Emotion and logic both play an important part in customers' buying behavior. But in order to make an act of purchase, the consumer must have a kind of emotional attachment in the product, making the consumer *want* to get it. As per Perry Marshall, "We all fundamentally take all of our decisions based upon *emotion,* not logic. Logic supports our emotions and logic is used to rationalize our decisions after we have taken them. (Verticalresponse.com, 2016)

It is important to elicit consumers' emotions when crafting marketing messages. The generally used emotional triggers studied by Gunelius (2010) are fear, guilt, trust, value, belonging, competition, instant gratification, leadership, trend-setting and time. Marketers elicit sales promotion responses by developing emotions basis on any of above emotion types. Why do consumers choose to pay more for branded products? The reason is marketers connect emotions to their sales promotions and consumers attach themselves to these products with likewise emotions (Murray, 2013).

Impact of integral emotions on decision-making:

Consumers are exposed to sentiment inducing marketing communication in the form of advertisements, creative product packaging, positioning, associate events, etc. (Chen et al. 2015 and Lee CJ et al. 2013). Brands and marketing contents analytically portray and induce emotions that encourage preferred consumer responses. Early literature presented the effect of sentiments on consumption by contrasting emotion-laden communication appeals to normal or rational appeals. In a field research, anti-child abuses public communications

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that used empathetic (vs. rational) appeals were more efficient (Bagozzi RP and Moore DJ, 1994).

When do emotional appeals influence decisions?
Effectiveness of emotional and sentimental stimuli may rely on their compatibility with many consumer-related factors, for example culture, consumers' prominent self-identities, and their incidental sentimental states. The influence of distinct emotions across people belonging to various cultures differs emotional appeals may not be well-matched with the participants' culture and may be more effective due to their novelty (Aaker JL, and Williams P, 1998). Individuals focused with their athlete identity were most influenced by anger-based advertisements because anger is constant with the stereotypical social individuality of being an athlete.

Measurement of Emotions (Bagozzi et al, 1999)**:** The measurement of emotions could center on a full set of signs or facts, including evaluative appraisals, subjective feelings, body posture and gestures, body expressions, physiological reactions, action tendencies, and explicit actions. Whatever measurements one uses should be linked to a fundamental theory of emotions. Two influential researches in the measurement of emotional reactions toward advertisements have been conducted by Edell and Burke (1987) and Holbrook and Batra (1987). Edell and Burke (see also Burke and Edell 1989) constructed a 52-item scale for measuring emotions towards advertisements, while Holbrook and Batra researched with a 94-item scale, which was later confined to 34 items (Batra and Holbrook 1990).

In this study, four promotion related variables have been taken into account. These are promotions that influence sentiment, promotions leading to happiness, promotions that arouse trendsetting feeling, promotions that provide value to customers. With the application of Factor Analysis technique, underlying two significant variables have been identified with above four variables as input variables.

I. Review of Literature

Definition and function of emotions: The term affect can be considered as an umbrella for a set of specific mental processes including emotions, moods, and (probably) attitudes. Thus, affect may be considered a general category for mental experience processes, rather than a specific psychological process, per se. By emotion, authors mean a mental status of readiness that arises from cognitive appraisals of actions or thoughts; has a phenomenological tone; is supported by physiological processes; is often articulated physically (e.g., in gestures, posture, facial features); and may result in particular actions to affirm or cope with the sentiment, depending on its nature and meaning for the person occupying it (Bagozzi et al, 1999). For a relevant perspective, refer Lazarus (1991) and Oatley (1992). The line between an emotion and mood is difficult to draw but often by convention incorporates conceiving of a frame of mind as being long lasting (from a few hours to days) and lower in power than a sentiment. Though, exceptions to this explanation can be found. Still another difference between emotions and moods is that emotions typically is intentional (i.e., it has an object or referent), whereas moods are usually non intentional and global or diffused (Frijda 1993). Also, moods are not as directly linked with action tendencies and overt actions as are many emotions.

Attitudes are often considered results of affect, with the same measures used on occasion to indicate sentiments and attitudes (e.g., pleasant-unpleasant, happy, sad, or interested-bored semantic differential items). Nevertheless, some authors take a confined view of attitudes and describe them as evaluative judgments (measured, e.g., by good-bad reactions) rather than emotional situations. Cohen and Areni (1991), for example, reserve the term affect for "valence feeling states," with emotions and moods as particular examples. Attitudes are evaluative decision in their research view.

The difficulty of measuring emotions:
Measuring emotions is an extremely delicate task (Derbaix and Pham, 1989). In order to reveal 'the four aspects' of an emotion (its intensity, direction and content and the individual's awareness of it; see Derbaix and Pham, 1989), ideally one could combine three traditional measurement techniques: a measurement of the neurophysiologic and biological component, the expressive component and the experiential component.

Because physiological and biological changes play a central role in emotional experiences, measures of blood volumes, cardiac rhythms, electro dermal activity and respiratory frequency are often used by psychologists to determine the valence and intensity of emotions.

Such measurement methods are currently being developed in marketing through what is known as Neuro-marketing, which uses techniques borrowed from neuroscience (Droulers and Roullet, 2007). However, these methods are often difficult to implement, especially in retail outlets (costly equipment that is difficult to use in-store; and a significant instrumentation effect in a social environment).
Approaches to studying emotions:

There are three generally accepted approaches to studying emotions in the marketing field: categories, dimensions, and cognitive appraisals. The categories approach does not attempt to determine the causes of emotions, but rather groups the emotions based on their similarities. This approach has been applied in the marketing field by Batra and Ray (1986) and Batra and Holbrook (1990) to demonstrate that emotional responses affect attitudes towards advertisements. However, there is no attempt to determine what causes the similarities between emotions within each category; therefore, it is of limited use in explaining when a particular emotion will be felt.

The dimension's approach uses valence and arousal to differentiate emotions (Mano, 1990). These dimensions describe inherent elements of feeling states, i.e. qualities that all feelings have, hence this approach has been and continues to be quite popular. Valence may be positive or negative while level of arousal ranges from high to low (Bagozzi et al, 1999).

The dimension's approach, while parsimonious, is limited in its ability to distinguish focally between emotions of similar valence and arousal levels, such as the highly negative emotions of shame, fear and anger.

A third approach, cognitive appraisals, offers a more in-depth way to explain the subtle nuances of emotions. Importantly, as an emerging theory its aim is to predict what emotions should be elicited in a given context as well as how evoked emotions affect behavior. However, it is likely that those on the winning (losing) team experience similar emotions.
The cognitive appraisals approach is therefore more sophisticated than the dimension's approach in both purposes.

II. Research Design and Methods

Type of research: Exploratory research

Research Objectives:

- To explore different emotions considered by marketers while executing sales promotion and identify the significant underlying factors
- To explore different types of emotions expressed by consumers and determine the most impactful emotion responded by customers

Data collection type of explanatory research method: Survey method
Number of respondents: A structured questionnaire was administered to 156 buyers. Out of them 124 completed questionnaires and gave their response.

Research Questions:

1) What emotions do buyers go through while responding to sales promotion?
2) Identify the most impactful type of emotion by buyers and suggest which type of emotion the marketers should entice.

What emotions do buyers go through while responding to sales promotion?
To answer above question, authors conducted factor analysis.

Need to use Factor Analysis
To reduce four variables which represent factors considered by buyers while responding to sales promotion to two main variables (Beri G.C. 2011). Authors want to reduce these eight variables to two variables so that variables determining response to sales promotion can be properly identified based on responses provided by 124 respondents. Initial variables before factor analysis application to determine response to online sales promotion are as follows:

- Sales promotions targeted to entice sentimental emotions (var 1)
- Sales promotions targeted to entice happiness emotions (var 2)
- Sales promotions targeted to entice trend setting emotions (var 3)
- Sales promotions targeted to entice value oriented emotions (var 4)
- Sales promotions targeted towards quantity discounts (var 5)
- Sales promotions targeted towards price discounts (var 6)
- Sales promotions targeted towards next purchase (var 7)
- Sales promotions targeted to entice quality satisfaction feeling of product (var 8)

Communalities, Total variance explained, Component Matrix[a] and Rotated Component Matrix[a] tables are shown in tables 1, 2, 3 and 4 respectively.
[a] Rotation converged in 4 iterations.

III. Analysis, Discussion & Findings

Refer Table No. 1: Communalities
The Communalities tell us what proportion of each variable's variance is shared with the factors which have been created. In the Initial column these are based on all eight factors (one per variable). Accordingly, the values in this column tell us how much variance each variable shared with all the other variables. The researchers asked

SPSS to create only two significant factors. The communalities in the Extracted column tell us how much variance each variable has in common with the two factors that the author has kept. Item 3 has a relatively low value. If a variable does not share much variance with the other variables or with the retained factors, it is unlikely to be useful in defining a factor.
Refer Table no. 2: Total Variance Explained

The Total Variable Explained table shows us the Eigen values for our factor analysis. SPSS started out by creating factors, each a weighted linear combination of the items. The initial Eigen values tell us, for each of those factors, how much of the variance in the 8 items was captured by that factor. A factor with an Eigen value of 1 has captured as much variance as there is in one variable. The Extraction Sums of Squared Loadings are interpreted in the same way that Eigen values are. Component 1 and 2 together represent 62.193% of variance.
Refer Table no. 3: Component Matrix

This table contains component loadings, which are the correlations between the variable and the component. From table no. 3 it can be observed that component 1 is heavily loaded on var 1, var 2, var 3 and var 4. So, Sales promotions creating hedonic experiences and emotions become one of the variables in determining buyers' response to sales promotions. Component 2 is heavily loaded on var 5, var 6, var 7 and var 8. So, Sales promotions which are placid and provide utilitarian benefits become second variable in determining buyers' response to online sales promotions.

Refer Figure: 1 Scree Plot depicting Eigen Values
It can be observed from above Scree plot that variables 1 and 2 have Eigen values of more than 1 and are significant independent variables.

Results and discussion:
After factor analysis application with $\alpha = 0.05$, the final two variables authors suggest are:

- Sales promotions creating hedonic experiences and emotions
- Sales promotions which are placid and provide utilitarian benefits

From Total Variance Explained table, it can be observed that there are two significant factors which contribute to variance of the dependent variable. To identify the important significant variables authors have created Component Matrix as given in table 3. It can be noted that the independent variables as explained by Component Matrix are heavily loaded to sales promotion directed to create hedonic experiences and sales promotions directed to provide utilitarian benefits.
From the Scree Plot diagram, it can be noted that the two significant variables with high Eigen Values explain majority of variance in dependent variable, rest variables having less Eigen Values contribute to less variance in dependent variable.

As managerial implication from above analysis, it can be observed that sales promotions are presented to users by promoters offering both hedonic and utilitarian benefits. Users respond to both the types of sales promotions depending on the need of purchase. It has been observed that users at leisure time respond to hedonic sales promotions whereas utilitarian sales promotions are responded when purchase is made on need basis.

Identify the most impactful type of emotion by buyers and suggest which type of emotion the marketers should entice.
To identify the most impactful type of emotion expressed by buyer's authors have conducted Multiple Regression Analysis.

Need to use Multiple Regression Analysis:
Multiple regression analysis is a powerful technique used for predicting the unknown value of a dependent variable from the known value of two or more independent variables- also called the predictors. Multiple regression analysis can be used to anticipatively measure response to online behavioral advertisements.
Author wishes to estimate the regression line: $y = b1 + b2\ x2 + b3\ x3 + b4\ x4$
Where responses are derived from last 10 itineraries
y= No of times the sales promotion selected
b1= Intercept
x2= Emotions arousing excitement
x3= Emotions arousing trust
x4= Emotions arousing satisfaction

Data Analysis
Refer Table No. 5: Regression Statistics Table
The first indicator of generalization is the adjusted R Square value, which is adjusted for the number of variables included in the regression equation. For the data we are analyzing, $R^2 = 0.0881$ and the Adjusted $R^2 = -0.0421$. These values are very close, anticipating minimal shrinkage based on this indicator. The adjusted R square is used to estimate the expected shrinkage in R^2 that would not generalize to the population because our solution is over-fitted to the data set by including too many independent variables. If the adjusted R^2 value is much lower than the R^2 value, it is an indication that our regression equation may be over-fitted to the sample, and

of limited generalization. $R^2 = 0.0881$ means that 8.81% of the variation of Yi around $\bar{Y}$ (its mean) is explained by the regressors x2i, x3i, and x4i The standard error having value of 1.67 refers to the estimated standard deviation of the error term u.

Refer Table No. 6: ANOVA table
The ANOVA (analysis of variance) table splits the sum of squares into its components. Regression MS (Mean Square) is 1.8865 and residual MS is 2.7895. Overall F test for Null hypothesis is 0.6763. The column labeled F gives the overall F-test of H0: $\beta2 = 0$, $\beta3=0$ and $\beta4=0$ versus Ha: at least one of $\beta2$, $\beta3$ and $\beta4$ is not equal zero. The column labeled significance F has the associated P-value. Since $0.5762 > 0.05$, we accept H0 at significance level 0.05.
Refer Table No. 7: Regression Coefficients Table
A simple summary of the above output is that the fitted line is
$y = 4.094 + 0.097*x2 + 0.024*x3 + 0.3172*x4$

Results and Discussion
Authors suggest that emotions arousing satisfaction and excitement are the important factor in determining buyer's response to sales promotion. As can be seen in above equation as residual value of almost 4, hence authors suggest that there are other factors for e.g. display settings, audio visual context, competitive impacts etc. also impact response to sales promotion. Thus, with Multiple Regression Analysis with $\alpha = 0.05$, authors observe that dependent variable of response to sales promotion is dependent on emotions which are related to need satisfaction and emotions which are related to hedonic experience.

As managerial implication of Multiple Regression Analysis, it can be discussed that marketers executing sales promotion should devise the sales promotion basis on store image and consumers visiting the stores. The stores dealing with CPG products can be benefitted if they execute sales promotions directed to arouse need satisfaction emotions. Consumers eying to buy grocery items would look for sales promotions providing utilitarian benefits. Whereas stores dealing with luxury and leisure items should focus on sales promotions which provide hedonic benefits and excites the customers to try a particular product or service.

IV. Conclusion

Conclusion basis on research question 1: With the application of Factor Analysis, authors conclude that sales promotions executed to entice emotions of sentiments, happiness, trend setting, value orientation, quantity discounts, price discounts, next purchase and quality satisfaction can be grouped into following two categories. Sales promotions directed to provide utilitarian benefits and sales promotions directed to provide hedonic experiences. As managerial implications, marketers should execute sales promotions directed to either of these two categories for effective response.

Theoretical contribution: This study gives insights in terms of which emotions consumers go through when they are exposed to sales. This study investigates various emotions in the purview of sales promotions, viz. fear, guilt, trust, value, belonging (patronage), competition, instant gratification, leadership, trend setting, and time. This study explores impact of emotions in decision making in the presence of sales promotion and when emotional appeals influence the sales promotions. This study discusses in detail various aspects of measuring emotions and difficulties in measuring emotions in the purview of sales promotions. Approaches in measuring emotions have been discussed in this study as Categories approach, Dimensions approach and Cognitive appraisal approach.

Conclusion basis on research question 2: With the application of Multiple Regression Analysis authors conclude that dependent variable of response to sales promotion is dependent on emotions which are associated with need satisfaction and emotions which are associated with hedonic experience. As a managerial implication, marketers therefore should execute sales promotions basis on stores image and customers profile to arouse utilitarian or hedonic emotions.

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Table 1: Communalities

	Initial	Extraction
Sentiment	1.000	.525
Happiness	1.000	.806
Trend	1.000	.220
Value	1.000	.621
Quantity	1.000	.639
Price	1.000	.769
Next Prchs	1.000	.780
Satisfaction	1.000	.615
Extraction Method: Principal Component Analysis.		

Table 2: Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.004	37.553	37.553	3.004	37.553	37.553	2.920	36.496	36.496
2	1.971	24.640	62.193	1.971	24.640	62.193	2.056	25.697	62.193
3	.887	11.081	73.274						
4	.705	8.815	82.089						
5	.602	7.530	89.619						
6	.395	4.933	94.552						
7	.265	3.315	97.867						
8	.171	2.133	100.000						
Extraction Method: Principal Component Analysis.									

Table 3: Component Matrix

	Component	
	1	2
Sentiment	.863	-.249
Happiness	.818	-.334
Trend	.756	-.262
Value	.752	.237
Quantity	.367	.292
Price		-.783
Next Prchs		.721
Satisfaction	.561	.674
Extraction Method: Principal Component Analysis.		
a. 2 components extracted.		

Table 4: Regression Statistics Table

Regression Statistics	
Multiple R	0.296822723
R Square	0.088103729
Adjusted R Square	-0.042167167
Standard Error	1.670189844
Observations	25

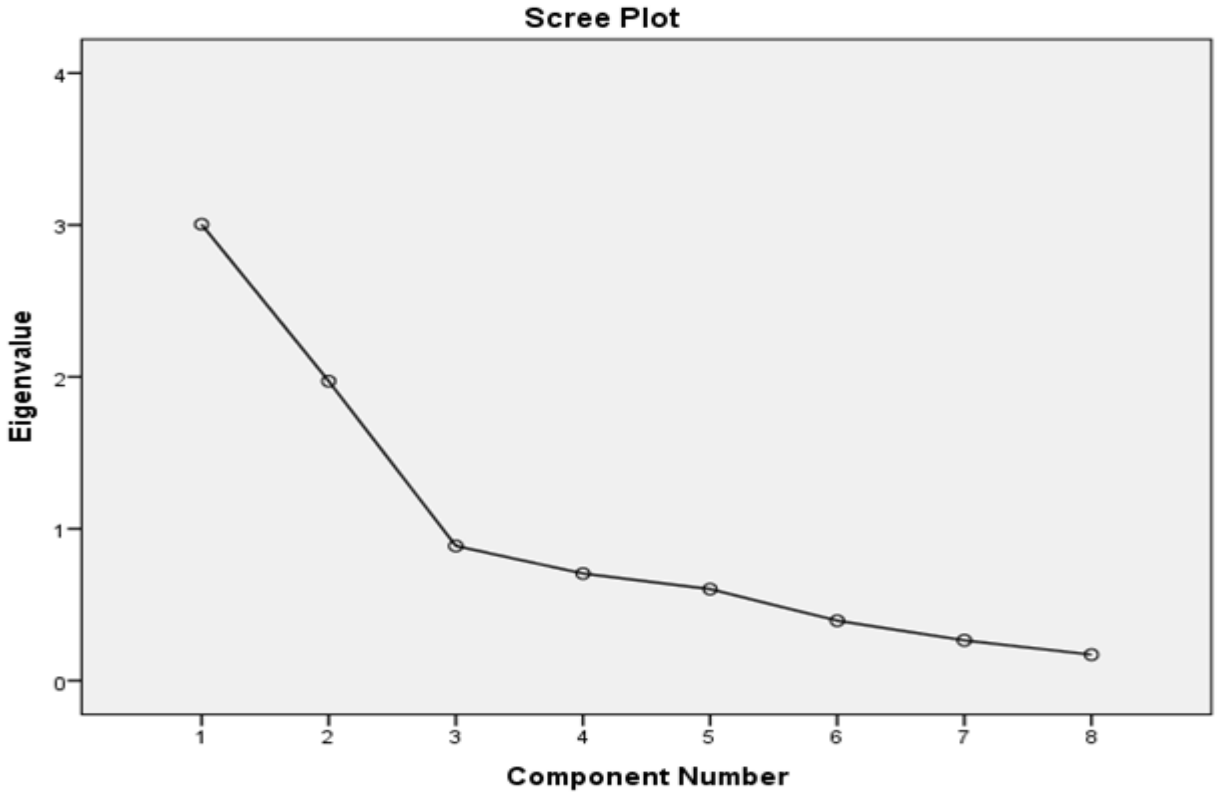
Table 5: ANOVA Table

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	5.659783558	1.886594519	0.676311685	0.576218461
Residual	21	58.58021644	2.789534116		
Total	**24**	**64.24**			

Table 6: Regression Coefficients Table

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	4.0941712	2.093476936	1.955680134	0.063938314	-0.259452	8.44779485
x1	0.0973356	0.366294458	0.265730506	0.793038097	-0.664415	0.85908663
x2	0.0240491	0.242974527	0.09897791	0.922094547	-0.481244	0.52934229
x3	0.3172584	0.227822817	1.392566406	0.178321482	-0.156525	0.79104188

Figure 1: Scree Plot Depicting Eigen Values



ENSURING VALUE FOR STAKEHOLDERS BY SUSTAINABLE BUSINESS: AN ALTERNATE MODEL PROPOSITION

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Sustainable businesses aim at satisfying the need of society in addition to making profits for themselves. There is a need to investigate whether the existing business theories understand business goals with that perspective or not; and if not, then what can be the alternate model in the current scenario in business. Qualitative research has been used for the present study. The published literature has been used to form logics and arguments to arrive at the proposed model. The study suggests a sustainable model with help of various variables, which may serve the purpose for existence of business and also make the business sustainable. The study is highly called for in the present scenario.

Keywords: Sustainable Business, Business Theories, Business Goals, Qualitative Research.

Starting from the barter system to today's modern era of plastic money, mankind has trodden a remarkably long path. Undoubtedly, "profitability" has always been the driving force and an undercurrent behind all this development; however, growing cut-throat competition and business rivalries have been taking heavy toll on the quality, transparency, environment and the society in endangering the peaceful coexistence of business and society. Gaur et al (2009) understand human lives at four levels, vis-à-vis, individual, family, society and nature. Gaur et al (2009) maintain that any activity happening in the universe needs to appreciate the harmony amongst these levels of existence. Nelson & Prescott (2003) observe that the main purpose of the business is to produce the products for human needs such as water, electricity, health-care, housing and education at an affordable price. Nelson & Prescott (2003) further argue that the other aim of the business is to create sustainable and harmonious employment in society thus the status of living should get an upward push. The study also argues that the business also needs to take care of the environment in the sense that it does not harm the nature or natural resources in the course of its business.

Henderson (2005) observes that most of the private organizations neglect the prime goal for their existence, which is to serve society rather than making the mere profit. The mere-profit-making approach of the business harms the organization in the long term. Aakhus & Bzdak (2012) opines that for organizations to sustain for the long term, they should adopt the share value method, which increases the trust of the customer in the business, and the customer considers himself as a part of the whole process. Terziev (2012) also supports the fact and argues in his study that business has the prime responsibility of increasing wealth of all the stakeholders including employees, consumers, government, society and the nature; and that no business can survive in the long run if they avoid such stakeholders. Modesto & Oliveira (2006) opine that there is a responsibility of the business managers to make a connection with society to understand the consumers and their need appropriately rather than imposing the products on the customers. Goodwin et al (2008) opines that the business should also think about using of the holistic technology thus both the workers and environment does not get affected from the production. Goodwin et al (2008) also stress upon the need for a proper distribution system which may refer to the right product at the right price to the right consumer. This paper highlights that businesses need to concentrate on the needs of society rather than merely focusing on making the profits. To be sustainable, businesses have to conduct and follow rigorously the process of production to consumption while

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providing value to all the stakeholders and maintain harmony of the nature.

Since its origin and start, businesses have gone through many changes and experiments. Various business theories have emerged over the past years. The discourse about business, its goals, its stakeholders and its processes is different across these theories. This paper reviews the existing business theories on these issues and proposes an alternate model.

Discourse in existing business theories about business goals

Smith (1776) describes how business can become competitive so that the needs of society can be fulfilled in a mutually fulfilling manner. Though with the help of competition, Smith (1776) aims to provide better products and services to the customer. In popular perception, however, the capitalists or business owners misinterpreted this viewpoint by indulging in exploitation of labour and other resources in promoting the culture of consumerism. Society and nature got largely neglected in this process while profit emerged to be the sole motive of business. Smith (1776) model of capitalism has been extensively favoured and criticized through literature. Worland (1999), Schumpeter (1934), Bassiry & Jones (1993), Mackey (2014) and Phelps (2010), support the capitalistic theory given by Adam Smith and argue that this leads to innovation in technology while also creating better facilities for consumers making their lives more comfortable.

On the other hand, Clarke (1988), Reisman (1996), Lenin (1896) & Holcombe (2012), oppose the theory of capitalism and remark that it leads to exploitation of the labour and society, while favoring the rich and industrialists. Some researchers give improvised versions of capitalism. Soskice and Hall (2001) propounds the theory of variety of capitalism, which comprises of two major capitalist models illustrious by the extent to which a political economy is, or is not, "coordinated". He names it as coordinated market economy (CME) and liberal market economy (LME). CME is reliant on non-market associations, reliable commitments and premeditated calculations on the part of firms, while LME is defined in terms of arm's length, competitive relations, rivalry and formal contracting, and the process of supply and demand in line with price signaling. Florida (2003) makes a contribution in the form of creative capital theory. The theory indicates that the firm has to identify a specific group of people with the skills, which may benefit from the growth within the firm and use the resource optimally to lead the race in this knowledge-based economy. According to the theory, these kinds of people may convert their innovative ideas from the business to give an edge to the organization or economy. The study also suggests that the process further helps reduce the unemployment rate thereby contributing to the larger societal cause besides the profit-making at the level of business. Clarke (1988) argues that the more successful capitalist does not confine his production within the limits to the market, but seeks to capitalize on his advantage by expanding capacity, intensifying labour and extending the working day. Thus the law of value, imposed on capitalists through the pressure of competition, underlies the tendency for capital constantly to expand the forces of production without regard to the limits of the market. This created a conflict between the labor class and the capitalists. The capitalists also started dominating the government. It is evident that in present era, the business giants play big role in running the governments in all the major countries.

Karl Marx (1867) expands the concept of business from a socialistic perspective that deals with the class difference and the working hour wage rate, etc. The system basically follows the theory of equality among owner and worker. Lenin (1896) states that Marx and Engel's statements depict socialism not to be the invention of dreamers, rather the final aim and necessary result of the development of productive forces in modern society. All recorded history hitherto has been a history of class struggle, of the succession to the rule and victory of certain social classes over others. Lenin (1896) forecasts it to continue until the foundations of class struggle, and of class domination—private property and anarchic social production disappear. The theory of Marx has been shored up by many more scholars. Editors, Rethinking Marxism (2015) argues that the theory of Marx disbands the unyielding, unhistorical, accepted facade of social organizations. The theory exposes their chronological genesis and shows. Marx's thinking supports the participation of all humans in work and lives together to build a harmonious society. Dukor (1990), Veblen (2008), Madelin (1997), Bourdieu (1998) and Leonard (2000) also support the fact that the socialistic theory leads to a harmonious society. Misses (1920), Tucker (1978), Hans-Herman-Hoppe (2010), Cockshott and Zachriah (2012) oppose the theory of socialism. They start by assuming that the socialist state has perfect information about preferences, and can choose a basis by which consumption goods will be distributed. It is possible that these people delay immediate consumption, therefore, accumulating capital, and trading goods with one another through a barter system. However, this would only be true for consumption goods; while production goods are an inalienable property within the community. Misses (1920), rests his criticism on the firm belief that even under the best

circumstances, it is impossible in a society without private ownership over the means of production (and, therefore, without the money prices generated by exchange) to appraise factors of production and determine the proportions in which those factors should be used in order to produce final output. Further, the profits and losses that are generated through the market provide crucial guidance to entrepreneurs and innovators. Guidance is replaced with utter darkness when the means of production are not privately owned.

The researchers also show how so-called socialism leads to capitalism in the long run. Pei (2006) depicts that in both Russia and China, the highest level of democratic debate occurred in the late 1980s, during the early experimental period when various reform paths were being debated by the national leadership. Over time, as the economic reforms eventually took over, the scope for political dissent actually shrank. This is the opposite of what one would expect from modernization theory, which expects socio-economic development to produce new constituencies (workers, the middle class and businessmen) that demand a say in decision-making process.

Though the attainment of harmony and prosperity at the level of society was one of the goals of business as portrayed by both the theories, the same could not be achieved so far. The proponents of the theories give confusing arguments with respect to consumerism, labor exploitation, production, labor rights, etc. The larger aim of the business has been lost in this journey.

Business Theories and Coexistence

An evaluation of the human living at the levels of individual, families, society and nature can act as a guide to evaluate the capitalistic and socialistic theories from a humane perspective.

Figure 1 demonstrates the four levels of existence, i.e., individuals, families, society and nature. Gaur et al (2009) maintain that whatever a human does, impacts each of these levels. In an ideal state, a human lives harmoniously at all these four levels. Similarly, the business should also coexist with all these levels of human living in order to achieve its goal of fulfilling the human needs. The capitalistic theories led to the development of a culture of consumerism, which relied on creating perceptions related to needs among individuals. Henceforth, the focus was on furthering the cause of consumerism, leading to demand getting detached from the real needs and attached with perceived needs. Clarke (1988) argues that the more successful capitalist does not confine his production within the limits to the market, but seeks to capitalize on his advantage by expanding capacity, intensifying labour and extending the working day. Thus the law of value, imposed on capitalists through the pressure of competition, underlies the tendency for capital to constantly expand the forces of production without regard to the limits to the market. This shows that the capitalistic model neither serves the consumer harmoniously nor the labor. On one end, it attempts to increase unnecessary consumption among individuals, and at the other end, exploits the labor force for ever-increasing production.

Lenin (1896) observes that the supremacy of finance capital over all other forms of capital means predominance of the rentier and of the financial oligarchy; it means a small number of financially "powerful" states stand out among all the rest. Lenin (1896) further states that the concentration of capital and of production into the hands of fewer, and fewer firms followed inevitably from the social conditions of capitalist production, among which the most general are (a) the public division of labour from which springs the differentiation of the various branches of production; and (b) private ownership over the means of production. Given these things and competition exists in its germinal form, even the investors came under tremendous pressure of competing with other firms. In order to dominate others to win the competition they started giving lucrative offers to the customers. In terms to maximize profits, all of them started compromising on quality.

Even the government got involved in this business of profit and forgot the main aim of serving the countrymen. Holcombe (2012) explains that crony capitalism is a by-product of big government because the government is involved in an economy. Further the profitability of business depends on government policy. Even entrepreneurs who prefer to avoid cronyism are pushed into it because they must become politically active to maintain their profitability. When the government looms large in economic affairs, firms and other organized economical groups push for government policies that will help them and try to prevent the harm that is caused by government policies that work against them.

Discussion about holistic perspective of business

By focusing on holistic interests of individuals, families, society and nature, the business can vie for sustainability. In further elaboration of this thesis, the present section discusses how can this be achieved and what will be the end result of such a business. Figures 2 and 3 demonstrate the deliverables from the business to individuals. Figure 2 looks at the expected deliverables from business to individual stakeholders.

Figure 2 depicts that the consumer wants material satisfaction from the product or service being consumed by him. For example, in the case of an agriculture product, the consumer wants the product that nurtures and protects his body. Also, the consumer wants the product to be fairly priced. A product, which is available at a 'cheaper than fair' price but has been produced through the usage of chemicals that may harm his body in the long-run is not a valuable product for the consumer. On the other hand, a product that is produced through natural farming, even if available at a costlier price, makes the cut of a valuable product if it nourishes and protects, rather than harming the body of the consumer. Employees need rewards in the form of wages to run his family. Besides, they need a harmonious working environment along-with the time to maintain relationship in his family. Better wages at the cost of harmony at workplace or family relations may appear materialistically valuable for the employees but are not valuable when considered in a larger perspective. Investors need return on investment, growth and sustainability of the business. The suppliers need their share in terms of wealth. Sustainability of the business is an added advantage for the suppliers also since it promises their sales to be sustainable as well. Other individual stakeholders may also look towards the business for some value. However, this value needs to be evaluated from a holistic rather than just materialistic perspective.

Kumarappa (1951) maintains that the major objective of entire human action is not just the material satisfaction but has a massive bearing impact on our social order and ethos through the progress of distinctive personality. The main aim of all the activities is to make a world which does not depend on exploitation of the other to achieve distinctive material satisfaction but a world with the harmony. Kumarappa (1951) presents Gandhian philosophy as one method that can lead to a peaceful economy.

Figure 3 demonstrates the deliveries to individual stakeholders in the current scenario none of the individual stakeholders to get a harmonious return from the business. Consumers get unhealthy products and speculated service terms. As observed by Clarke (1988),'successful' capitalists did not make the product needed by the society, rather they produce more and then use all means to sell it to the consumer. Similarly, employees get low wage rates, and are having to work for long hours. Investors are not sure about the sustainability of the business while the suppliers are speculating for their share.

Current business also leads to an unharmonious environment in the families since the families get unhealthy and unhygienic food, and largely suffer from the health problems. Cockshott and Zachriah (2012) in their study state that the companies should use environment-friendly techniques for production. This will serve both the environment and the consumer in a holistic way. Further, when the employee does not get the worth for his work, he may not be able to fulfill his family needs. Investors also suffer in maintaining the relationship since the business stresses them heavily. In turn, modern day businesses are playing a lead role in creating a society which does not think about the harmony and rather demonstrates self-centered behavior, therefore is divided into a nuclear society where people just want to fulfill their own desire and are preconditioned to consider money as the only important resource. In that pursuit, businesses are exploiting everyone from individual to the government. Business is losing on its primary motive of delivering for the needs of the customer. Rather, it has defined success in terms of being able to create consumer needs. It puts to use advertisements and other methods to influence the mind of consumers and precondition them to buy the product that may not serve any real purpose. Nagraj (2008) and Gaur et al (2009) observe existence to be coexistence. Gaur et al (2009) expand the whole human system to be attached in a chain and maintain that the only way to achieve the real objective for human being is to live harmoniously with all the levels, which are: individual, family, society and the nature.

Model proposition

Renesch (2008) argues that humanizing capitalism refers to making it 'people friendly'. Renesch (2008) also observes that Adam Smith's capitalism was meant for the well-being of the consumer only, but his idea is twisted and used for the exploitation of labor and consumer for short-term goals of profit for few. Kumarappa (1951), Habib (2015) and Gaur et al (2009) also stress upon the need for business to concentrate on the facilitation towards a harmonious society.

In an attempt to rethink and rebuild the business model by taking all the four levels of the existence into consideration, the paper proposes an alternate model. It has already been discussed in the paper that business needs to look beyond profit and be driven by the real needs of the society. Figure 4 exhibits the model.

Figure 4 presents how the current business system is leading to exploitation at all the four levels of existence leading to negative value for all the stakeholders. The proposed model factors in value creation at the level of all stakeholders within the ambit of business. Business working as per the model will deliver value at all the four levels of existence i.e., Individual, Family, Society and Nature. Such business shall ensure sustainability for the

business which will provide continuous value and growth to the owner. The employees shall get that fair share and fulfill the needs of the family thus get attached with the business objectives with full dedication. Nature will also not get exploited and thus will enrich the environment, which in turn serves the individuals, families and the society.

The above model aims at bringing about continuous happiness and prosperity in the society which is also the major goal of business defined by all the theories. Such business fulfills the need and requirement of all the stockholders. The model also helps in removing unfair business means which actually lead to the clash between the classes and further create division in the society leading to violence in the society.

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Figure 1. Levels in existence

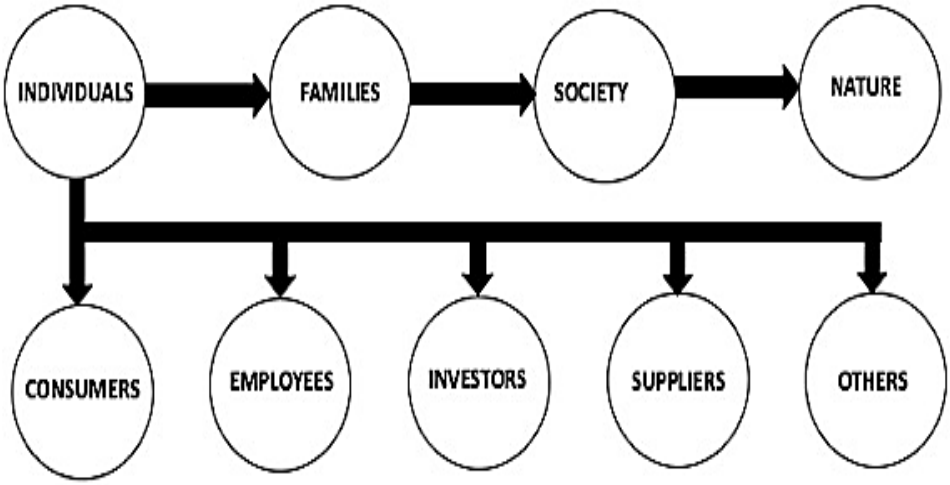


Figure 2. What needs to be delivered by the business to these partiies

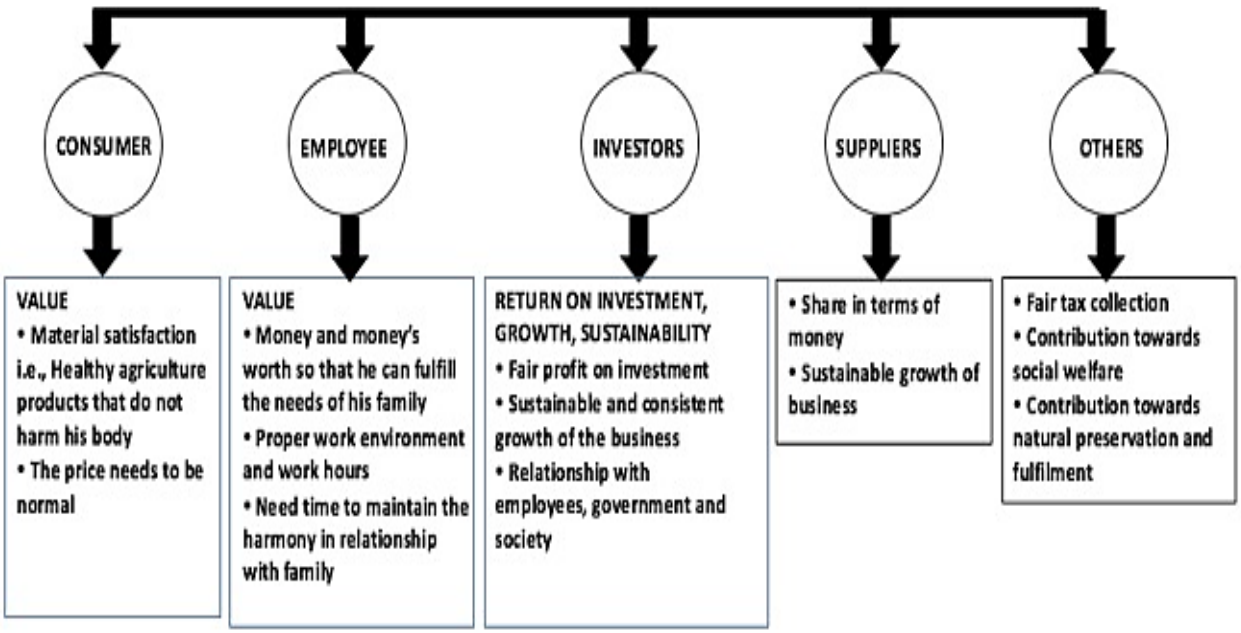


Figure 3. What Existing Systems Deliver

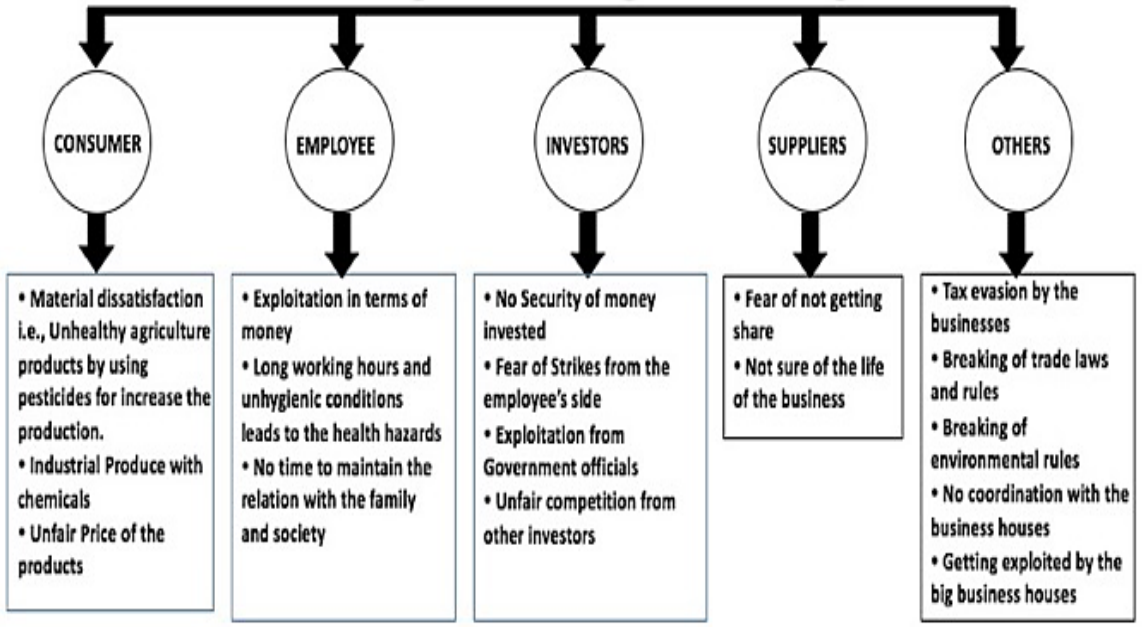
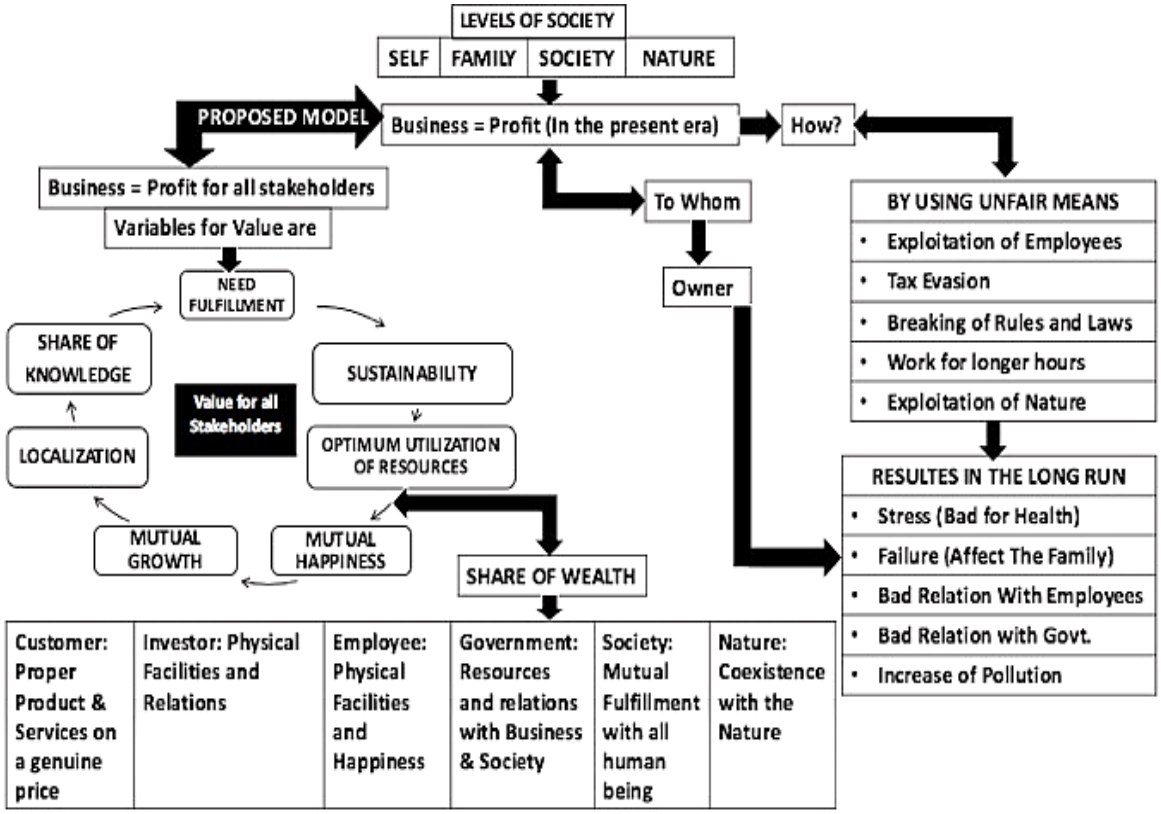
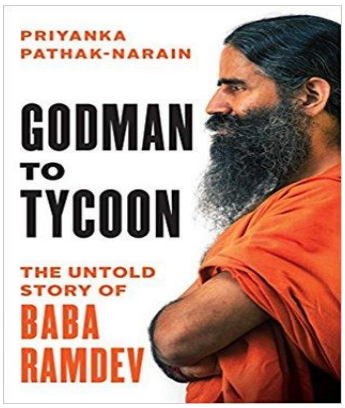


Figure 4. Proposed model for business.





A Book Review On "GODMAN TO TYCOON: THE UNTOLD STORY OF BABA RAMDEV"

Author: Priyanka Pathak-Narain
Publisher: Juggernaut Books, New Delhi
ISBN: 9789386228383
Year of Publication: 2017 (1st Edition)
Price: 299/-

Satish Kumar Dogra *

The role of entrepreneurs is very crucial for the economic growth and development of a country. In India also several renowned entrepreneurs with their great and unstinted efforts have been providing many innovative products and services not only for India but also for the entire world. The major objective of businessmen is to identify the numerous needs of consumers and with their Innovative ways, produce products to satisfy the customer's needs & in the process get their rewards in the shape of profits.

The book "Godman to Tycoon: The Untold Story of Baba Ramdev" has been written by Priyanka Pathak Narain and traces the transformative life of Baba Ramdev from a Yoga Guru to a business tycoon. The book has 25 chapters that highlight the profile, efforts, strategies and the excellent achievements of Baba Ramdev. The book also explains the journey of Baba Ramdev from a simple boy from a remote village in Haryana to becoming a world renowned Yoga Guru to a business tycoon with a capacity to overtake many multinational brands in terms of revenues. He was greatly influenced by Arya Samaj Teachings and had no formal education except that he attended two Gurukuls for some basic education. It mentions about Patanjali FMCG products being produced numbering 500+ and serving a very large consumer base at the bottom of the Pyramid. He has the knack of keeping good relations and networking with those in power. The Products made by Patanjali have the Herbal and Ayurvedic base which goes very well with Indian consumers and they readily accept the products. Baba Ramdev takes very quick and strategic decisions which is a hallmark of any successful businessman. His deputy Acharya Balkrishna & few other peers and mentors find frequent mention in the book who have played crucial role in Baba's success. Baba Ramdev emphasizes that if you have a healthy body, you can do whatever you like with it. He motivates people all over, to adopt Yoga techniques in this modern world to live a healthy & peaceful life. Being a very ambitious person, Baba Ramdev makes it a point to meet many dignitaries, politicians, religious gurus, businessmen etc. Although being a yoga guru Baba Ramdev has a robust common and shrewd business sense and vigour but many are critical of his overextension of Patanjali.

The author Priyanka Pathak-Narain has written this book with intensive research and has met many persons associated with the life and work of Baba Ramdev. Her book provides multiple insights into the profile of Baba Ramdev which till now are not in the public domain. The book is an interesting read for average readers who deserve to be told about Baba Ramdev's success story. The price of the book is moderate and should be read by all.

* **Professor, Jagannath International Management School, Vasant Kunj, New Delhi**

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